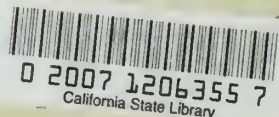


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EXTRACT

*From an Act prescribing Rules for the Government of the State Library,
passed March 8th, 1861.*

SECTION 11. The Librarian shall cause to be kept a register of all books issued and returned; and all books taken by the members of the Legislature, or its officers, shall be returned at the close of the session. If any person injure or fail to return any book taken from the Library, he shall forfeit and pay to the Librarian, for the benefit of the Library, three times the value thereof; and before the Controller shall issue his warrant in favor of any member or officer of the Legislature, or of this State, for his per diem, allowance, or salary, he shall be satisfied that such member or officer has returned all books taken out of the Library by him, and has settled all accounts for injuring such books or otherwise.

SEC. 15. Books may be taken from the Library by the members of the Legislature and its officers during the session of the same, and at any time by the Governor and the officers of the Executive Department of this State who are required to keep their offices at the seat of government, the Justices of the Supreme Court, the Attorney-General and the Trustees of the Library.



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Volume IV.]

SAN FRANCISCO, SATURDAY, JULY 6, 1872.

JULY 1890.

[Number 1.

The Race Horse.

There was a time before the introduction of railroads and locomotives, and at a later period the electric telegraph, when the fast horse was the readiest mode by which important intelligence could be communicated overland. At that time therefore, there was just one good reason for the rearing of fast horses; but do we now really need the race horse?

We believe tolerably fast horses to be desirable even now, for a variety of purposes; but how fast should they be, to inure most to common morality and real civilization? Should they be of the true race-horse breed, to benefit, in the highest degree, either those who raise them or those who use them? Quite a change of sentiment upon this subject is observable in the tone of nearly every agricultural journal in Europe, and a few in America, and these are expressing grave doubts as to their real utility.

That they are of any general service to the agriculture of a country may well be doubted, for there is no operation in the whole routine of farm labor that requires the speed of the race-horse, except it be the running down of wild cattle, in itself a mere concomitant of semi-civilization, and which, if really necessary, can be performed by the common mustang of our plains, quite as well as by the high-bred racer.

To our mind there seems to be something at the present day in the word "fast," as applicable to a portion of the animal creation, rather equivocal in its significance, and perhaps this has had its tendency in giving to some a bias unfavorable to its further propagation in whatever class or species of animals the "fast" may be found to exist.

However, as people will have the race-horse, and will bet and make or lose money on their speed, we would call their attention to one which we here illustrate, as among the finest of this character of horses, both as regards his faultless form and his reputation for speed. This horse is the property of C. C. & R. H. Parks, of "Glen Flora Farms," Waukegan, Ill.

Bonnie Scotland is a blood bay, over 16 hands high, and for beauty, substance, style, symmetry and faultless proportion, is said to be unequalled by any horse in America. He ran successfully in England, beating the best horses of his day, among them Ellington, winner of the Derby, and other first-class race-horses.

On the arrival of "Bonnie Scotland" in the United States, the following appeared in the N. Y. Tribune from the pen of Wm. H. Herbert (Frank Forrester):

"In the ship Baltic, from Liverpool, among other animals brought to this country, for the purpose of making profit for their owners, and, if possible of improving our native stock, is a thoroughbred stallion called 'Bonnie Scotland.' He is a blood bay, black legged horse, without one spot of white about him, except a star on the forehead—the richest colored bay that we have ever seen. He stands full sixteen hands high, has the longest shoulder, deepest heart-place, best fore-hand, shortest saddle-place, and the most powerful quarters of any horse now before the public, in our opinion.

He is the biggest race horse, the best walker, and the best trotter we have yet laid our eyes upon, in the shape of an importation. There is no richer or purer blood in England."

Premiums Awarded.

"Bonnie Scotland" took the \$50 premium at the Ohio State Fair, and the \$50 premium in sweepstakes, as the best of all classes. At the United States Fair, at Cincinnati, the \$500 premium, and at the Ohio State Fair, at Dayton, took the sweepstakes premium \$200, over the best ring of stallions—over 30 in number—ever shown in Ohio.

Peach Leaf Blight.

The leaves of a tree are its lungs, so say all vegetable physiologists; as such they are like

this belief alone, that we venture our opinion in reference to the

Cause of the Evil.

A tree under the influence of a high cultivation, and, perhaps, a full exposure to the sun's rays, may put forth its leaves, not perhaps, prematurely, or this may be; but with a tender, delicate organism, unfitted to bear uninjured, the extremes of temperature to which it is subjected. A few days of warm, mild weather, serves to advance the leaves, perhaps prematurely, bringing them into the very condition most likely to be affected injuriously by the cold.

A cold night, though not necessarily freezing, comes on, perhaps a succession of them; the leaves are suddenly chilled, their delicate

If the leaf is not affected by the curl some seasons, but is in others, it is simply because that certain condition of growth favorable to its development, when acted upon by the influences of heat and cold, did not intervene between the setting of the leaf and its arrival at a growth and maturity beyond being affected by the vicissitudes of climate.

We believe, therefore, that the peach leaf curl, is produced by cold or heat, or certain climatic influences entirely independent of actual frost or the attacks of animalculæ, and a disease, that so far as relates to its general prevalence in certain years, is without a known remedy.

Swiss Wines.

Many of the common Swiss wines possess a higher bouquet or aroma, than do many—except the very best—French or German wines. It

is said that the higher vines can be grown on the sides of the Alps and perfect their fruit, though not as productive as in the lower country, the higher or more intensified the flavor of the grapes produced. It is admitted by travelers, that to get the very best wine the country affords, call for the wines, the produce of the district of country you happen to be in.

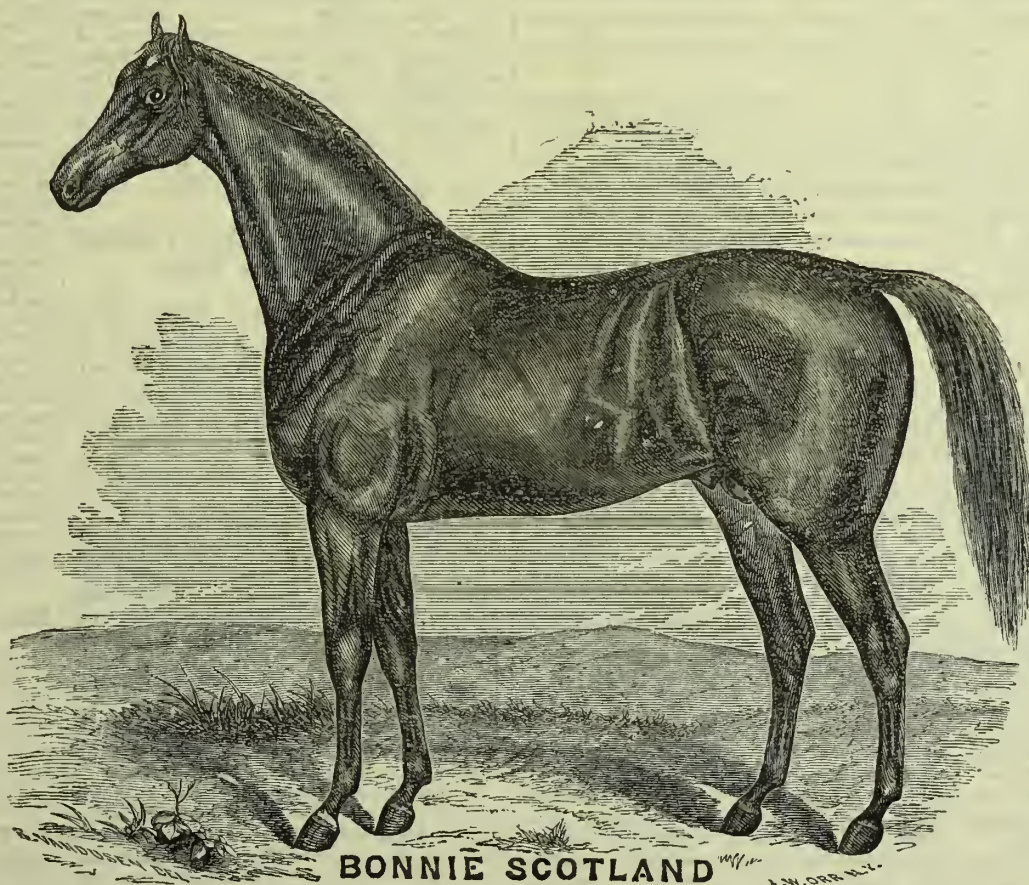
There seems to be no doubt of this fact, and except in the mere production of champagne wines, which are generally the product of more level countries, the rule has attained and holds good with all the wine countries of Europe. The wines of the Rhine hills are proverbial; the Germans know of none better. The Italian boasts of the wines of the Apennines, and the French and Castilian will tell you there are none that for real delicacy of flavor, equal those of the Pyrenees. Thus, while wine makers of other countries are producing their finest wines from the more elevated of their respective districts, we are, as yet, too much wed to the valleys.

We may, therefore, and perhaps, in no very distant future, find our very best wines to be the product of vineyards upon lands at present, to a great extent, unclaimed and unowned—except by the government—lying

along the base and extending high up among the lower mountains of the Sierras; instead of, as at present—from the wine-cellars of San Francisco.

VINE-GROWERS FAIR.—The Fair of the California Vine-Growers and Wine and Brandy Manufacturers Association, will be held in Sacramento in connection with the State Fair, commencing the 19th of September, and continuing until the 28th. Two thousand dollars is offered in premiums ranging at about fifty dollars each. By an advertisement in another column it will be seen that the association will hold a business meeting at Sacramento, on the 25th of July, and that the attendance of all interested is requested. All wine-growers should be present to assist in forwarding this great industry.

FOURTH OF JULY.—On account of the 4th coming on Thursday—a day on which we never mean to do much work if we can help it—the RURAL goes to press one day in advance of its usual time of publication.



BONNIE SCOTLAND

those of animals, organs of delicate mechanism, and liable to be affected injuriously, often from the most trivial causes. Thus, all sudden changes from heat to cold, would be likely to affect injuriously their peculiar mechanism, made more sensitive, perhaps, by the artificial condition of culture and growth of the tree; the use of stimulants as of heat and moisture, or manures and high cultivation, forcing a premature growth, and less hardy than if left to combat more with the obstacles of an uncultivated condition.

And the same would apply to old varieties that had been long under a system of forced cultivation, whilst seedlings, or comparatively new varieties, possessing more vigor, might wholly escape. And, it is quite probable, that the "poorest peaches," spoken of by a correspondent in another column of this week's paper, as being untouched by the blight, are seedlings, which accounts perhaps, for their poorer quality. The conditions named above, tend to make the leaves highly sensitive to all extraordinary influences; and it is upon

organism feels its effects, in fact the tree is attacked by a cold on its lungs, or it has the dyspepsia, or, perhaps, the exact nature of the disease is not fully understood; but the condition seems to be this, that whilst the albumen is constantly sending forward its full and undiminished supply of sap to the leaves, it is equally true that they cease properly to elaborate that sap and send it back for the production of new wood, or as food for the young fruit.

Resulting Effect.

The accumulation increases, a morbid growth is the consequence, the leaves swell, and are puffed up into strangely corrugated, irregular and uneven surfaces, that finally results in disease and a dropping of the leaf, and generally the fruit; the latter, however, not from disease, but from a positive lack of properly elaborated food, resulting from the loss of the leaves.

We would account for the appearance of the curl in different parts of the same orchard, or where two varieties of peaches are grown on the same tree, one portion affected and the other not, which is frequently the case where one of the old varieties is growing upon and along with a seedling variety, by supposing that, as with men, so with trees, some are found more sensitive, more disposed to colds, and more easily affected by climatic influence than others.

CORRESPONDENCE.

Notes of Travel in Napa County.

(By Our Traveling Correspondent.)

St. Helena.

This beautiful little village is located 18 miles northwest of Napa and about 58 miles distant from San Francisco. The White Sulphur Springs, the most prominent locality in this vicinity, having been described in your issue of last week, I will merely mention the agricultural and industrial pursuits in which the inhabitants are occupied. First, however, the town of St. Helena contains about 500 inhabitants, and is one of the most prosperous little villages in the county. It has the usual business interests of a place of its size; contains two hotels, the principal of which is the National, presided over by H. L. Chandler. Among its leading business men are J. G. Francis, the pioneer merchant and dealer in groceries, hardware, etc.; and F. A. Todd, successor to D. B. Carver, acting as postmaster, and dealer in dry goods, clothing, hardware, etc.; A. Jackson & Co. manage to dispose of about \$75,000 worth of lumber annually, showing activity and advancement in the vicinity. Fully one-half of the inhabitants of this place and the neighborhood are Germans, and the wine interest is consequently in a flourishing condition.

Hop Ranch.

Mr. A. Clock owns two hop ranches near here, one one-half mile and another a mile and a half from St. Helena. One of these ranches has 15 acres and the other 30 acres, all in hops. He has one kiln 36x40, capable of drying 800 pounds at a time, and proposes building a large one of concrete 54x66 feet. He employs 8 men regularly, and in the picking season has from 130 to 140 men at work. His ground yielded last year an average of 1,700 pounds per acre, and he expects a larger yield this year, probably one ton per acre.

Vineyards.

All of the region hereabouts is covered with vineyards, and the wine interest is of course prominent. It is difficult to enumerate all the fine places that I passed, but among those that I visited was that of John York, at which place I got a few figures as to the profits of the business, which may be interesting to your readers. His place is about one mile northwest of St. Helena, and comprises 140 acres, 50 of which are in vines. He does not manufacture wine himself, simply raises the grapes and disposes of them to the wine-makers. The crop last year averaged six tons per acre, for which he obtained twenty dollars per ton delivered at the railroad depot—or \$120 per acre. The varieties raised are principally Mission, with some Black Malvoise, Zinfandel, Golden Chasselas, and Chasselas Fontainebleau. The balance of this little farm is in hay and grain, and all the labor is performed by members of Mr. York's own family.

The above item was given so that you might get some idea of the profit of vine-growing, and the following list of vine-growers, showing the number of vines bearing, and gallons of wine made will serve to illustrate the extent to which the business is carried on near here.

Vines and Wines near St. Helena.

Pellet and Career vines, 30,000, 2 to 6 years; Pellet and Career wine, gals., 60,000—vintage 1871; C. Krug, vines, 40,000, from 3 to 9 years; C. Krug, gals. wine, 35,000, 1871; Doc. Crane, gals. wine, 30,000, 1871; Doc. Crane, vines, 50,000, 3 to 9 years; Lewelling, vines, 75,000, 1 to 8 years; Rulc, vines, 15,000, 4 to 9 years; Backus, vines, 16,000, 4 to 9 years; Backus, gals. wine, 9,000; Keyes vineyard, vines, 30,000, 4 to 10 years; Keyes vineyard, gals. wine, 15,000; York, vines, 75,000; Hudson, vines, 75,000; Lyman, vines, 20,000; Lyman, gals. wine 12,000; Glausque, gals. wine, 20,000; Glausque, vines, 30,000; McCord, 10,000; Vann, 18,000; Hastings, 100,000, 1 to 3 years; Stanley, 5,000; Armstead, 40,000, 3 to 5 years; Penwell, 10,000; Has-kin, 5,000; Fountain, 4,000; Starr, 6,000; Sumner, 3,000; Smith, 8,000; Allen, 4,000; Stratton, 5,000; Doc. Parsens, 4,000; Kister, 6,000; Hall, 8,000; Cooley, 2,000; Fulton,

10,000; Owens, 5,000; Capt. Sayward, 8,000; Gibson, 3,000; Cruey, 4,000; Osborn, 1,000; Behnken, 7,000; Lazarus, 10,000; Schults, 10,000; Clark, 4,000; Fulton, gals. wine 12,000, Stratton, 5,000.

One of the most prominent of the wine growers who has had considerable experience in the business in this section of country, gives me the names of the following varieties as those best adapted to this locality in the order of their excellence; Johannesberg and Franklin of the Reisling variety; Black Malvoise and Zinfandel for red wine; Muscatel; the varieties of the Chasselas. The same gentleman intends this season getting out a Catawba vineyard for making Catawba wine.

L. P. MC.

San Bernardino County.

EDITORS RURAL PRESS:—Leaving San Jacinto and its pleasant groves of cottonwood we enter a cañon penetrating the ridge which divides the waters of the Santa Ana from those of the first mentioned stream. It appears odd to say anything about water after traveling in dry arroyos and river beds for the last hundred miles or more; nevertheless there was veritable water running out of this cañon, and as the road ran along the bed of the creek for miles, one could not avoid contrasting the limped element with the scorching sand of some similar roads we had traversed. As we neared the head of the cañon it was difficult to perceive any way of exit from the *cul-de-sac*, as the sides of the cañon were almost perpendicular, but the road led up the point of one of the dividing spots to the mesa, at an angle which compelled one to dismount to enable the animals to scramble up the five hundred feet of acclivity which separated the bottom from the tableland above.

The mesa once reached, we bowled along merrily a few miles to the San Geronio plain, which forms one of the best, natural passes over the Sierras. Here begins a new verdure, sustained by thousands of perennial springs in hundreds of valleys and plains, extending northeastly and westwardly a hundred miles at least, presenting the most inviting argument for a railroad imaginable.

Land Subsidies and Grants.

It does appear a little singular that a subsidy, should be required to induce any railroad company diverge a little in order to traverse a country susceptible of the utmost production, in preference to passing the same distance over an entirely unproductive desert, as the present proposed route from Fort Tejon to the Colorado is. This part of San Bernardino county although comparatively thickly populated, is capable of sustaining ten times the number of its present inhabitants and would, if the Grant and Railroad Subsidy incubus could be dispensed with.

There are settlers above Frinks' Ranch that have occupied that land undisturbed fourteen years, who are now swooped down upon and their land taken by trumped up grants and there are many other cases of the same kind in Southern California. Many millions of dollars would have been added to the taxable property of this State, by agricultural improvements alone, if the grant question had been definitely settled, as it should have been fifteen years since.

What a Glorious Panorama

Unfolds, as the traveller leaves the San Geronio, going north. The valley for twenty miles spreads out like a map, below, with each village, hamlet, and ranch, lined by living green. The coloring is so grateful to the eye, one is never tired of looking. Almost the first place upon entering the valley proper of San Bernardino, from the south, is that of Dr. Barton's, on the sight of the old mission. Everything about the premises indicates substantial liberality and prosperity. The grounds are watered by an acquia, taken from the Santa Ana river, some ten miles above; of a capacity to run any needful machinery, as well as to irrigate thousands of acres of land.

A Geographical Error.

Before leaving the vicinity of San Geronio entirely, it may be well to mention a grave error of the geographer in placing that prominent landmark, Mt. San Jacinto, at least twenty miles away from its actual position. It flanks San Geronio Pass on the south, as Mt. San Bernardino does the northern side of the Pass—instead of being twenty miles away, as the map-makers have

it. This beautiful picture spread over a stretch of country farther than the eye can reach, is a standing rebuke to those fishers for subsidies, who feign would have the people believe that a railroad was going a hundred miles through an irreclaimable desert, when, by a divergence of fifty miles, such a succession of productive valleys can be passed through and their attendant business obtained.

Dr. Barton has eighty acres in vineyard, with substantial brick store-house and distillery for wines and brandies; he has also a thrifty bearing orange orchard, together with a choice selection of other fruits and foreign vines. Passing through old San Bernardino we must not forget to notice the prolific orchard of Von Devoin, three orange trees within which, brought its owner \$200 last year for their fruit. Passing from San Bernardino toward the southwest, down the Santa Ana, we leave Riverside, with its parched fields and its victimized hunters for earthly paradises, on our left, and in twenty-five miles come to the Rincon settlement, which is on the north side of the Santa Ana, instead of on the south, as laid down on the maps.

Hickey's Ranch.

Mr. J. C. Hickey has here one of the choice locations, just within reach of the sea breeze, and watered by living springs. This is literally the land flowing with milk and honey. The distended udders of the fifty or more fine American cows attests the excellence of the adjacent pastures and meadows, three hundred acres of which are owned by Mr. Hickey, who has just bought from the "Rincon" grant, and thinks he can subsist upon this morsel of mother earth, if the cows continue to thrive as they have the past two dry years.

Here let us say a word for the lands that cannot be irrigated. One-half, at least, of the land that will produce small grain will also produce the vine in its utmost perfection, as is attested by actual trial. A vineyard of eighty acres, where I am now writing, is in the fullest bearing—vines five years old—and has not had a drop of water except what has fallen; an effectual estoppel for the mouths of the croakers.

F. M. SHAW.

Los Angeles Co., June 15, 1872.

A Viniculturist on Alcohol in California and Foreign Wines.

EDITORS PACIFIC RURAL PRESS:—As a grape grower and wine manufacturer of twelve years' experience in California, will you allow me to criticise your article on California wines published in your issue of June 1st, also the criticism of Mr. G. Backus, of St. Helena, which appeared in your issue of the 22d inst.

I will preface this article by admitting that a large proportion of our California wines contain an excess of spirit, and are as a consequence *heady*; but I must differ with you in your statement that they contain from fifteen to twenty per cent. of alcohol.

Every intelligent vintner knows that two per cent. of sugar will produce when well fermented, one per cent. of alcohol; our grapes at the time of the vintage contain from twenty to thirty per cent. of sugar.

If the must (grape juice) contains twenty per cent. of sugar, the fermentation will be completed in from four to six days, the wine will then be dry, and contain ten per cent. of alcohol; if it contains twenty-four per cent., the fermentation will last a little longer, and then the wine when dry will contain twelve per cent. of spirit.

If the must contains thirty per cent. of sugar, the fermentation will be very active until twelve or thirteen per cent. of alcohol has been eliminated, when the fermentation will stop, and from four to six per cent. of sugar will remain in the wine, there being enough alcohol present to preserve the remaining sugar, and prevent further fermentation.

According to this, no wine containing fifteen per cent. of alcohol can be made through the natural process of fermentation, much less any containing twenty per cent.

I have no doubt, you can find wines with the percentage of alcohol you mention, but they are all fortified by the addition of a certain amount of spirit, and consequently, not the pure and simple result of natural fermentation.

French and German dry wines vary from nine to eleven per cent. of alcohol; under nine they will not stand shipment; anything above eleven per cent. is fortified, and belongs to the stronger kinds, such as port, sherry, madeira, etc.

Water Cannot be Used to Reduce Wines.

Not even before fermentation; it is true, water reduces the percentage of alcohol, but water and sugar are not the only elements necessary to make a good wine; nature alone produces and elaborates all these elements through the process of growth and ripening of the grapes. I have tried introducing water with the various kinds of grapes. The only way

To Make a Good Light Wine,

Is to pick the grapes before they are too ripe, this will insure a prompt fermentation, and produce a light and well-flavored wine, not at all *heady*, as I am ready to prove to you if you will take the trouble to call on me and sample the contents of my cellars.

VITIS.

St. Helena, Napa Co., June 25, 1872.

Fossil Discoveries in Solano County.

EDITORS RURAL PRESS:—There has recently been an interesting fossil discovery near this locality, of one more of those gigantic mammoths which in the olden time, clothed in flesh, must have made the wilderness reverberate with the echo of their loud trumpeting. The fossils just discovered consists of one underjaw with the molar grinder entire; one upper grinder and part of another; some bones of the neck and back; some pieces of ribs; part of one shin-bone from the knee-joint down to the ankle; a piece of a tusk about one foot in length and a great many pieces of different bones much broken up.

These fossils were discovered by a gentleman by the name of Allison, on his farm about three miles west of Rio Vista, in Solano county. The remains were found in a ravine where they had been partly washed bare by the excessive rains of last winter. They were embedded in the substratum of yellow clay that usually underlies the alluvium deposit of black adobe.

The bones evidently belonged to some huge mammoth, *Elephas Primigenius*. The piece of tusk is seven inches in diameter and must have been broken off at least six feet from the head of the animal. The knee-joint is thirteen inches in its longest diameter. I have in my possession one of the upper teeth that is 9 $\frac{3}{4}$ inches on its grinding surface, and part is gone at that. The neck bones are 7 $\frac{3}{4}$ inches in diameter. They are the bones of a very old animal, as evinced by the tooth in the under jaw being nearly worn down even to where the gums must once have been.

There are probably more of the bones that can be obtained, and Mr. Allison says he will try to find the other tusk which may be in a better state of preservation.

How interesting it would be could we only look back at the condition of the earth in the far-distant past, when these huge mammoths and mastodons roamed at will in vast herds unmolested by the presence or obstructions of man. How long ago that was it is useless to conjecture, as their remains have been discovered under such peculiar circumstances as to warrant the belief that the ocean has rolled its stormy billows over the land since they ceased to exist upon it.

W. R. FRINK.

Rio Vista, June 18, 1872.

About that "Four Years on a Farm."

EDITORS RURAL PRESS:—I have just read the letter of "Four years on a Farm," in the RURAL of the 15th inst., and I fear it is another hint from Mrs. Artemesia M—— to build her a house, as well as a front fence. However, I know Mrs. M—— has no trouble gathering the eggs, for the birdies have nice nests made in lime barrels placed on scaffolding, out of the reach of skunks, rats, etc., and as for roosting places, they perch themselves very comfortably on the comb of the barn; and those not able to climb the ladder, or fly so high, accommodate themselves on the edge of the horse-mangers and harness pegs.

Chicken Fatality.

One thing I do not understand, why it is that chickens are so short-lived in the country; mine generally begin to die off at from 12 to 18 months old; they have free range over a large extent of cultivated ground, and it seems that they might get a sufficient amount of insect food to keep them in health, as I only keep two or three dozen grown ones together at a time.

Harvest

Is about over in this neighborhood; as the crops were short, nearly everything was cut for hay. Good hay is selling at from \$8 to \$10 per ton, in the field, and from \$12 to \$13, baled. Corn and vegetables are not looking so well as at this time last year, in consequence of so much cool weather this spring.

Fruits of all kinds will be abundant this season, notwithstanding the frosts of April.

St. Helena, June 17th, 1872.

J. M.

MECHANICAL & SCIENTIFIC.

Maple Sugar—Its Formation.

The formation of the sugar in the sap of the maple, like many other organic processes, is not perfectly understood by chemists, but the following facts are well ascertained, and afford a partial explanation of the mystery. In the latter part of the summer considerable starch and similar substances are deposited in the cells of the sap wood of trees. These are the stores laid up for the manufacture of the foliage for the next summer. When spring comes the roots of the trees wake up from their winter sleep, and imbibe large quantities of water from the soil, long before the buds begin to swell. This water is of course charged with various salts, some of which, like carbonate of lime, are held in solution by the carbonic acid contained in the water, while others are soluble in pure water. This water is gradually carried up the stem of the tree by capillary attraction and by osmosis; but as it ascends through the cells it converts some of their contents into sugar, becoming denser and more saccharine as it rises, until finally it reaches the buds.

If now the weather is warm enough, the buds expand and soon burst into leaves and flowers. The first energies of the tree are devoted to perfecting these important parts; and when this is accomplished the leaves commence to prepare the material for the growth of another year. This is deposited in the new layer of wood which is formed directly under the bark, ready to be taken up again the next spring for the formation of new twigs and leaves, and thus the circulation goes on from year to year. The only part of the trunk that takes any active part in the circulation is the sap or light-colored wood. The old dark portion of the wood in the interior has become clogged up with insoluble matter, and is no longer capable either of conducting sap or of performing any other function in the economy of the tree.

If we wish to make sugar from the sap of any tree, it must be tapped at the time of year when it is most abundantly charged with that liquid, and this is usually a month or two before the leaves begin to expand.

Nearly all our hard-wood trees will yield more or less sugar, but only a very few of them furnish it in large quantities, or pure enough for domestic use. The *Acer*, or Maple family, stands at the head of the list in this respect, and chief among these is the *Acer Saccharinum*, or sugar maple, the juice of which contains from three to six per cent. of cane sugar. That which comes from the tree when it is first tapped is much richer than that which flows later in the season. The first sap ascending the stem naturally dissolves out the largest proportion of the starch and gum. After the sap is drawn it is concentrated by boiling until it commences to crystallize, when it is allowed to cool and deposit the sugar.

During this concentration of the sap the lime salts which have been held in solution are gradually precipitated as the syrup becomes more dense. This deposit, or "nitre," as it is called, consists, according to some authorities, of carbonate of lime; others consider it to be malate of lime or saccharate of lime. The flow of sap varies much with the state of the weather, being most abundant when the nights are cool and the days warm.

This has been explained on the supposition that on warm days the air contained in the trunk of the tree expands, thus forcing the sap out; while as the tree cools off at night the air contracts, and the sap rises from the roots to supply the vacuum, to be again forced out the next day. As soon as the leaves commence to expand the flow ceases, because then the leaves are able to evaporate all the water that the roots can supply. But the continual tapping of the tree, and the withdrawal of its stores of nourishment, soon causes it to languish, and it cannot survive such treatment many years any more than a man could survive the loss of a considerable portion of blood each day.—*Ex.*

ARTIFICIAL WATER LIME.—It has been long known to chemists that water lime consists substantially of quick lime, burnt clay, and a small portion of the oxides of iron and magnesia, but scarcely any effort has been made to utilize this knowledge. All yellow or red clays contain iron, and most specimens of lime in use contain the required magnesia. If burnt clay or brick dust in the fine powder be mixed with an equal weight of fresh slacked lime, and twice this weight of clean, sharp sand be added, a compound will be formed which will harden under water equal to the best hydraulic cement.

CHEMICAL ACTION IN POROUS FILTERS.—In the course of an examination of filters, at the instance of the *British Medical Journal*, Professor Wanklyn has had proof that filtration through beds of porous materials includes very powerful chemical action, albuminoid matter being instantly resolved into ammonia and other products by the action of the filter, which, indeed, behaves in this respect like a boiling solution of permanganate of potash. A good filter is a sanitary engine of great power.

ONE of the salts most sensitive to heat is the double iodide of silver and mercury. Its natural color is yellow, but it turns red if warmed, and returns yellow again on cooling.

The New Mode of Conveying Compressed Air as a Motor.

We made reference, a few months since to some interesting experiments which had just then been concluded in Portland, Maine, with regard to an improved method of conveying air or steam for motive purposes, so as to avoid the usual amount of friction against the walls of the conducting pipe. The principle involved, and mode of testing the same, is stated as follows:

"Given to transmit the full effect of an air compressor (not of the prime motor), at a pressure of say 40 lbs. to the inch. The first step is to determine the size of the conduit pipe. Set a pressure gauge on the reservoir which receives the compressed air, and when a pressure of 40 lbs. is indicated, open an orifice in the reservoir so large as to exhaust the effect of the compressor as fast as delivered.

The compressor is now working into the reservoir, the orifice is now blowing off, and the gauge stands at 40. Suppose the orifice to be one inch in diameter. Now attach to the same a pipe of one inch calibre, say 100 feet long. At a point near the outer end of this pipe set a pressure gauge, and the pressure, with the pipe wide open, will be found to be something less than 40 lbs. The element of friction has been developed in the pipe, and will accumulate rapidly as the distance is increased, and it is evident that a pipe of the diameter of the original exhaustive orifice will not convey the force without loss.

Take a new pipe $1\frac{1}{4}$ inch diameter; on this find the point where a slight diminution of pressure is indicated by the gauge. Just beyond this point insert a ring of one inch orifice in the pipe, giving a shoulder, all round, of $\frac{1}{8}$ inch, and the lost pressure will be found to have been restored.

The effect of the ring or diaphragm is to line the pipe with a hollow cylinder of air throughout, which cannot advance, being prevented by the ring and held against the pipe with a pressure of 40 lbs. to the inch, and all the friction which occurs is, consequently, that of air against air.

There are now at a considerable distance from the reservoir, an orifice of one inch, and a pressure of 40 lbs. to the inch, and there being no more than these at the reservoir itself, no force has been lost in the transmission. The reservoir has been virtually moved forward to this point. Repeating the operation at the same distance out from this point as from this to the reservoir produces the same result. Each joint or section of the pipe charges the succeeding with original force, and it would seem that there can be no limit to the application of the principle."

This invention is the product of the ingenious brain of an old Californian, Mr. Robert Spear, who not only conceived the idea in San Francisco, but made his first experiments here in July, 1866. Mr. Spear afterwards went East, where he continued his experiments, and when he made his application for a patent, the United States Patent Office sent its ablest examiners to Boston to test it. The Department would not grant his claims to their full extent, until after such test had been made—so it is reported in the *Boston Advertiser*.

So preposterous were his claims that the commissioners thought he was crazy when he first made his application for a patent.

Mr. Spear demonstrates the correctness of his idea of the mode of the passage of the currents of air or steam through his new conduits by using colored fluids in glass tubes provided with his invention, and by which it is plainly shown that the propelled current is kept in the center of the tube, without any friction at the sides. If, by a diaphragm pierced with holes at the sides, this current is forced to divide and seek passage next the inner surface of the pipe, it at once resumes its course in the centre after the obstruction is passed. Mr. Spear has also discovered that while any angle or bend in any ordinary pipe obstructs a fluid flowing through, by enlarging the pipe at angles, the friction and loss of power is overcome. At Mount Ceniz and at the Hoosac tunnel it has been found necessary greatly to enlarge the whole conducting pipe for every mile of distance the compressed air has to be forced. This, of course, seriously increases the expense. Mr. Spear's invention greatly reduces the size of conduits necessary for long distance.

The claim set up that this invention proves the existence of an exception to the law of physics, that there can be no motion without friction—that not a particle of difference can be detected between the pressure at the reservoir and at the extreme end of the conduit pipe, must still be taken with many grains of allowance notwithstanding "the concurrent testimony of the most eminent men of the country to that effect." There must be friction in passing the iron rings; and it cannot be possible that even a current of air can pass through air at rest without friction.

DRYING LUMBER BY STEAM.—All the piano-makers in New York, and some cabinet-makers, dry their lumber by steam heat. The process is very simple. A large room is provided with systems of iron tubes, through which the steam circulates, and so arranged that the water of condensation flows by itself back to the boiler. No steam or water can get out, so that only the heat gets into the room, in which the lumber is kept for weeks, and even months, at a temperature of 100 to 150° F. Another process is to expose the lumber to the steam itself.

A NEW INVENTION.—It is probable that before long the usual notice to be seen on board steamboats, "No smoking allowed abaft the funnel," will have to be discontinued, owing to the absence of any funnel abaft which smoking can be prohibited. Smokers will be simply requested to discharge their smoke into the water. According to the *Swiss Times*, two Austrian marine officers and a marine engineer have discovered by united experiments a method of conveying away under water the smoke from the steam engine, instead of through a funnel into the air. They make use of double ventilators, which compress the smoke and force it overboard. For propelling these ventilators they employ, according to circumstances, either water power—that is, the pressure of the water between the surface of the water and the place where this apparatus is fixed—or, for smaller vessels, steam power. The advantages of this discovery are the greater security of ships of war, as in armor-plated ships the only vulnerable part, the funnel, will be taken away. Other advantages will be the saving of space now occupied by the passage of the funnel through every deck, as well as security against danger from fire; complete regulation of the draught, and in consequence of that, the application of a method for consuming the smoke, thereby effecting a saving of fuel; and, finally, better ventilation of the boiler. For submarine and torpedo ships and monitors this discovery will be of great value, as these last will be rendered quite invulnerable. The trials that have been made have, it is alleged, resulted in a complete success, even to the smallest details.

FLORICULTURE.

The Wild Flowers of San Joaquin Valley.

[Written for the RURAL PRESS, by RALPH RAMBLER.]

Reader, have your wanderings in pursuit of business or pleasure, ever led you through San Joaquin Valley? And were you ever there when April showers have freshened its verdure, after the abundant rains of winter have brought our native plants to their full perfection? If so, where did you ever see a richer or more beautiful garden-spot of wild flowers?

Wherever the plowshare has not lately turned the fertile soil, and where the rank grain is not waving in an unbroken surface of green, the native sod is densely studded with varied flowers of almost every hue—some of unsurpassed beauty and fragrance. Here as elsewhere in our State,

Nature

Has sown with unsparing hand. Away from our river-bottoms, our foothills and mountains, in which alone our timber grows, and wherever the busy farmer has not disturbed the reign of Nature, this flower-bed of annual plants, varying in height from a few inches to rarely more than two or three feet, extends as far as the eye can reach, with not a single tree or shrub to interrupt the view.

Such a sight is here presented as greeted the eyes of the hardy pioneers of the Southern and Northwestern States, when they gazed for the first time upon their broad prairies where the Red-man, the deer, and the buffalo roamed in undisputed possession. And as the early denizens of these wild prairies have long since vanished before the steady march of civilization, and with them may have perished many of the flowers of their day, so must the lapse of a quarter or a half century, make similar changes in our valley. Come then, let us

Ramble

Together, and as a pastime and pleasure, let us study and chronicle the names of some of our floral beauties, before they shall have passed away.

For even though, dear reader, none of these flowers shall finally perish to be seen no more, the spring-time will soon end, the rains will cease, the plains now so richly carpeted, will then be dry and sere, and our wild flowers will leave us, until another spring, like a resurrection morn, shall bring them again to beautify and cheer our way. And let us take the children with us in our rambles, for they all love flowers, and can learn some useful lessons from their study. What then are the

Flowers

That most attract the eye on our sandier, or lighter soils? They are the orange-colored poppy, blue and pink lupines, lovegroves, bluebells, the painted-cup, or, as it might be very suitably named, princess' plume, the flax-flower, wild chrysanthemum, star-thistle, milk-weed, dandelion, lark spurs, evening-primroses, and several others worthy of record, but which as yet unfortunately have no common English name, such as the white collinsia, the purple calandrinia, the lilac-colored phacelia, and the two species of gilia.

The most common on our harder and heavier soils are yellow, white and purple tulips, two kinds of yellow poppy, and a white variety which is comparatively rare, the white lupine, the cowslip, white heliotrope, several members of the lily and asphodel families, clovers, Indian wheat, and a tall, odd-looking member of the mint family, most likely a species of dragon-head, with its delicately fringed and lilac-tinted flowers resting in a bed of thorns. The latter plant is commonly but incorrectly called "thistle," on account of its prickly leaves.

It may be well to mention, in passing, that lupine is the common name of what is familiarly known to many as the pea-plant. Another common name for it is *sun-dial*, given from its peculiar habit of always turning the upper surface of its leaves towards the sun, thus regularly following his daily course from east to west. Larkspurs and many other flowers most abundant on our looser lands, are also found on our heavy soil, where they usually indicate its greater fertility by their ranker growth.

Along our streams alone, are found wild roses, violets, sun-flowers, wild tobacco, the yellow monkey-flower, a large vetch or pea vine, with pale purple flowers, equal in size and beauty to those of the sweet pea, Indian lettuce, some of the larger varieties of clover, and the very beautiful willow-herb with its showy pink and purple flowers, reminding one at a glance of the fuchsia, to which it is closely related. And while we enumerate the most noted of our wild flowers, we must not omit to mention the prairie among our many plants suitable for

Pasturage;

We mean, the Fil-e-ree (accent on last syllable), as we really pronounce it, by a short and natural corruption in English of the Spanish *alfilerilla*. Although it is not a native of California, and though its small pink flowers are not among the most conspicuous, the whole plant with its finely divided leaves and queer seed-pods, is one of the most graceful and beautiful, as well as one of the most generally distributed over the valleys and foothills of our State.

These, which comprise our most showy wild flowers, and many other pretty ones for which we have as yet no common names, meet our gaze until they become like the familiar faces of so many friends, on every walk, or drive or ride throughout our broad valley. Peeping out, or towering high, from among their rich green leaves and our various grasses; or intermingled with the young and thinner grain, they paint the roadsides with every tint of the rainbow, or with the purest white.

In our future rambles and chats, we shall try to describe, if not all, at least our most attractive flowers, so that anyone, with a little observation and care, can recognize them by their common names, some of which are mentioned above. We shall also give their

Latin, or Systematic Names,

Selected by the leading naturalists of the world, so that a professional botanist may identify them, and any other reader who wishes to do so, may learn these names and know the reasons why they have been chosen. For there should be no wish, connected with his studies, dearer to one who loves the noble and useful sciences of botany and natural history, than to remove the prejudices existing against them among the masses of our people, on account of many technical terms necessary to secure the proper accuracy and system in every science, that they too may find that feature attractive, which, unless properly understood, must very naturally be repulsive. While we should enter the

Temple of Nature

With the spirit of inquiry, the humble faith and love of a little child, we should strive to study its wonders and beauties with the zeal and accuracy of a trained and true philosopher, who would learn from the Great Architect of the Universe by "Looking through Nature up to Nature's God;" and by seeing that the principles thus obtained are reconciled and combined with the unfailing truths of His revelation. As the only sure foundation for all our inquiries after light and truth, let us cling unswervingly to this principle: THE WORKS AND WORDS OF THE CREATOR CAN NOT CONTRADICT EACH OTHER, WHEN BOTH ARE PROPERLY INTERPRETED. This is at once the foundation and corner-stone and key of all true science.

Descriptions of some of our wild flowers will be attempted in future numbers. San Joaquin Valley, May, 1872.

Plant Flowers.

The following short sermon from the *Farmers' Advocate*, by "Theodore," will commend itself to our readers for its good sense and beauty:

Farmers' wives and daughters, here is a subject in which you all feel an interest. Taste leaps with joy at its discussion; pride approves the choice, judgment confirms it, health rejoices at the prospect, and the angels of the household will furnish willing hands for the accomplishment of the object. The object is for the queen of the household to surround it with shrubbery and flowers, make it attractive, healthy, cool, comfortable and refreshing.

Would you be surrounded with flowers, spring, summer and autumn? Would you live in a home of roses? Would you inhale sweetness and perfume? Would you gaze upon beauty until it is reflected permanently in your cheeks, and your breath becomes one with their fragrance? Then plant about you the choicest shrubbery and flowers which bloom, each succeeding the other, and make your home a charmed spot, and the envy of all around you. This is not man's work, but woman's work. It is one of her rights; guard it vigilantly and see that no trespassing hand deprives you of your "inalienable rights."

Would you excite the envy of your friends, the noblest emulation of your neighbors, the admiration of your visitors and the passer-by, the love of your husband, the spirit of refinement and the love of beauty in your children, the gratitude of all, and the approbation of your own conscience, then—plant flowers.

FARMERS IN COUNCIL.

San Jose Farmers' Club and Protective Association.

[Reported specially for the PACIFIC RURAL PRESS.]

Meeting of June 29th.

President Casey in the chair. Mr. O. Cottle reported that the Board of Managers had rented a new hall, in Balbach's block, at \$20 per month. Mr. Holloway, for the Committee on Taxing Growing Crops, reported against the tax. He accompanied the report with a few remarks. He said assessing the land, then the improvements and then the crops, was very much like assessing a horse, then his legs and then his shoes. Real estate means ownership in land in all appurtenances thereunto belonging, and should all be assessed together. Mr. O. Cottle could not see much in the report. Was it not just the same to take two listings, one of land at \$500, and one on improvements of \$500, as to make one of real estate at \$1,000. The valuation of property must be left to the judgment of the Assessor. Then our remedy lies in electing good men to that position. There is not the least danger of the Supervisors levying too high a rate per cent., as suggested in the report. They are men of fair ability, and now they have the value of all the property in the county and know how much tax must be raised, it is only an easy problem in the rule of three, which a ten year-old boy might work. The question was raised that there was nothing before the Club, and the discussion out of order, whereupon Mr. York moved the

Adoption of the Report.

Mr. Holloway had two points to make; first, was to resist the tax; and the second, to be represented before the Board of Equalization. He knew a man who had a few mustangs worth from \$10 to \$15 per head, which were assessed \$30 each. He would rather pay the tax than lose a day going before the Board of Equalization. As soon as a man is elected to office, he acts as if he was a fed counsel against the poor people. This thing of dividing and subdividing property on the assessment rolls, is only to get additional taxes. We must attend to it before the Board of Equalization, or there will be tens of thousands collected of the poor to favor the Millers and the Stanfords. Small estates are assessed above their true value, while the large estates are assessed far below. A bold, united front ought to be presented to this thing.

Mr. Cottle said he was still unchanged in his opinions; even after listening to the arguments, he could see no good in the report. The whole question of valuation lies in the judgment of the Assessors. The only plan is to elect competent men. He don't want that report to go out as the opinions of this Club.

Mr. Burgland considered this tax unjust. It was discouraging to labor. One man works and puts in a crop and is taxed for it; another idles away his time and goes free. It works against industry; it is offering a premium to idleness. Such a thing was not heard of in the country where he came from.

Mr. J. Hobson said that revenue must be raised and as we were different from other people of necessity, we would have different plans, but he did not like the separate listing; it gets at the property of the poor more closely than that of the rich. On small divisions the improvements are noticed more particularly and assessed higher. Wealthy people whose property is in bonds and money are assessed no higher than usual but the poor are.

The vote being taken six voted for the adoption of the report and one against.

Storing Grain in Bulk.

Mr. Wade of Alviso offered to furnish sacks to those wishing to store their wheat in the grain bins of his brick warehouse.

Mr. Pebbles in behalf of Committee on Railroads reported progress. Considered the prospect of securing a narrow-gauge road to Alviso as very favorable.

The Question adopted for discussion at next meeting is Grass and Grazing.

The Club next took up the License Question. Mr. Pebbles thinks it better to preserve a system of License. Those who trade should help to pay the expenses of government. If it were not for the License there would be whisky shops at almost every door. The license system keeps them thinned out.

Mr. Thompson said that they tried the free trade system in Ohio and it did not work well. Whisky shops became such a nuisance that they were soon compelled to resort to the License system for a partial relief.

Mr. Burgland had lived where there were no such taxes, and he thought if the license system were abolished there would be less drinking. The poor suffer more by it than the rich. It comes from them indirectly. All tax should be direct and should be levied on property, no man should be taxed for his vocation.

Mr. Holloway said: "There is something in this question. He wants to abolish all license but not encourage licentiousness. Many appeared to think an old lie better than a new truth. We have discovered that it is not best, for a few dollars, to license a man to steal or kill. Why can't we see the same in the liquor trade? He for one did not want to be guilty of, or have any part or parcel, in licensing all the crimes of such an iniquitous business. Let them have liquor if they must, but not by me."

Selling the Right to Do Evil.

Selling of privileges, or license, originated amongst the aristocracy as against the masses. In San Jose a man can't sell a few vegetables on the streets without being fined. If he has a horse for sale he does not cry it on the street himself, but has to fee a petty auctioneer. He supposed that the town of San Jose was making money out of it, but it was all a mistake; he finds that the judges fees for trying the "drunk" that result from the system, is more than the sum collected for license.

Mr. J. Hobson said formerly there were but few licenses sold; now, most everything is licensed, even a farmer can't sell his vegetables to the consumers. They have to pass through the hands of licensed traders, which makes all kinds of provisions come much higher. There are subjects that people appear to be afraid of, those are the subjects we should investigate. There is no question so important as the liquor license question, and we are guilty of taxing money from it to pay part of our taxes.

Mr. Pebbles thinks we should keep to the question and not spend the time in Temperance Lectures. He recommends altering but not abolishing the license system. Taking up men three or four times for a drunk has nothing to do with the question. What is the use of abolishing the license until we can stop the sale of liquor? Mr. Wade said that in Europe where the system of licensing the sale of liquors originated, the intention was to let none but good moral men sell it and also to require them to furnish victuals to travelers. He said the matter was worse in San Francisco than anywhere else; there none but licensed parties could trade and they were so independent and selfish that they did just as they pleased, kept what they liked and sent you the balance. He was opposed to those troublesome little licenses on the sale of farm produce but thought the sale of liquors ought to be curtailed by license.

The committee on the purchase of sacks reported that they, individually, were going to purchase here in California, instead of sending off, that they thought, everything considered, it would be the most profitable. Adjourned to meet next Saturday in the new hall.

San Joaquin Farmers' Club.

The San Joaquin Farmers' Club met in regular weekly session Saturday afternoon, June 22d, at 2 p. m., Dr. E. S. Holden, President, in the chair. The Chair announced that the subject agreed upon for discussion was "Fertilizing the Soil."

Mr. Hewlett, of the firm of Jones & Hewlett, came into the hall accompanied by Mr. B. Erskine, and introduced the latter gentleman to the Chair, who introduced Mr. Erskine to the Club. The latter is a member of the firm of J. I. Case & Co., manufacturers of improved threshing machines, of Racine (Wis). Mr. Erskine stated that the firm he represented manufactured on a very large scale, and he desired to introduce the Case machine in the Pacific coast market. He expressed a willingness to have the machine tested in the field in competition with others, and thereby enable farmers to judge of its practical operations from their own personal observations. Mr. Hewlett desired to ascertain the object of testing machines in the field, and how and in what manner such contest was designed to be conducted. As agents for the sale of the Hall and the Pitt's machines, his firm had no authority from the manufacturers to place them in competition with others at the manufacturers' expense; and being engaged in selling, and not in farming, his firm had neither suitable men nor teams to enable him to put the machines successfully in the field. Mr. Erskine had, however, authorized him to put the Case machine in the field in competition with any and all others that might offer.

Mr. Hewlett remarked that he was ready to contribute \$25 towards defraying the necessary expenses of a test of threshing machines. Mr. Lewis moved that two more members be added by the Chair to the committee, on Threshers. The motion was carried, and Messrs. Phelps and Smyth were added to the Committee.

A New Industrial Interest.

President Holden briefly addressed the club, and stated that mixed crops would soon become an absolute necessity with the farmers of California—mixed crops in true Yankee style. Farmers would not always raise wheat and nothing else. He called the attention of the club to a sample of native brandy—the pure article—which, by a newly-discovered chemical process, was thoroughly divested of ether, fusel oil, and every other objectionable element. Samples of fusel oil and ether, which had been extracted, were also exhibited. Dr. Holden then introduced Dr. Curtis of Yolo county, who briefly addressed the club in relation to the operations of the Johnson Brandy and Wine Manufactory of Sacramento, the establishment which produced the article of brandy which Dr. Holden had exhibited to the members. He had been elected Vice-President of the State Pomological Society, and he was visiting different localities and working in the interest of the State. He strongly urged the planting of fruit trees, and very forcibly the profits and advantages to be derived from a more extensive cultivation of the grape. He likewise urged the necessity of erecting a home distillery as a means of keeping money at home and increasing local industries. He submitted a paper containing an estimate of

the necessary expense of a brandy manufactory in Stockton, from which we make the following extract:

1,000 tons of grapes.....	\$18,000
Erection of distillery.....	14,700
Brick warehouse, 40x100 feet, two stories.....	4,300
Revenue tax on 26,000 gallons brandy@55c. gold coin.....	14,300
Revenue tax on 5,000 gallons brandy@55c.....	2,750
Labor account.....	2,000
Fuel.....	800
Salary of Superintendent and Secretary.....	2,500
Care of wine one year.....	1,500
Watchman nine months.....	450
Casks for 50,000 gallons wine 10c.....	5,000
Casks for 26,000 gallons brandy at 10c.....	3,600
Insurance on distillery, \$12,000 one year at 4 per cent.....	480
Insurance on \$60,000 in warehouse, one year at 9-10 per cent.....	540
Sundries.....	750

Total.....\$70,670

PRODUCT FOR ONE YEAR.

50,000 gallons port and sherry at \$1.00.....	\$50,000
26,000 gallons brandy at \$2.00.....	52,000

Total.....\$102,000

It will be noticed that the expense of building is included in the above, which will be clear profit for the next year. The estimate is based upon fifteen pounds grapes to a gallon of wine, and forty-three gallons brandy per ton of grapes.

Mr. Phelps said that he would shortly offer a resolution in the club favoring the exemption of certain manufactures from local taxation. On motion, the club adjourned.

Oakland Farming, Horticultural and Industrial Club.

Lecture on Scale Insects.

This Club held another highly interesting meeting Wednesday evening, June 26th, in the chemical lecture room of the University, Prof. Carr presiding. Before the meeting was called to order Prof. Carr exhibited to the members a number of silkworms, eggs and cocoons which he had procured on a recent visit to San Jose.

After the reading of the minutes of the previous meeting, and the transaction of some regular club business, Dr. W. P. Gibbons, of Alameda, delivered a short lecture upon "Scale Insects." The subject of scale insects in trees had been agreed upon as the topic for the evening, and the doctor had given these pests to horticulturist some attention since the last meeting of the club, preparatory to telling the club something about the nuisance which has really become a plague to horticulturists in this neighborhood. The doctor illustrated his lecture with pencil drawings and blackboard sketches, throwing much light upon a subject in which all felt a deep interest, but with which they were but little acquainted. Several of the species of scale insects were described, and their habits, so far as he had observed them, commented upon. The doctor then explained the manner in which trees are injured by the insects, and in reply to questions as to remedies or the soil, gave some solid advice. The reporter of the Oakland News adds the following notes of the lecture:

"The Doctor exhibited a drawing, many times enlarged, of one species of scale insects which are making sad havoc with the fruit trees in this vicinity. It is somewhat of the shape of a half-pea down, and varies in size from the size of a half-pea down. When lifted from the tree with a knife, it appears like a hollow case filled with a downy substance. They have antennae, generally with ten joints and three legs on each side. Outside the antennae there are fourteen spires encircling the body, which, he at first believed, were used for breathing, as the insect has no mouth. Each foot, or rather termination of the leg, has three bristles, which adapt themselves to any surface and urge the insect along. The Doctor, having described the insect, explained how it injures the trees. He said, if we take the young branch of a tree, we shall find the surface coated over with a white fine down, an enlarged view of which shows a large basis and that it contains cells. This down he believed, serves as important a purpose as do the leaves, in furnishing nutrition to the tree. He believed there was much vitality in the bark of a tree, and that there was as much going on in the bark towards sustaining life in the tree, as in the leaves—that the bark was not merely a covering. No sooner does the little animal detach itself from the egg than it enters the buds, some between the leaves, others at the base of the bud, and some around the base of the leaves. As soon as the eggs are impregnated, the female attaches herself to a branch of the tree and never moves again until the eggs hatch, when the scale drops off and the young walk forth perfect insects. With scale insects covering the surface of a tree, the first effect is the destruction of the downy appendages that form a part in sustaining life in the tree. It is impossible for the bark to perform the functions of respiration and absorption, and the tree, which was before strong and healthy, becomes ruined."

At the conclusion of the Doctor's remarks, the subject under consideration was discussed by Prof. Carr, C. W. Dwinelle, Mr. Dewey, Mr. Pryal, Mr. Webster, John Kelsey, and others.

In reply to Mr. Dwinelle, the Doctor said a mild solution of caustic potash was a remedy. He further added that there is a strong tendency in this country to the formation of mosses at the foot of trees. This moss forms a favorable resort for the insects during the period of incubation. If the tree were once cleaned of the insects, and a coat of tar placed on the bark near the ground, they would not trouble the tree again. He believed the best thing a man could do for the country, when he

found a tree covered with them, would be to cut it down and burn it up.

Mr. Pryal then read a paper on potatoes, a subject he said he had studied for thirty years. Mr. Webster, of Fruit Vale, promised an essay for the next meeting, announcing as his subject "California—Its Past and Present."

A vote thanks was tendered to Dr. Gibbons for his very interesting lecture, and the compliment was subsequently extended to Mr. Pryal. Upon being requested to continue his lectures, Dr. G. promised a series that he would term "Morning walks among fruit trees."

We have solicited from Dr. Gibbons a more extended description of the insect, with a view to illustrate it with sketches. We intend to report future lectures and proceedings of the Club phonographically, so far as they may prove interesting.

Messrs. Hunt & Fryal volunteered to bring in some branches with scale insects upon them at the next meeting.

A resolution was presented by Secretary Dewey, embodying in the order of business that written questions be received by the Secretary from members during the meetings, said questions to be read when called for and answered in the club. Verbal questions are also included. This will afford a convenient opportunity for ladies and all others to take part in the proceedings of the meetings.

The suggestion was also offered by the Secretary for considering the subject of holding a harvest festival in August.

It was agreed that the subject of taxing growing crops should be brought up at some subsequent meeting.

Silk Worms.

Prof. Carr presented for inspection some specimens of silk worms, brought during his stay from Joseph Newman's cocoonery, San Jose. The worms were of different sizes, and from a few hours old upwards. Two varieties of cocoons for hatching were shown, and specimens of eggs. These were exhibited to the ladies and gentlemen present by Mrs. Carr, and added to the interest of the meeting.

Adjourned till next regular meeting, Friday evening, July 12th.

Canning Fruits.

The fruit grower should be able to can his own surplus fruits. There is no mystery about the process, for every intelligent housewife in California having the fruit, has before this, tried the experiment and succeeded. It is only those who have no "vim" in them, that neglect to provide themselves and their households with the cheap luxury of fresh fruits the year round; we mean of course such fruits as cannot be kept fresh in any other way.

Half the currants of last year's crop, we are told by one of the principal producers of this fruit, were sold to the canning establishments at not exceeding three and one-half cents a pound, which just about pays the cost of growing them; but if canned at this price would pay largely. There is a large demand for this fruit in a canned condition to go sea-ward; indeed all the more acid fruits are preferred for sea voyages.

While the grower can realize six or even five cents a pound from the bushes, it pays well to raise them; for less than this, the profit would be small.

NARROW ESCAPES IN NICARAGUA.—We have received a neatly-printed pamphlet, published by Spaulding & Barto, entitled "Adventures and Narrow Escapes in Nicaragua, in 1866 and 1867," by Joseph Worth. The little volume gives a pleasant account of the incidents and occurrences of a trip through Central America, and will be found of interest to persons who enjoy reading works of travel and adventure. A very good idea of the country and the customs of its inhabitants, may be acquired from a perusal of this work.

MELON SUGAR.—Send to Dewey & Co., 338 Montgomery street, San Francisco, for a copy of a pamphlet of 56 pages, on Indigenous Sugars, and directions for making sugar from melons. Send 50 cents in coin, or 60 cents in currency or postage stamps, and send before the edition is completely exhausted.

FRUIT DRYING.—W. C. Blackwood, whose Post office address is Haywood, Alameda Co., Cal., wishes to find the Agent of Alden's process of drying fruit by steam. It is simply strange that an agent desirous of selling rights for the use of a valuable invention, will not let the world know of the same, by a judicious system of advertising.

METEOROLOGICAL.—The mean range of the barometer for the month of June in this city was 29.99 inches; the mean temperature was 59°; the prevailing wind was from the southward; and the hottest day was the 21st, when the thermometer stood 79° in the shade.

AGRICULTURAL NOTES.

CALIFORNIA.

CONTRA COSTA COUNTY.

Ledger, June 22: Never before have the inhabitants of this section of the State been more industriously occupied than at present. The work of harvesting the grain goes bravely on, and the sound of the steam whistle and the music of the thresher is heard in every field. Employment at good wages is given to all who desire work. The hotels and restaurants are crowded. Over one hundred harvest hands laboring in the immediate vicinity of Antioch have taken their meals in the American Exchange Hotel during the last two weeks, and other boarding houses have a proportionate number. Numerous improvements are being made in town. The sound of the saw and the hammer can be heard in all directions, and substantial works of improvement can readily be seen. There have been no buildings erected thus far that have not been needed, and we hear of several parties desirous of coming to Antioch to live who cannot at present find suitable accommodations.

LOS ANGELES.

News, June 22: RIPE GRAPES.—Upon our table is a stem containing fifty-one ripe grapes and as many more green ones. The ripened fruit is dark purple and the flavor is excellent. The grape is the Euniston, imported from New York by Postmaster Clarke, and the vine from which the fruit was plucked is less than two years old.

The San Luis Obispo *Tribune* says there are many acres of white beardless wheat in that county which will yield 60 bushels per acre. The heads average four and a half inches in length, well filled.

We saw something the other day, at Los Alamitos Ranch, which we think would somewhat surprise the good people away down east. It was wild celery—a whole pond full of it—and grown to such a prodigious size that one stalk measured over eight inches in height, and two inches in diameter two feet above ground. It is good to eat at the proper season, but is now too old and woody. It has the same taste and smell as the tame article, and is a favorite food of wild ducks, which flock there in great numbers to eat it. Mr. D. Lyon, lessee of the ranch, proposes to bank up and blanch some of it another season, and see if it cannot be made as good for man as it is now for the birds.

NAPA.

Register, June 29: HARVEST NEWS.—We learn from farmers from different sections of the county, that harvest is fairly begun. A great many are cutting and some are already threshing. Very few idlers are left to lounge about the saloons, or stand on the street corners in town. The yield of wheat, it is generally thought, will be better than has been anticipated—damage from rust not being as extensive as was feared, and the weather, excepting a few excessively hot days, having been rather favorable to the late sown grain.

MAMMOTH FIGS.—We received this week, politeness of Dr. Pond, some mammoth figs from the ranch of Mr. Sol. Decker, in Vaca valley. They were about four inches in length, by five and a half in circumference. They were just ripe and nicely flavored. We learn that Mr. D. has fifty trees of the same variety.

AN EXTENSIVE FARMER.—As an index to the extent of agricultural productions of our valley, we need only state that we have one farmer in our midst, whose bill of expense for the one item of sacks alone, in which to sack his crop of the present year, is estimated to be upwards of \$30,000. This unpretending, plain citizen is John Mitchell, Esq., of our county, who has sown to grain this present year, on his own lands, 30,000 acres. The question naturally presents itself—is not Mr. Mitchell the greatest wheat producer in the world? If not, where is the man who excels him? If there can be any one individual farmer found who surpasses him, we believe that next year Mr. Mitchell would go him many acres better, as he has yet thousands of acres in our valley uncultivated that will be ready for the plow.

SACRAMENTO.

Twice a Week, June 29: ALFALFA.—Lux & Miller, who are among the largest cattle-raisers in the State for beef, own extensive grazing ranges of land on the San Joaquin and its tributaries. Of late they have seeded large tracts of land with alfalfa, which flourishes to such an extent as to make one acre of land supply as much food for cattle as was formerly yielded by twenty acres. More than this, the alfalfa ground supplies food for cattle all the year round,

whereas hitherto the land furnished grazing only five or six months in the year! From this it appears that seeding land with alfalfa is calculated to economize in two ways: It prevents the waste and expense of driving cattle to distant ranges for food; and also makes available large tracts of land for general cultivation. The general introduction of alfalfa into grazing regions will not only improve the quality, but increase the quantity of beef, and besides enable the grazers to dispense with the use of three-fourths of the lands now occupied by them. Doubtless the example set by Messrs. Lux & Miller will soon be followed by all stock men whose lands are so situated as to be subjected to the systems of irrigation now being introduced in the San Joaquin Valley region. STANISLAUS.

MODESTO *News*, June 28: Some months since we made an estimate of the probable grain yield of Stanislaus county. We then placed our figures at 6,000,000 bushels. Many of our city contemporaries, not being informed as to the area sown to grain in this county, and knowing still less of the productive quality of the soil, doubted our estimate, and claimed that it was visionary. An investigation of the extensive grain districts of the county soon proved to the doubters that it was not at all impossible for that amount of grain to be produced the present year within the borders of Stanislaus county. Our farmers are now in the midst of their harvest, and in every instance, thus far, the grain yield has exceeded our own estimates, and even went above the most sanguine calculations of the farmers themselves. On the west side of the San Joaquin river the grain matured more rapidly than in other localities, and, consequently, farmers are well advanced with their work. Competent judges inform us that there are but few fields in that section turning out less than 25 bushels to the acre, whilst many, especially those sowed to barley will reach fifty and sixty bushels. We do not believe that the estimate of 100,000 acres sown to grain in that section of our county is far from the mark, nor can an average of 25 bushels to the acre, for that section, now be considered exorbitant.

Weekly News, June 28: Last Saturday was the hottest day experienced in this section of the valley for the past two seasons. The mercury, in low wooden buildings, reached as high as 109 degrees, and in the sun 148 degrees.

But little grain has been hauled to the various switches and depots on the line of the railroad, owing to the fact that the teams are mostly all employed in harvesting. Preparations, however, for shipment are active at various points.

SAN DIEGO.

Union, June 27: ACORNS.—A gentleman from the mountains informs us that the oak trees on the Smith and other neighboring mountains, are loaded with large crops of acorns this year. In consequence, the farmers will have an opportunity to make good cheap bacon, as they can fatten their porkers on acorns, instead of corn or barley.

WOOL in small quantities is still finding its way into town. We notice several small lots in Culverwell & Jorres' warehouse ready for shipment to San Francisco.

SAN BERNARDINO PRODUCE.—A farmer, from San Bernardino, arrived in town yesterday with a load of ranch produce. The butter, which sold readily, was of excellent quality.

Bulletin: SPLENDID strawberries were brought to this city, yesterday, by Mr. Miencer, of Paradise Valley. They were as fine, luscious fruit as any market affords. They sold readily for about thirty cents a pound.

Good, dry, live oak firewood sells for \$7 a cord. In San Diego a "cord" is only two-thirds of a cord, if the wood is cut into stove lengths. If the measurement is guessed at it may be only half a cord.

SAN JOAQUIN.

Republican, June 26: FARM HELP.—Today numerous farmers are in town looking for harvest hands. We met at least a dozen men who are in need of from one to three hands each. Laborers who are anxious for situations should leave their names at the Farmers' Club rooms, Main street, with B. F. Kolberg.

GONE TO WORK.—For the first time in several weeks the street corners are comparatively clear of clumps of men hunting work, and praying they will never find it. All who want work can find it, and we are glad to see men accepting the fair wages offered and going out into the grain fields.

GOOD SEASON.—Boatmen tell us that this year the San Joaquin river will continue in good boating condition until late in the season. This will enable the farm-

ers living near the river to market their grain without being forced to submit to the extortion of the railroad company.

SAN LUIS OBISPO.

Tribune, June 29: WHEAT CROPS.—If all reports be true that we hear, and the specimens of grain presented to us are a correct index of the fields from which they were taken, we may reasonably expect a heavier yield of cereals in this county this year than at any previous one. Mr. Irvin Johnson has shown us some specimens of wheat, consisting of three varieties, club-head, Siberian, and Red-chaff Sonora, the heads of which are all large and well filled, some of them being seven inches in length. He has 150 acres of the above named varieties in on Mr. John Harford's place, at the lower end of the Lagoon Rancho, which he assures us will average sixty bushels to the acre. Messrs. Hanson & Parker, of the Moro, have also shown us samples of white Australian wheat, grown directly on the Coast, the stocks of which are seven feet in height and surmounted by large, well-filled heads. This goes to prove the falsity of the old foggy idea that wheat cannot be successfully grown in the Coast counties. As far as we can learn, there is very little rust in the grain fields of this section this year.

From all parts of the county we hear of continual depredations of wild beasts. Mr. McLeod, of the Arroyo Grande, informs us that California lions have made great havoc among his colts, one having been carried entirely off, and two others badly crippled within the last month. Last week one of these animals attempted to walk off with a fine brood mare which had her ears bitten off, and was horribly lacerated about the head and neck, but succeeded in escaping from the clutches of the ferocious animal.

TULARE.

CROPS IN TULARE.—*Times*, June 29: Crops in this county are now being harvested and are turning out better than in any year since 1868. While the area sown was probably one-third greater than ever before, the yield per acre, on an average, is gratifying in nearly every instance; except in some isolated cases where grain was sown too late to receive the benefit of the heavy winter rains. It is hard to refer to especially a locality where crops are exceptionally good. They are so in every direction. On Tule River, King's River, Mussel Slough, in the foothills, everywhere, the labors of the husbandman have been rewarded bountifully. The late frosts which it was feared would seriously injure crops, did not do nearly so much damage as was anticipated. The people of this valley have certainly abundant cause to be satisfied with the harvest of the season. The general productiveness of our soils has been fully established, and every barn filled with plenty.

NEVADA.

Truckee Republican, June 25: THE EXCURSIONISTS.—About 120 excursionists arrived on the special train last night, a large proportion of whom were ladies. Fifty of the party left for Tahoe City immediately upon the arrival of the train. The remainder were accommodated at the Truckee Hotel, Keiser House, and at Private houses. A large party went out this forenoon to visit Donner Lake. Nearly all the members of the party will go up to Tahoe to-day and will return to-morrow evening and leave for Stockton on Thursday.

STAGE CONNECTION.—J. M. Benton, stage proprietor at Carson, was in town to-day endeavoring to effect arrangements for daily communication between Carson and Truckee via Glenbrook and Tahoe City. Mr. Benton finds it difficult to secure steamer connection daily between the two last mentioned places. It would be an accommodation to the travelling public if such communication could be had with Carson, and especially by this route. A large steamer on the lake, adapted for both passengers and freight, is much needed.

MORE FREIGHT.—Twenty-five thousand pounds of freight arrived here to-day from San Francisco, for the Lake Tahoe region. The freight goes across the lake to Spooner's Station. This new route is becoming popular, and is much cheaper and better than the roundabout way of Reno, Steamboat Springs and Genoa.

OREGON.

Willamette Farmer, June 22: TIME FIXED. The time for holding the next State Fair has finally been fixed at Monday, Sept. 30, to continue six days. This delay has been occasioned by the fact that the Washington County Agricultural Society had, previous to the assembling of the Board in January, fixed the time of holding the Fair in that county about the above date, and it was desired that no conflict

should exist in holding the State and County Fairs. The Washington County Fair will be held on the 14th of October instead of the 7th, as heretofore announced.

LONG WOOL SHEEP.—H. L. Rudd, of Peoria, Lynn County, writes us as follows, under date of June 15th, 1872: "I see by the last *Farmer* that you want to hear from some man owning long-wool sheep. My sheep are pure-blood Cotswold, imported by myself from Canada. They were two years old last April. One of my bucks sheared seventeen pounds, and one nineteen pounds; the ewe, eleven pounds. The ewe has raised two fine large lambs, and they have had nothing but ordinary keeping. The wool is clean and free from dirt. The gross weight of the bucks is, one, 319 pounds, the other, 302½ pounds. If any one has larger sheep, I should like to hear from him."

OREGONIAN: RAIN NEEDED.—A gentleman who has just returned from a visit through the agricultural districts of the valley, informs us that in every section of the country, the crops are suffering severely for the want of rain. Considering this drawback, from every portion of the cultivated districts we hear of good crops with but few exceptions, and these only in low lands where standing water has prevented an early sown crop, and the dry weather effects more seriously. A few timely showers would be of great benefit to the maturing crops and very materially increase the yield.

They have a Farmers' Club in the Waldo Hills, Marion county, called the Highland Farmers' Club. Fones Wilbur is President, B. A. Leonard and W. Cranston, Vice Presidents, K. Hibbard, Treasurer, and T. W. Davenport, Secretary. The regular meetings are the first and third Saturdays of each month.

OBSERVATION OF CROPS.—A gentleman from a tour through the western counties of the State, writes: "We everywhere observed what we regarded as tokens of thrift and industry. The breadth of grain sown seemed to be much greater than we had observed in any former year; and the early or fall-sown grain was well grown and characterized by a very healthy green. So also were many of the crops sown in February or March. And yet as to later sowing, the farmers feared that without much more rain they would be short."

SALMON.—It is said there is a greater run of salmon this year than ever before known. The traps are so overrun that great numbers are thrown away, the canning and salting works not having capacity to keep up with the catch.

THOROUGHbred SHORT-HORN CATTLE.—for many years, Dr. E. S. Holden of this city, has given a large share of his attention to the improvement of live-stock, and was one of the first gentlemen in San Joaquin Valley who invested largely in imported thoroughbred cattle. The famous Durham bull, Blanco (white) is an animal known by every stock-raiser for prominence in the State. "Blanco" was purchased when two months old, by Dr. Holden, from John D. Patterson, on the 19th of June, 1864. He was sired by the 4th Duke of Airedrie; dam, Rosette, by Harold 4th; g. dam, Rosa, by imported Harold 2d; gr. dam, White Rosa, by Don John, Jr., gr. gr. g. dam, a thoroughbred cow imported by Hon. Henry Clay, of Ashland, Kentucky. Blanco was calved April 26th, 1864, and when two months old was purchased by Dr. Holden for three hundred dollars. This beautiful and valuable animal is in fine condition, weighs two thousand pounds, is gentle as a lamb, and is very handsome. We enumerate some of the fine stock now in Dr. Holden's possession, and which has all been raised by himself, except the cow "Nelly" which is sixteen years old, red and white, and was purchased from J. D. Patterson for \$800. From this cow seven fine calves have been raised. She weighs about 900 pounds, and is a very fine milker—giving twenty-five quarts per day. The cow Fanny weighs nine hundred pounds, is four years old, red and white, sired by Blanco; dam, Nelly. Cow Mio, five years old, sired by Blanco; dam Rosa. (Rosa was killed by a locomotive on the railroad track.) Mio weighs eighteen hundred pounds. Blanch, two years old, white, sired by Blanco; dam, Rosa, with calf by Oak Home. Fawn, white, sired by Blanco; dam, Fanny, two years old, with calf by Oak Home. Snowdrop, white, sired by Blanco, dam, Nelly, thirteen months old—a splendid animal. Rosa 2d, red and white; dam, Nelly, sired by Blanco, seventeen months old. Bull Nevada, red and white, sired by Alpine; dam, Fanny; eight months old. Bull Oakdale, sired by Blanco; dam, Nelly. Cow Daisy, two years old; dam, Rosa; sired by Blanco. One little calf, dropped June 16th, sired by Blanco; dam, Eliza. Stockraisers visiting this city would undoubtedly find much to interest them by visiting Dr. Holden's stock-yard.—*Stockton Ex.*

THE FLOOD caused by the overflow of the Colorado and Gila rivers, has subsided.

Stock Raising.

Best Breeds of Cattle for Dairy Purposes.

A writer on Dairy stock, in the *Mark Lane Express*, thus alludes to the breeds most in esteem in Great Britain:

"Of breeds in general use, and of acknowledged merit for dairy purposes, are the Dutch, Short Horns, Crosses, and the Ayrshire. Dutch cattle are of large size; prevailing color black, with sometimes a white patch over the back, resembling a sheet, and are, from this, distinguished by the name of sheeted cows. They are heavy milkers, but the milk is of rather poor quality, and not very productive of butter. For this reason they are more suitable for parties who have large contracts, and supply work-houses, prisons, hospitals, and other public institutions with milk, than for the ordinary farmer who has to manufacture his product into butter and cheese. Another very serious objection to Dutch cattle is the difficulty of fattening them when past their prime, and the large quantity of food they consume in the endeavor to prepare them for the butcher. On account of these two faults in the character of this, at one time rather popular breed, they have of late years been going down in public estimation.

Of all other descriptions of cattle, Short Horn crosses are now the most popular, where dairy business and rearing and feeding are carried on simultaneously. They are, for the most part, admirable milkers; their calves, both heifers and bullocks, can be fed off at an early age, and, coming to heavy weights, bring large and remunerative prices; while the cows themselves, when no longer useful for the dairy, are easily fattened, and can be quickly got rid of. In the three kingdoms, but more particularly England and Ireland, this variety of cattle is to be found in every county, and on every kind of land, varying in size, of course, according to the quality of the land. The same distinctive features are, however, always retained, and they attain immense size, and give extraordinary quantities of milk, where the soil is rich and the climate congenial to their habits and constitution.

The Ayrshire next claims attention; and it may be concluded with safety that when dairy produce is the sole object, and the land is light and of indifferent quality, this breed is the most valuable of any. Mere size in this case is not much of an object, as the small Ayrshire is considered a better dairy cow than the larger or medium sized variety. To keep them small in size, and partly to adapt them to the inferior pastures of Ayrshire and neighboring counties, they are very moderately kept in the earlier stages of their growth, particularly in the second year. This is supposed to add to their milking properties, and as they are generally made to produce at the age of two years, an Ayrshire cow on her native pastures is usually very small indeed. When removed to other countries, and placed upon richer pasture, they grow larger; but by doing so, the milking powers are unquestionably injured. So marked is this principle, that the Ayrshire cow is seldom found in the same perfection, as a milker as she is to be seen on her native soil, which may be said to comprise the county from which she derives her name, and the adjacent counties of Lanark, Renfrew and Dumbarton. There she takes her position as the dairy cow *par excellence*, and is highly and deservedly prized."

Jersey Cows.

Mr. John Giles, of South Woodstock, Vt., having had very many letters of inquiry respecting this breed, their milking qualities, calves, etc., thus answers through the *Rural New Yorker*:

First. Their calves are red and white, yellow and white, gray and white, and cream-colored. The cattle should be yellow round the eyes, and within the ears, bordering on the orange color; the best animals have a yellow tinge at the root of the tail; there is a similar color in the butter made from their milk.

Second. The size and form of the Alderney differs little from the Jerseys; they should have a fine, slender nose, a fine skin and deer-like form. The Guernsey cattle are larger boned, taller and coarser in all respects, and have a less fine coat. From the Islands of Alderney there are not over fifty cows exported a year, as the island will not sustain over 400 cows. From the Island of Jersey there are more exported, as the island is some six wide and twelve miles long. A great many cows that are sold as Alderneys or Jerseys, are not Channel Island cows at all, but small Breton and Normau cows, whose value is little more than one-half of the pure Jersey.

Third. *Price of cows on the Island.*—A good cow will readily bring from \$125 to \$150. Some more than that. Young stock, of course, can be bought lower.

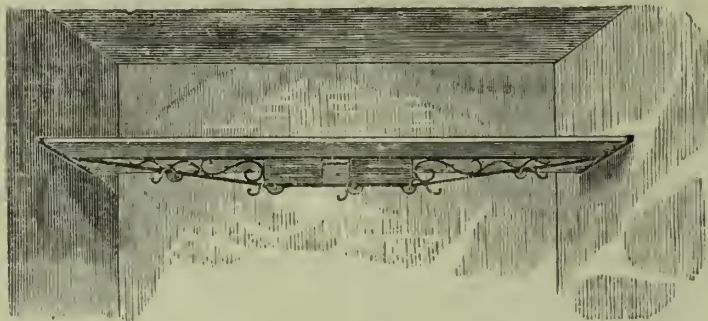
Fourth.—Our own experience as to milk and butter.—They are not deep milkers, seldom giving over 25 to 32 pounds of milk per day. We had one which we sold to the Rev. Henry Ward Beecher, that gave 42½ pounds of milk per day. As that gentleman justly observed, "the Jerseys did not give much milk, but what they did give was all cream." The most butter per week we ever had a Jersey cow give, was 16 pounds. We consider 14 pounds per week an average. Some talk of 18 to 20 pounds per week. We have never had the good fortune to own or see such cows. Some say that from

four to six quarts of milk will make one pound of butter. Such has not been our experience. We say from five to seven quarts will make one pound of butter, and such butter that will make an epicure's lips smack.

Sixth. I was born on a farm; always had a taste for stock. Nearly sixty years ago I used to see the Jerseys before the mansions of the aristocracy in England (for, be it known, I am a John Bull by birth, but have been nearly forty years in Yankee land,) with strap around the neck, and long chain attached to a movable shed on the lawns, kept for their rich cream and butter. I then admired their deer like form, little thinking at that time that I should ever be one that would import such valuable animals into this, my adopted and beloved country.

Hanging Bracket and Adjustable Shelf.

The object of this simple and useful invention, is to supply a want which has long been felt in every well regulated household, namely;



—an adjustable shelf which can be readily raised, lowered or removed without either the assistance of a carpenter or carpenter's tools, (which are so seldom to be found in every house when required,) also a drop or hanging bracket to be attached to the adjustable shelf, or to be used independently under a horizontal surface, such as a low ceiling, an ordinary shelf, etc.

Before describing the above inventions, we will give a brief description of their capabilities

and other household purposes too numerous to mention. Its simplicity is shown in the following description and accompanying cuts.

Figures 1 and 2 represent the improved extension shelf. The form shown in Fig. 1 is composed of two light iron arms or trusses suitably ornamented and having at their ends sockets extending along the ends and at right angles to the arms, sustaining and clutching the board which forms the shelf. The outer side of the sockets are grooved to contain rubber or any other elastic material, so that the rubber will rest against the wall. A sliding device operated by a screw at the center, where the arms are placed between the projections of the wall forces the rubber at each end against the wall, firmly gripping it, supports the shelf. Numerous hooks can be cast on these arms for supporting various articles. Fig. 2 shows a modification of the above device, in which the sockets are cast to fit the board for forming the shelf, the rubber being placed in the outer groove as before. One of the sockets is provided with a clamp and set-screw, the clamp working against

Fig. I.

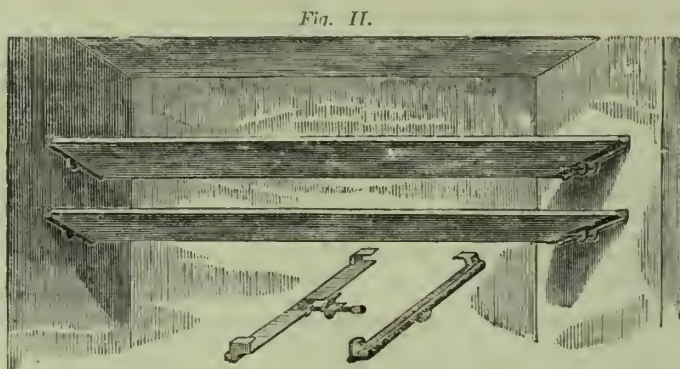


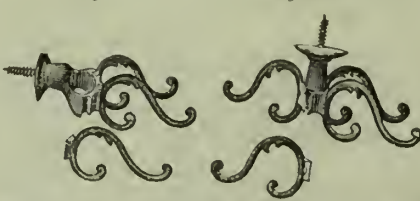
Fig. II.

ties and merits. The adjustable shelf will prove invaluable on book-cases where they can be easily lowered or raised according to the sizes of books; in pantries and drawers as a security against the collection of vermin, as they can be removed and washed; to papered or hard-finished houses they are particularly adapted, not defacing or injuring the wall in the slightest degree, dispensing entirely with the use of nails,

are inserted so as to project at any angle required. The hub may swivel on the screw and the arms project all around, and by this means any article may be turned conveniently to the person requiring it. Figure 4 is a modification of the above, suitable to a vertical plane standing at right angles to the wall, etc., and can be used with any number of hooks. This is designed to take the place of the ordinary clothes-hook, over which it has numerous advantages. Further

Fig. IV.

Fig. III.



and affording the paper hanger or whitener facilities for working, which no other arrangement of shelf can possibly present. In changing dwellings it can be removed without difficulty. Some of its forms can be adapted either to recesses or projections, for hanging signs, cornices, etc., and when erected with any of the many forms which the drop will take, will make a complete wardrobe.

In stores, show cases, country houses, ships' cabins, office closets, and wherever space is limited, it would almost be impossible to overrate the value of this combination. The hook alone, is as protean in its adaptabilities as the adjustable shelf. It can be used equally as well on vertical or horizontal planes, without injuring its surface, with one or many drops, either revolving or stationary, and will serve as a substitute for hat racks, clothes-horses, meat hooks, or revolving dryers in laundries, and a thousand

information concerning this patent can be had of S. N. Bliven & Co., (under the What Cheer House, Sacramento street) who are the agents for the sale of it.

SYRIAN WHEAT.—The *Sonora Independent* says: A new variety of wheat bearing this name has made its appearance in our market. Only a small lot has been offered for seed, which brought 25 cts. per pound. The wheat was raised by R. M. Chene-worth, and weighs 64 pounds to the bushel, and is said to be so prolific as to yield 84 bushels to the acre. This wheat greatly resembles the "Hungarian wheat," so popular in some parts of California, about ten years ago.

SHEEP.—A drove of about three thousand and head of sheep belonging to Digory Hobbs, of the Cosumnes, passed through town a few days since, on their way to pastures green in the mountains.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.]

FOR THE WEEK ENDING JUNE 11TH.

GRAIN CLEANER.—John H. De Force, Healdsburg, Cal.; antedated June 7, 1872.

GRIPING-PULLEY.—Andrew S. Hallidie, S. F. BEDSTEAD-FASTENING.—Scneca Jones, S. F., Cal.; antedated May 23, 1872.

ROCK-DRILLING MACHINE.—Asahel J. Severance, S. F., Cal.

WIND-WHEEL.—William I. Thustin, S. F., Cal. ATTACHMENT FOR WHIFFLETREES.—James T. Williams, S. F., Cal.

OYSTER-NURSERY.—Benjamin F. Lyford, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention:

IMPROVED BALING PRESS.—F. A. Huntington and J. F. Carter, San Francisco, Cal. This press is intended for baling hay, straw, wool, cotton, or other balable substances. It consists mainly in the combination of a single horizontal baling-chamber with a follower, which is operated by a toggle or knee lever without the intervention of any gearing or other machinery. It also consists in a novel construction of the sides of the chamber and the end door and its fastening, for strength and facility of discharge. The chamber for holding the material to be baled has an end door having a flange or rim so as to inclose and hold securely the sides of the chamber, which are slightly beveled; when closed this flange incloses the side and top walls of the baling chamber. The walls of the chamber may be either elastic or hinged a short distance back from the end so as to separate easily to allow the bale to be removed. The door is secured by a hasp on one side and a sort of cam-lever on the other. The latch hooks on a small projecting catch on the lever, when it is standing out from the body of the press; and by drawing the lever down against the side it draws the latch tight and secures the door. The follower is made so as to move easily in the chamber, and has guiding bars at the sides. A lever is hinged to the center of the back end and extends out to a point where it is pinned to the end of another lever.

MACHINES FOR CONCENTRATING AND AMALGAMATING ORES.—W. T. Rickard, Monitor, Alpine Co. Cal. The invention consists of a horizontal tank, cylindrical in form, through which a central shaft passes. V or X shaped plates are secured upon this shaft so as to swash the contents of the tank back and forth as the shaft is revolved. The plates may be amalgamated if desired. The machine can also be used as a churn if desired, the same motion being suitable for converting the cream into butter.

HOW TO KILL SQUIRRELS.—The *Santa Barbara Press* relates that "some time since, Mr. Dixie W. Thompson took us out in his buggy to an outside lot on which the squirrels had 'squatted' and taken up their claim, and were in high glee over their possessions. He had with him a large 'man bellows,' to which he had attached about a yard of gutta-percha hose. On reaching a squirrel burrow, where a colony had evidently settled, he set his machine down, thrust the end of the hose into one of the numerous squirrel-holes, threw some shavings, cobs, and sulphur into the tea-kettle, struck a match, set the shavings on fire, caught hold of the bellows, and in a moment the sight and smell suggested another fire and brimstone region, for the earth all around began to send up puffs of yellow and infernal-looking smoke wherever a squirrel had ever run his underground road. The precaution had been taken to cover all the holes with earth before the smoke was forced into the burrow. In one instance the smoke rushed out of a hole over thirty feet distant from the main entrance of the nest. It takes about five minutes to smother a whole colony of these troublesome pests, and they never show any signs of life again, the holes remaining closed and undisturbed. The work of extermination is complete, and is accomplished at a trifling cost. A multitude of squirrels can be thus destroyed by one man in a single day."

USEFUL INFORMATION.

Composition of Patent Medicines.

A German has written a very interesting and useful book, on Secret or Patent Medicines, from which has been selected the result of analysis of a number of the nostrums popular on this side of the Atlantic; and as many of our readers deal in such articles, and should be familiar with the composition of what they sell, we reproduce the formula for their benefit:

Coca Pills, by Sampson, New York. According to Hagar and Jacobsen, composed of powdered coca and extract of coca in about equal quantities; value, about one-fourth of price.

Eau de Cythere, a hair color restorer, consists of 4 chloride of lead, 8 hyposulphite of soda, 88 water. A similar composition was Eau de fees, which, a couple of years ago, was introduced here. The writer found in a sample also some alkalies, earths, and traces of nitric acid, originating probably in the spring or pump water used. Hagar and Jacobsen give the following formula: Hyposulphite of lead, 1½; hyposulphite of soda, 3; glycerine, 7; water, 88 parts.

Granular Effervescent Citrate of Magnesia, by Bishop, of London, consists merely of bicarbonate of soda and tartaric acid.

Pommade des Chatelaines, a hair invigorator, consists of benzoated lard and some volatile oils.

Hamburg Tea, by Frese & Co., of Hamburg: Senna, 6; manna, 3; corianda, 1.

Magnesian Aperient, by Moxon, of England, is, according to Sillier, anhydrous sulphate of magnesia, 31; carbonate of magnesia, 14; bicarbonate of soda, 30; tartaric acid, 25 parts.

Swedish Essence of Life, is made also in this country, under various names. As usually made by apothecaries, it is a tincture made from 4 aloes, 1 agaric, 1 rhubarb, 1 zedoary, 1 gentian, 1 myrrh, 1 theriac, with 100 to 120 dilute alcohol. The secret medicine manufacturers usually substitute cheaper articles for the high-priced saffron and rhubarb.

Syrup of Horseradish, by Grimault. Hagar gives the following directions: 50 p. each of fresh scurvygrass, buckbean, and watercress; 60 of horseradish, 40 of fresh orange berries, are infused with 3 cinnamon in 50 p. white wine, and after a day expressed; 250 p. sugar are dissolved in the filtrate.

Iodinated Syrup of Horseradish, by Grimault, contains 10 iodine, and 5 potassium iodide in 8,000 of the former.

Myrrhine, by J. B. George, of Paris, for the preservation of the teeth: Glycerine, 38, myrrh, 7, arrowroot, 5, chalk 54, oil of cinnamon 1 part.

New York Pills, by Sampson, of New York. The 1½ grain pills consist of powdered coca 25, extract of coca 30, and powdered iron 35 parts.

Opiate pour les Dents, by Pinard. Syrup 70, chalk 21, gypsum 7½, magnesia 1½, colored with aniline red, containing arsenic, and flavored with oil of cloves, and of spearmint.

Brandreth's Pills, contain resin of podophyllum, inspissated juice of poke berries, saffron, cloves, oil of peppermint.

Holloway's Pills are composed of aloe, myrrh, and saffron.

Morrison's Pills, 2½ grains each, consist of aloe, cream of tartar and colocynth; another kind contains the same ingredients, besides gamboge.

Radway's Ready Relief, according to Peckolt, is an ethereal tincture of capsicum, with alcohol and camphor.

Radway's Renovating Resolvent, a vinous tincture of ginger and cardamon sweetened with sugar. (Hagar and Jacobsen.)

Poudre Hémorrhagique Végétal, by Bonnatour, consists of 4 resin, 1 gum arabic, 1 wood charcoal.

Poudre Unique, by Godernaux, of Paris, lauded as a specific against epilepsy, is impure calomel, leaving when heated a slight reddish residue.

Oil of Horse Chestnuts, by E. Genevoix, of Paris, is not the oil of the horse chestnuts, but another non-drying oil, altered by heat so that it has acquired a darker color, a pungent odor and acid taste.

SCREWS INSERTED IN PLASTER WALLS.—When we try to fasten brackets, strips of wood, etc., to plaster walls by means of screws, it is often found impossible to make the screws hold firmly. When we turn them in, the plaster breaks out and our labor is in vain. And yet, a screw well set into a plaster wall, will hold very firmly. When a screw has broken out and it is necessary to make it hold in that particular spot, the best plan is to enlarge the hole to about twice the diameter of the screw, fill it with plaster of Paris, such as is used for fastening the tops on lamps, etc., and bed the screw in the soft plaster. When the plaster has set, the screw will be held very strongly.

VARNISH TO IMITATE GROUND GLASS.—To make a varnish to imitate ground glass, dissolve 90 grain of sandaric and 20 grains of mastic in two ounces of washed methylated ether, and add in small quantities, a sufficiency of benzine to make it dry with a suitable grain—too little making the varnish too transparent, and excess making it crapy. The quantity of benzine required depends upon its quality—from half an ounce to an ounce and a half, or even more; but the best results are got with a medium quality. It is important to use washed ether, free from spirit.

Old Rubber.

A fortune awaits the happy inventor who shall teach manufacturers to restore old rubber to the condition in which it was before vulcanization, for with that secret, there would be practically no consumption of this invaluable article.

The thing has been done, and successfully, and we have ourselves seen pieces of vulcanized rubber, possessing great strength and elasticity, which were made entirely from old car-springs; but it has never been accomplished on a large scale, and awaits the enterprise and ingenuity of some new Goodyear to develop it.

Meantime, old rubber has its uses. By a system of steaming and passing between rollers, it is reduced to a semi-plastic state, and in this condition is used in combination with a coarse fabric for heel stiffening, a purpose to which it is admirably adapted, its waterproof qualities being of especial value. There is in a neighboring city a factory devoted entirely to this branch of manufacture, where several hundred tons of old rubber of all kinds are consumed annually.

Old rubber is also largely used to mix with new raw material in the manufacture of all kinds of rubber goods. It serves to give bulk and weight, and, if it does not increase, it certainly does not lessen the strength of the fabric. It may also be mentioned that powdered soapstone, white-lead, terra alba, and other heavy substances enter largely into the composition of almost all rubber goods, the use of which becomes apparent when it is remembered that they are generally sold by weight.

Cocoa-nut Oil.

Residents of temperate zones have no realization of the immense importance of the cocoa-nut in countries where the tree abounds. It yields a delicious food, a nutritious drink, a rich oil, and fibers which are manufactured into thread, twine, ropes, and all kinds of strong useful cordage.

Boiling the pulp breaks open the cells. As the oil is liberated, it rises to be skimmed off. A few years ago the Dutch government ordered a census of the cocoa-nut trees in Java and Madeira, which footed up twenty millions, being an average of three to every native inhabitant.

Vast quantities of the oil are burned in lamps throughout the whole Indian Archipelago. A tumbler half filled with water has oil poured in to the brim. Two lighted sticks are the wicks, which burn brilliantly. Every native glories in a display of lamps in the house and about the grounds at the approach of night.

When first taken out of the boiling pot, the oil has a rich flavor, but soon becomes rancid. So copious is the supply, however, it can always be had fresh and sweet for the table. Like olive oil in Syria, it is butter, lard, or oil, according to circumstances, in cookery. Soap is made with it, lamps supplied, leather dressed, and cosmetics are fabricated for beautifying the homely faces of women.

Something About Anvils.

In a deserted shop in Pittsfield, Mass., there rests on its block an anvil that has done duty for more than three hundred years. It is as sound to-day as it was in 1633, when Eltwood Pomeroy, after welding for the Stuarts the ponderous horseshoes of the same style and pattern that his ancestors had made during generations for the Tudors and Plantagenets, grew weary of taxes without law, and work without wages, and anvil in hand sailed for the new world. A deft workman, he thrived in the settlements, and left his anvil as an heirloom to his descendants. They show you in the tower of London the anvil on which the sword was forged that Richard Cœur de Lion used in his contest with Saladin, and at the collection of Pompeian excavations in Naples there is an anvil certainly older than the Christian centuries, which, of precisely the same shape we use, had evidently done service for stalwart workmen of many generations before the city was buried. But, better still, in the Egyptian room of the British Museum, there is a veritable anvil of the Pharaohs. It is older than Rome, older than Greece, older than Jerusalem; as old as the days of Abraham, and probably in existence when the patriarch "was come into Egypt, and the Egyptians beheld Sarah that she was very fair." It is just like a modern anvil, made apparently in the same way, weighing about seventy-five pounds, and sound as it was when struck by the hammer thirty centuries ago.

ETHER GLUE.—An excellent liquid glue is made by dissolving glue in nitric ether. The ether will only dissolve a certain amount of glue, consequently, the solution cannot be made too thick. The glue thus made is about the consistency of molasses, and is doubly tenacious as that made with hot water. If a few bits of india rubber, cut into scraps the size of buck shot, be added, and the solution be allowed to stand a few days, being stirred frequently, it will be all the better, and will resist the dampness twice as well as glue made with water.

THE hair on a camel weighs about ten pounds and sells for more than \$100.

GOOD HEALTH.

Weak Backs and Bad Seats.

The small of the back is the weak or strong point of every person. It is the center of voluntary motion. Nearly three hundred muscles are directly or indirectly connected with the motions of which the small of the back is the pivotal center. Hence, while those who are strong, and whose muscular systems are well balanced, know nothing of spiral weakness or vertebral distortion, invalids are forever complaining of this part of the body.

One very prominent cause of weak backs and crooked spines is the unhygienic, unanatomical seats and benches of our school-houses, churches and halls; nor are the seats and benches provided on steamboats, railroad cars, or at stations or ferry houses any better. It is impossible for any person to occupy these seats long without being forced out of shape. And when school children are confined to them for several hours a day for month and years, their backs will inevitably be more or less weakened, with corresponding deformity of body, for life.

If we go into private families, even into the palaces of the opulent, we find the seats made more for show than for use. Girls suffer much more by using such seats than boys, for the reason that boys are taught to run, jump and exercise themselves all over and all through, while girls are expected to keep still and be pretty.

It is certainly one of the strange problems of the nineteenth century that no parent, teacher or mechanic will give any attention to anatomy or physiology in the construction of seats for the human body. Must our chairs, and sofas, and settees, and divans, and *tele-a-letes*, and pews forever be dictated by fashion, and never conformed to nature? Must our tortured bodies forever be compelled to shape themselves to the seats, instead of the seats being adapted to our bodies? Go through all the great chair factories of the country, and you will not find a single article that is not put together in gross violation of the rules of health or comfort. If some Cooper, or Peabody, or Stewart, or Vauderbilt, or Astor, would invest a little million of dollars in establishing an immense chair factory "on strictly hygienic principles," he would do more to improve human health, promote longevity and remedy the backache, than any medical college in the land.—From "Backache," in *Science of Health*.

PHYSICAL DEVELOPMENT IN OLD TIMES COMPARED WITH OUR OWN DAY.—Mr. T. W. Higginson has taken pains to compare the vital statistics of several generations of two old New England families, he finds, to the dismay of those who mourn the physical degeneracy of women since the days of our great-grandmothers, that the stock has improved if anything. He adds:

"No man of middle age can look at a class of students from our older colleges without seeing them to be physically superior to the same number of college boys taken twenty-five years ago. The organization of the girls being far more delicate and complicated, the same reform reaches them less promptly, but it reaches them at last. The little girls of the present day eat better food, wear more healthful clothing, and breathe more fresh air than their mothers did. The introduction of india-rubber boots and water-proof cloaks alone has given a fresh lease of life to multitudes of women who otherwise would have been kept housed whenever it so much as sprinkled. It is desirable, certainly, to venerate our grandmothers, but I am inclined to think on the whole that their great-granddaughters will be the best."

Clay Dressings for Variola.

Dr. E. S. Bunker, in a note to the *Medical Record* says:—"During the recent epidemic I used clay-dressing for two pretty decided cases of confluent smallpox. Both patients were young women. One, a married lady, aged 23 (delivered on the second day of a six months' foetus,) made a fair recovery, took cold after getting up, and in a few days died suddenly of empyema and pericarditis; diagnosis confirmed by autopsy. The other, single, aged 21, had the disease with great violence, recovered rapidly, and is now well. In each case I dusted finely sifted pipe-clay over the face as soon as the pustules became fairly developed. This formed immediately a clean, dry, wholesome scab, abolished the intolerable itching and burning, served apparently as a good absorbant of infectious material, and sealed off during convalescence, leaving underneath a soft, natural integument. There was no disfigurement in either case."—*New York Medical Journal*.

STATE BOARDS OF HEALTH RECOMMENDED.—Governor Geary, of Pennsylvania, recommends to the Legislature the formation of a State Board of Health, on a plan similar to that of Massachusetts and of California, which were the first States to organize such Boards. The Governor was a member of the first Board of Health constituted on the Pacific coast. This was during the prevalence of cholera in San Francisco in 1850. We opine that before many years shall have passed by, nearly every State in the Union will have its State Board of Health.

Fevers and Sewers.

Notwithstanding the generally acknowledged deleterious influence of defective sewers, it seems to be a well-established fact that men employed to cleanse and repair sewers, etc., are not only not carried off by fever but appear to be singularly exempt from the ravages of that disease. The *British Medical Journal*, of a late date, says that in consequence of what has been said with regard to the alleged cause of the late illness of the Prince of Wales, Dr. Bowers, of the Metropolitan Board of Works of London, ordered a return on the subject, which presents a most unexpected array of facts which seem, at least, to controvert the generally received views with regard to the connection of fevers with imperfect sewerage. We copy as follows:

Out of five inspectors employed from 23 to 48 years, there has never been a case of fever. Out of 64 men employed in cleansing and flushing the northern sewers for periods varying up to 34 years, only two have had fever, and their cases were typhus. Out of 47 men engaged in the sewer work in the southern sewers for periods varying from one to 24 years, there have only been two cases of fever, and these again typhus; and in one of these cases it is shown that the disease was contracted from the man's family. There are 36 penstock and flap keepers who have been employed from one to 50 years. Of all these only one had any fever. He has been 16 years at work and had typhoid in 1862. There are some curious notes about these men. One of them has been at this work 50 years, and has not had one day's illness of that time. One lived 25 years in the sluice-house over the King's Scholars Pond sewer, but never had any fever. Another lived for 14 years in Penstock House, over the outfall sewer at Old Ford. Another lived 32 years in Great St. Paul's sluice-house. Another lived for 35 years in a house over Duffield sluice, and enjoyed good health. Out of 54 men employed at the pumping-stations, there has only been one case of typhoid fever. At Crossness, out of 54 men engaged during the last six years, there has not been one case of typhus or typhoid.

There have been eight cases of ague, but these are, of course, due to the low marshy district and they seem to have recovered rapidly. Out of seven men employed in cleansing ventilators, oiling side entrances, gauges, etc., no case of fever has occurred though one man has been at the work 23 years. Of ten surveyors and chainmen in the engineer's office, not one has ever had typhoid fever, although they have been almost daily engaged in the sewers for periods of from four to 24 years. These facts are very gratifying, and quite dispose of the allegation that the men in the sewers are decimated by fever. The statistics show, in fact, that fever is less prevalent among these men than the rest of the town population.

The Prevention of Small-Pox.

Dr. A. Armstrong, in the *Lancet*, advises the following means in staying the ravages of small pox: Persons suffering from the disease should daily anoint their bodies and limbs throughout with carbolized oil; and also wash their bodies thoroughly with soft water, slightly carbolized; the anointing to be performed after the whole person has been washed; and gently dried with some soft fabric. This process should be commenced before patients are allowed to leave their sick room, and continued until such time as all the diseased skin has been removed, and a new and healthy one formed. In this way the particles of diseased and desquamated skin are prevented from being set free from persons who have recently suffered, and contaminating healthy persons by being inhaled or deposited on the exposed skin, or by getting into the water or food, and thus be a mode of contagion.

CHAPPED HANDS.—Persons troubled with chapped hands will find the following receipts very good: Take a quarter of a pound of unsalted hog's lard, and work it well through clear cold water, then drain and work again in a wine-glassful of rose water; the yolks of two fresh eggs, and a table-spoonful of honey. When well worked together in an earthen dish, mix in gradually as much finely powdered oat-meal as will make a paste the consistency of new butter. For use, spread the mixture on the hands at night, cover with old gloves too large for the hands; and in the morning wash off with pure water.

Another cure for chapped or blistered hands: Take a wine-glassful of sweet olive oil, three drachms of grated spermaceti, three drachms of grated gum-camphor, and three drachms of grated white beeswax. Mix together and put in an earthen vessel over a slow fire, stirring till all are thoroughly melted, with a wooden spoon or stick. When well mixed plunge the jar suddenly into cold water, and the mixture will form a white cake. At night rub the cake over the hands well, cover with kid gloves, and wash off in the morning in lukewarm milk. A few applications will cure the worst chapped or blistered hands, and if the hands are positively sore, the mixture may be applied two or three times during the day, keeping on the glove until the cure is effected.



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THE COTTON CROP.—Reports of the satisfactory growth of the cotton crop of the State, are reaching us from the several sections where cotton has been planted extensively. The Kern County plantation is doing splendidly. The Merced and Fresno crops are reported as being very desirably advanced. It seems that no doubts need be entertained of a successful result this season.

JAMES VICK, JR., of the world renowned Floral, Field and Garden seed establishment of Rochester, N. Y., called on us a few days since. We were pleased to see so distinguished a representative of Floral and Horticultural progress as Mr. Vick, in California; and hope he will find much to interest him in our land of health, gold, sunsine, fruits and beautiful flowers.

FOWL DOINGS.—W. T. Reilly of San Francisco, reports to us the success of a common, barn-yard female rooster, in her efforts to beat the world in the production of large eggs. She can show already nearly a dozen eggs that measure each 7 inches round. She goes in for a tremendous effort every Sunday, and her best doings, is an egg measuring 7½x6½ inches round. She is about filing a caveat for a patent, on the way she does it.

NOTICE.—We are requested to ask of the officers of all Agricultural, Horticultural and kindred Societies and Clubs, that they will send at once the address of their President and Secretary to Chas. W. Greene, Secy. of National Agricultural Congress, at Jackson, Tenn. It will be greatly to their interest to comply with this request.

WATERMELONS are appearing in our market from the vicinity of Marysville and Sacramento.

ON FILE.—Colfax correspondence; Letter from L. H. G.; From Our Traveling Editor.

A Talk With Our Readers.

With the present number we commence the fourth volume of the PACIFIC RURAL PRESS, and take the opportunity to return most hearty thanks to our many friends for the liberal aid and support which they have extended to us in an enterprise commenced at a period when the agricultural, and in fact all other interests on this coast, were in a condition of great depression. Notwithstanding such unfavorable circumstances, however, the PRESS has met with a degree of success never before attained by any newspaper publication in the State, during the first eighteen months of its existence. While we are conscious of much defect and short coming in the past, we nevertheless feel an honest pride in what has been accomplished, and are resolved to spare no effort to attain a still higher grade of excellence in the future. With increased experience, enlarged facilities, and the promise of more effective assistance, the proprietors think they can safely promise that the coming volume will be found still more worthy of patronage than either of the preceding ones.

The publisher of a prominent journal at the East once asked a friend—an old and experienced newspaper man—how he could best increase the usefulness and circulation of his journal. The friend, after sundry general remarks, to the end that people would in the long run support that journal best which really contained the best reading matter, presented in the most concise and interesting form, and that the only way to secure such a paper was to spare no labor or expense in obtaining the best talent and the best information that money could buy, concluded by saying that he would sum up his advice under three heads as follows: *Put money into it; put more money into it; put still more money into it.*

Now we have followed that advice ever since we started the RURAL PRESS—we have put all the money into it that we could command, without crippling our other enterprises. We have been constantly putting money into the PRESS, and building it up, with reference to future and regardless of present profits.

We have done the best we could to make the PRESS all that a first-class agricultural paper should be. Every page shows industry—each one filled with carefully prepared reading matter abounding with information useful to all classes, whether in city, village, country, field or shop. We employ the best practical talent to be found on the coast, in gathering, sifting and condensing information for the farmer, the mechanic and the household. Our engravings have, we believe, been all and more than could be expected; but we intend in the future, to increase the interest and value of that department, and give even a larger proportion of original ones.

We believe the universal verdict of our friends and patrons everywhere has been, that we have given them a paper quite in advance of what could be expected in so limited a field as that presented on the Pacific Coast. Our ambition has been to make a paper for the farmers of this Coast which shall nowhere be excelled, one to which they can point with pride and satisfaction, and such an one as they will not be ashamed to send or exhibit anywhere.

Our friends both here and at the East assure us that the PACIFIC RURAL PRESS has no superior, as an agricultural paper, even in the large field presented in the Atlantic or Mississippi States, where the populations on which they depend for support number three, four and five times as much as the population of the Pacific Coast.

Our friends have probably somewhat overrated the PRESS; but it is our determination to strive with all earnestness to fairly reach the position which, in their kindness and good wishes they have already assigned us. Our readers can very materially aid us in this work by using their influence to still further increase the circulation of the journal, and encourage our endeavors to widen its sphere of usefulness. This they can do by presenting the claims and advantages of the paper to their friends who may not be subscribers, and assisting our agents on their periodical visits by introducing them to friends, etc. For many reasons the larger the circulation of a paper, and the more free its patrons are in remitting their subscriptions, the more will the publishers, if men of enterprise, be able to improve its columns. They can also aid the usefulness of the paper by correspondence on practical subjects. Our best thanks are due for favors already received, which have been neither few nor small, in re-

turn for which we can assure our readers, one and all, that no efforts will be spared to render the current volume of the PACIFIC RURAL PRESS fully up to the best of its class, in everything that goes to make a paper interesting, attractive and useful.

Editorial Notes Among the Farmers.

Having determined to spend a week among the different classes of agriculturists of the counties of Sonoma and Marin, Tuesday morning of June 26th found us at the railroad depot in Petaluma. Upon inquiry at the depot we were informed that the American Hotel, Main street, kept by Talbot and Bowles, was the best hotel in town. We stepped into the buss bearing that name, and were soon at our home, comfortably fixed in one of the best rooms of the house.

This being done and dinner being over, we started out to find members of the Board of Directors of the local Agricultural Society, for consultation as to the localities and industries to be visited and routes to be taken. The first man we met was I. G. Wickersham, ex-President of the Society, who gave us a hearty welcome and very promptly and generously proposed to spend his time, and with his team to convey us to such points in the district as we might wish to visit. President Ellsworth and Secretary Grover were absent but we were soon called on by Vice-President Deuman and Director Meecham, and arrangements were completed by which we were to take a seat in the private carriage of the ex-President for a visit to some of the representative dairies of the two counties the next morning.

As expected on that morning, we met our traveling companion, Col. Younger, who had spent Tuesday among some of the stockmen in the vicinity. The Colonel accepted an invitation to ride with Director Meecham and thus accompanied and provided for, we were soon on our road for the dairy of Captain O. Allen & Son, which we were assured was one of the best arranged and managed in the State, if not in the United States. This dairy is situated in Marin county, in a westerly direction from Petaluma about 18 miles. It is six miles from the ocean and about 2½ from the head of Tomales Bay.

General Information.

As we rode along, we kept up a chat with our agreeable and well-informed companion and our readers may be interested in what we saw and learned, or, as Horace would say, in "What I Know about Farming" in Sonoma and Marin counties.

The entire road from Petaluma to Captain Allen's dairy, is through a rough, hilly country presenting the appearance, to a casual observer, of worthless, barren, waste land. Now we wind one way around the steep, rocky side of a mountain, now descend into and cross a deep cañon and follow up the rocky bank of a mountain rivulet—but all the way, the road is fenced, and nearly all the way we are in sight of well-conditioned and well-cared for herds of dairy cows, feeding, as we have read of, of old, on a "thousand hills." And every now and then, we pass a thrifty looking dairy establishment, with rows of bright tin pans glistening in the sun where they have been put out to dry.

Notwithstanding the barren and worthless appearance of this hilly region, every foot of land is under fence, and fully occupied, and is valued by the owners at from twenty-five to forty dollars an acre, and we are assured is assessed at those figures under the rule of "full cash value," adopted by our Legislature for the guidance of our assessors. Sonoma and Marin are known throughout the State as the dairy counties of the Pacific Coast, and the fame of this dairy region has spread far and wide through the best dairy countries of Europe.

Swiss Dairymen.

Especially have the sturdy Swiss dairy-masters been attracted from their Alpine homes by the superior advantages offered by our Coast Range districts, for carrying on their favorite rural occupations. It is said that already fully two-thirds of all the dairy business of Marin and Sonoma counties is in the hands of the Swiss, either as renters or owners. These people seem to be peculiarly adapted to this kind of business, as the Chinese, Italians and Portuguese are to market gardening, and are said to be a very peaceable, industrious and thriving people, and make the best of citizens. This is proved by the fact that their first introduction into this country as dairymen was as late as about 1860 and 1862 and some of those who

came here at that time with no money or capital, except their industry and knowledge of the business, are now paying taxes on property to the value of from two to three hundred thousand dollars and nearly all seem to be on the sure road to wealth.

One of the peculiarities of these people is their disposition to assist each other. This disposition takes the form of a practical mutual aid system. A poor boy comes to the country and begins by working in one of the dairies by the month; if he proves himself industrious, honest and saving of his wages, in the course of two or three years, he can command sufficient capital to rent and carry on the largest dairies in the county. His countrymen, who are able, take a practical interest in him, and by small loans for a long time, and at small interest, he is soon in possession of funds to make the first payment of fifty per cent. of the rent money of a good dairy of cows. The second and third payments he is able to meet from the business itself, and the poor boy is, in a very short time, one of the stable men of his neighborhood and is known among the bankers of the town by his stated and increasing deposits. Soon, instead of money he deposits his title papers and is the owner in fee simple of a section or two of Uncle Sam's domain and a citizen of his adopted country. The history of this young Swiss is the short but true history of many of that country now in Marin and Sonoma counties. And it foretells the state of the dairy business there in the not distant future. The large dairies will be sold out and divided into smaller ones. The American owners will give place to Swiss owners, and the products of the business will be greatly increased and the prices lessened.

Mode of Renting.

Some rent their dairies on shares, but more generally it is the custom now, to rent for money rent. If on shares, the owner finds the land, cows, tools, houses, and all the necessary conveniences, except the teams and wagons, and receives one-half the gross product in cash. The custom among those who rent for cash is to obtain from \$25 to \$35 per cow per year—one half down in advance and the other half in equal payments, say in July or October, or such other times as may be agreed upon. In the case of cash rent the owner furnishes the same as above stated when the rent is on shares.

The average net profits of the lessee is said to be about \$30 for each cow per year. Thus we have a key to the profits of the dairy business. The net profits per cow per year on an average, \$60. This is pretty good, considering that the average price for common dairy cows is about \$10. It must be remembered, however, that a necessary amount of land to support the cows, goes with them—experience, proves that it requires about seven acres to the cow, of land covered only with the native wild grasses. Or, to support a dairy of 100 cows 700 acres of land is required. Heretofore very little hay has been cut or fed by the dairymen, but they are now generally convinced that a change in this respect will not only be economical but that the continued prosperity of the business requires it. Of this we are fully convinced and the most prudent and prosperous dairymen will be the first to introduce the winter feeding of dairy cows.

Native and Artificial Grasses.

These Coast Counties have more rain generally than the interior counties, and they also generally have fogs through the summer season very frequently and hence the native grasses are kept green and in growing condition a greater portion of the year here, than in the interior. These facts together with a cooler summer, but more equal climate the year through, give to this county its natural advantages as a dairy county. The nearer you approach the sea coast we noticed that a larger portion of the native grasses are perennial, the very nutritious bunch grass becoming more prevalent. But the dairymen have very generally been experimenting with artificial grasses with a view to their introduction, if any are found, adapted to the country. Timothy, Red-top, Blue grass, Alfalfa, Mesquite and other varieties have been tried. None but the two latter have met with much success. It seems very probable that both the Alfalfa and Mesquite will be gradually introduced and double and perhaps quadruple the capacity of the county for the dairy business. Both have been proved perennial even to the tops of the highest hills, and both have cut for hay, yielding as high as three tons per acre to the cutting. Both are found doing well and growing luxuriously, presenting a beautiful green, in contrast to the yellow color of all the native grasses at this time.

Capt. Allen's Place.

We have enjoyed our ride immensely, and obtained a fund of information, and now, almost before we had thought of it, we emerge from a winding cañon and behold across a small valley on the brow of an oblong hill, extending across the entrance of another cañon which leads off in another direction, the beautiful cottage residence—dairy house, carriage house, barn and other outbuildings of Captain Allen, all painted white, and relieved and shaded with the deep green foliage of the locust, the native walnut, and fruit trees of various kinds, and festooned with the climbing rose, passion flower and other climbing vines. The first view presents to the mind a picture of prosperity, of comfort, of home—a country home in all its simplicity and rural beauty.

Sheep Husbandry.

From a State standing the sixth, then the fourth, and three years ago the third in the Union among the great sheep-producing States, we are now probably the foremost of all in point of numbers, and these producing more wool than the same number of sheep in any other State or country; and paying a larger per cent. on their value as property than any other kind of stock, where circumstances combine to favor their propagation.

There are two good reasons upon which we base the foregoing assertions. It is not unusual for one hundred ewes in California, to present their annual increase of one hundred and twenty, and in some cases one hundred and thirty lambs. This then more than doubles the flock, or is a hundred and thirty per cent. increase, whilst the wool more than pays the expenses of care and keeping for the year.

Two Shearings.

The great source of profit, is found in the fact, that we can shear twice instead of once in a year, making a large saving; for the two clips far exceed in quantity, that which is obtained from only a single shearing performed once a year; and though the wool of the two short clips per pound, is not worth quite as much as the same number of pounds of the longer clip, the increased quantity more than makes up the difference.

The great item, however, in favor of our sheep growers over the Eastern, is found in the comparative cost of feeding both summer and winter, but particularly the latter. No hay is necessarily required for winter feeding, and the general mildness of the climate renders it unnecessary to provide costly shelter either for the animals or their food. Nature supplies them both to a great extent; all the sheep grower has to do, is to avail himself of her prodigality; but as the numbers yearly increase, there is not a doubt but the limit of food will soon be reached, and recourse must be had to cultivated grasses or clovers for winter feeding to some extent.

Quality of Our Wools.

It has been amply demonstrated that the climate of California is highly favorable to the growth of fine wools, and as the size of the animals of all breeds yet introduced is actually increased, from the influence either of food or climate or both, there seems nothing in the way of making wool one of the great and permanent exports, and the number of sheep to exceed that of any other State of the Union.

Native Wild Fruits.

EDITORS RURAL PRESS:—There is a dispute here, as to whether there is such a fruit in California as a native wild plum or native grape, except the Mission grape. Will you please to enlighten us in your next RURAL, and oblige a subscriber.

L. F.

Stockton, June 24, 1872.

While a resident of Placerville, El Dorado Co., in 1855, we had heard of there being wild plums in some of the valleys of the Sierras; we had talked with those who said they had seen the trees, and eaten of the fruit. Our curiosity a little excited, we offered to furnish a team and put in five day's time to visit the locality where the plums were said to be growing; connecting the search for the same with our annual visit to the mountains, for trout, recreation and other pleasures of such a trip.

The result was, no plums; but we did find a plentiful growth of a small apricot, just then ripe for eating, and were really very fine. These were what our informant had called plums; but they are the true "*Armeniaca vulgaris*," some of the trees being 12 feet high and bearing abundantly.

The same fruit is found wild in the mountains of Asia, and seem to be, in connection with the fossil elephant, to represent animals, evidences that at least the western coast of our Continent at some former period, produced animals and fruits to some extent in common; whilst no where east of the Sierra Nevada has this apricot been found, though wild plums in considerable variety are very common.

In all the little valleys of the foothills where springs or rivulets abound, and along the Sacramento river, are found an abundance of wild grape vines, bearing a very small and extremely sour grape, fit for no earthly use without their full weight of sugar with them, as a conserve, and then they are but little more than seeds and skins.

The Larkspur.

This beautiful garden plant and flower, the *Delphinium* of Botanists, is a great favorite on account of its adaptability to flower garden and lawn decoration. It sports in wonderful variety, in its habit of growth, from a few inches in height to four or five feet; some with a close compact bush, and others open and branching, and all bearing a profusion of flowers remarkable for their variety, brilliancy and durability.

They are annuals, with blue, red and purple flowers, with every admixture of those colors possible, but never yellow. They are single, double and semi-double, the upper sepal of which, as in the rest of this genus of flowers, is spurred. The dwarf varieties, as the Double Rocket and the Stock Flowering—the latter producing magnificent spikes of very double flowers—are particularly fine for growing in masses; whilst the Pyramidal is tall, branching and graceful. Besides the kinds enumerated there is the Tricolor Elegans, a new and beautiful variety, and the Mixed Hybrid, which, on



DOUBLE-BRANCHING LARKSPUR.

account of their great beauty, should be found in every flower garden of any pretensions.

Our illustration—for the use of which we are indebted to E. E. Moore, seedsman and florist, 425 Washington street—shows in the lower corner a single flower of the natural size. It is this plant in all its varieties that is so deadly to the grasshopper; they take but one bite at the leaf, and they never bite again; so say the Australian papers.

SALT MARSH LANDS FOR BEETS.—We have before us a half inch section of a beet four inches in diameter, firm and crisp as all beets should be, presented us by Mrs. Rev. Wm. Taylor, Oakland, that we are assured grew so completely in a salt marsh, that it was daily overflowed by the tide. Here we have an evidence of the entire adaptability of salt lands to the production of beets for animal feeding at least, even though they may contain too much salt in their composition for sugar making purposes.

We cordially welcome the renewal of pleasing and interesting communications to the RURAL, from D. J. Ingraham, and hope he may find time to continue them indefinitely.

Fruit Drying Prospects.

Though the unusually late spring frosts were destructive to our fruits in many localities, yet California will still show a large surplus over what can be used in its ripe, fresh state, and large quantities will be dried, canned or wasted. We have just had a few moments talk with a fruit grower in the vicinity of Haywood's, Alameda Co., on the subject of drying the different fruits, usually subjected to this process, either for home consumption or shipment.

We find that the supply of plums last year was such, that large quantities were sold at one and a half cents a pound, which does not pay the cost of production and marketing. But, that three cents a pound will pay, and it is thought to be a better disposition of the fruit than to be to the trouble of drying it; and yet, a capital business is this same drying of plums, either for our own or the Eastern market.

Three pounds of German or French prunes will yield when stoned, one pound of dried fruit, worth twenty cents. Here is a hundred

Fires in the Grain Fields.

Already in every direction, we hear of fires sweeping through the grain fields of the great plains, destroying in a day the labor of months and bringing loss and dismay to hearts that but an hour before, were buoyant in the hope of an abundant harvest. In March last, we were the first to propose the growing of belts of Alfalfa of from ten to twenty yards in width at intervals across the grain fields, as effectual barriers against these sweeping fires.

Of course, it was too late in the season then, to grow Alfalfa for the present grain crop; but belts of thirty or forty feet in width, might have been mown off and made into hay, just as the wheat commenced running up to head, and then the same root would have produced another growth so late as to be now green, presenting not quite as perfect a barrier as Alfalfa, but one that in many instances would have saved hundreds, perhaps, thousands of acres.

The following from the San Joaquin Valley *Argus* of June 29th, is, but one of the many fires that we have already heard of, and probably will hear of many more.

"Fire broke out in a grain field near Merced about 11 o'clock on Wednesday evening last, which destroyed a considerable amount of grain. J. F. Goodale and Jesse Hackworth are mentioned as among the losers. The origin of the fire was not known when our informant left. We understand that when the alarm was given, the citizens of Merced and surrounding country rushed *en masse* to the scene and worked like Trojans to prevent it from spreading."

Now, if between these two sufferers, unless they are partners, owning the burnt district in common, either had interposed a belt of forty feet in width of Alfalfa or very late sown grain, which would have been now green, there need not have been but one loser instead of two.

And, it is the more strange that our farmers do not adopt the proposed preventive, when the very hay crop would be worth to them more than any grain crop could be, upon the same extent of ground. We believe this year's losses will open the eyes of our wheat growers to the importance of interposing these green belts, as preventives of the annually recurring fires in grain fields.

An Extensive Wheat Field.

On the west side of the San Joaquin river in this vicinity, there is a grain field which extends for thirty-five miles and is of an average width of eight miles, thus covering an area of 179,200 acres. Persons who have lately traveled through this immense grain field estimate the total average yield at sixteen bushels to the acre, which will give a total yield of 2,867,200 bushels, or 86,015 tons.

This amount of grain would load 8,601 cars, which, if made up in one train, would reach for over eighty miles, or from Bantas to the Oakland wharf. There is, however, a much larger area cultivated on the east side of the San Joaquin than on the west side.

From Lathrop to Merced, a distance of over fifty miles, the railroad runs through an almost unbroken grain field, extending as far as the eye can see on either side. The product of this whole valley will be much greater than ever before, and the railroad company will find it very difficult to move the immense amount to market before the commencement of the rainy season.

We copy the above from the *Stockton Independent*, for the purpose of letting the world abroad know, that California has the largest wheat field in the world. With an average length of 42 miles by a width of 16 miles, it contains 672 square miles, or 430,080 acres. True, there is a small creek, that just out of compliment, is called the San Joaquin river, and one railroad running through our big wheat field; but this we could not help, and would not if we could; but except these, we claim for it the largest disconnected wheat field in the world.

RASPBERRIES.—These berries are remarkably fine this year, and continue to bring twenty cents a pound retail. We occasionally make quotations of this kind, giving the retail prices by the pound, as we find them by just stepping out of our office for a moment and asking the prices of the different products at some half dozen fruit stands, that the producer who may read our notice, may see just what is made on the fruit between his hands and the consumer.

TOMATOES.—This vegetable is in market in great abundance, fully ripe and retailing at eight cents per pound.

per cent. gain over selling the fruit at three cents per pound undried, which is enough to cover all the expense of drying, and leave a large profit. When dried with the stones, the same fruit will bring only from six to eight cents per pound.

It is found better to stone the fruit before drying, though many persons pursue the European method of drying on the stones. It seems simply a paying of freight upon an article which is wholly useless, though the reason given for the practice in France and Germany is, that the stones give a particular and desirable flavor to the cooked fruit, which it never attains when dried without the stones.

The comparatively few dried plums, on the market last year, two or three thousand pounds, were eagerly taken on Eastern account at twenty cents per pound. If the quantity had been a hundred tons, the demand would not have been supplied.

BLACKBERRIES.—Ripe, wild blackberries of good quality were on sale a week ago; and for the last five days, the cultivated varieties have put in an appearance, large, ripe and delicious, and selling at retail from 20 to 25 cents per pound.



How to Get Rich.

BY WM. D. MORANGE.

Put on the airs of an eight-keyed flute,
If you're only a penny-whistle;
Pass where you can for a garden rose,
If you're only a wayside thistle.

Blow, whenever you blow your horn,
So people can understand
That you may be sharp, but you won't B flat,
In society's great brass band.

Pass the plate or the hat in church
With the usual Sabbath air,
But move with a mild, religious squeak,
That people may know you're there.

If you carry a nose six inches long
(And a beak can scarce be longer),
Believe it a sign of perception strong,
And the longer it is the stronger.

But if in the order of nasal tubes
Your organ is brief in measure,
Then, brevity being the soul of wit,
Consider your pug a treasure.

Love your neighbor—but mark the force
Of the gospel rule of grace—
The more you admire yourself, my friend,
The higher your neighbor's place.

Clink your dime in the deacon's pan
As if you were throwing gold,
And give with an eye to the business hope
Of reaping a hundred fold.

Whether your reading is little or great,
Quote right, or never quote;
Polish your uppers, though down in the heel,
And never indorse a note.

Always advance best hand, best foot,
(Best hand, best foot your own),
And thus you may feast on the fat of the land,
While others enjoy the bone!

Female Literary Ability and Labor in San Francisco.

The avenues of labor for women in San Francisco, as in most all cities, are very limited—still there are radical steps of improvement made from year to year in this respect, and we are frequently directed to notice the rapid development of talent and the opportunities offered for that development and culture in our midst. In our city at the present time ladies are employed at type-setting in one daily newspaper offices, one large publishing house, and five weekly newspaper offices. Of ladies as editors we have four, all educated women, who understand their business quite as well as men. Of reporters, regularly employed by the press, we believe there are only two—one of them a short-hand expert. Lady correspondents regularly employed by Eastern papers number four, and several occasional in addition. One of the ladies is a commercial and business reporter for two foreign journals, whose position on these papers is very responsible and remunerative; this is the short-hand reporter we have alluded to.

Literary ability is rapidly developing in our female circles—romance literature is not receiving any additional workers by this development, but strong, earnest, practical branches of good-sense literature, that are calculated to cultivate, refine and educate the masses. Women who are writing professionally in California, are at work in sensible avenues, and dealing less with fiction than the writers of other States.

Practical ability has but few first-class laborers, but the few are above the average of practical amateurs. Among these we must notice Miss Ina Colbrith; she deserves mention and prominence; her efforts are conceded to be far superior to any other poetic writer on the coast.

In descriptive talent their are several lady authors of more than usual ability and taste, and whose names will shine among the list of noted American authors a few years hence. In dramatic authorship, we have two ladies eminently fitted in this direction, and who are studying for this especial branch of literary industry. We regret that there are so few opportunities offered for the culture of literary

talent in California, and so little encouragement for our virtuous writers. As our country progresses in age and education, we hope to chronicle a great change in this particular, and that female labor shall find a remuneration equal to that of the other sex, and no discrimination made on account of sex, if the same amount of work is as creditably performed.

From Leafy Glen.

DEAR RURAL:—I have been induced by reading Farm House Chat in the last number of your very excellent journal, to write you a few of my ideas in regard to labor. It is a lamentable fact now-a-days, that women and girls try every means in their power to shirk what they call drudgery. You can see daily, poor, tired, over-worked mothers, saving three or four bouncing girls from dirty work, like cleaning vegetables, washing dishes, scrubbing floors, sweeping, making beds, etc., when if the work had been properly divided, each one's share would have been easily and cheerfully performed, thereby prolonging that dear mother's life a number of years. You perhaps remonstrate with her, telling her that she is neglecting her duty to her daughters, she looks at you with a mournful, self-sacrificing look, shakes her head and replies, "No, no, the dear girls shall be educated in other things, but I do not want them to drudge as I have done." I do not know what the mothers of to-day mean by neglecting this important branch of education. Too much cannot be said to arouse them to the great truth that they cannot make good wives and mothers unless thoroughly educated in housework. I once happened at a suffrage meeting, where the question rose for debate; "Is labor degrading?" They could find no one among the debating members willing to take the negative of the question, because in their secret souls they knew their own daughters were being waited upon by servants; not a single one of them were capable of keeping their bedchambers in proper order, some of them having reached the ages of fourteen, fifteen and sixteen. I say of such women and mothers, that all their talk and lecturing about "woman's sphere," "rights," etc., is a humbug. Let them do the work their hands find at home. Let them see to it, that every boy and girl (however worldly endowed) lend a helping hand to some of the duties belonging to the household work. It will not take them from their books, music or embroidery, and my word for it, they will be healthier, more active, and make better men and women. Three months ago my husband and I moved on to a ranch, since which time I have helped to do part of the out-door work, he helping me in the house so that I could find the time, as out-door exercise was quite necessary on account of poor health. I at first found it fatiguing, but not at all degrading, on the contrary, ennobling. Now I can work out all day, only stopping to get the meals, (very light ones) and at night rest better than I have since a child. I have an idea that all the lady readers of the RURAL do know how to work in-doors and out, but if there be any not used to it, I recommend it as the best cure for ennui. Now in closing, I wish to thank the proprietors for their ever welcome paper, and I am sure if it is welcomed everywhere as it is at the Glen, their friends must be legion. MARION.

Leafy Glen, June 16th, 1872.

A Few Questions.

Is there anything gained by a hashing and rehashing of family matters before children or strangers?

Are children taught to love and obey a parent by hearing his or her failings discussed, or do strangers improve matters by interfering? Certainly it spoils a visit when quarreling, bickering, twittering and flinging up of each other's faults, take the place, between husband and wife, of pleasant hospitality and general conversation.

As children grow up they learn the failings of their parents fast enough, without being told of them while too young to understand that no one is perfect. Who thinks more of a man because he taunts his wife before strangers; that she is a "perfect gad-about, taking no interest in home" or that she "has no government, and is ruining the children by indulgence;" or that "his young ones are fools

and their mother is willing to let them grow up so rather than drive them to their books with a birch rod, which they need three times a day." Are a woman's charms enhanced when she asserts before a totally uninterested party, that her husband is a "perfect tyrant and treats his wife and children as if they were brutes?" or "that he neglects his family and takes his pleasure abroad." These are very delicate subjects which ought never to be mentioned before children or outsiders, if people would have home as pleasant as possible to all who come within its influence.—Elm Orlu.

Educating Girls.

Educating girls for household duties ought to be considered as necessary as instruction in reading, writing and arithmetic, and quite as universal. We are in our houses more than half of our existence, and it is the household surroundings which affect most largely the happiness or misery of domestic life. If the wife knows how to "keep house," if she has learned how to "set a table," if she has learned how things ought to be cooked, how beds should be made, how carpets should be swept, how furniture should be dusted, how the clothes should be repaired, and knows how purchases can be made to the best advantage, and understands the laying in of provisions, how to make them go farthest and last longest; if she appreciates the importance of system, order, tidiness and the quiet management of children and servants, then she knows how to make a little heaven at home—how to win her children from the street; how to keep her husband from the club-house, the gaming table and the wine-cup. Such a family will be, trained to social respectability, to business success and to efficiency and usefulness in whatever position may be allotted to them.

It may be safe to say that not one girl in ten in our large town and cities enters into married life who has learned to bake a loaf of bread, to purchase a roast, to dust a painting, to sweep a carpet or to cut, fit and make her own dress. How much the perfect knowledge of these things bears upon the thrift, comfort and health of families, may be conjectured, but not calculated by figures. It would be an immeasurable advantage to make a beginning by attaching a kitchen to every girl's school in the nation, and have lessons given daily in the preparation of all ordinary articles of food and drink for the table; and how to purchase them in the market to the best advantage, with the result of a large saving of money, an increase of comfort and higher health in every family in the land.—Hall's Journal.

How SOON FORGOTTEN.—Some one has said truthfully, generation after generation have felt as we do now, and their lives were as active as our own. The heavens will be as bright over our graves as they were around our paths. Yet a little while and all this will have happened. The throbbing heart will be stilled, and we shall be at rest. Our funeral will wend its way, and the prayers will be said, and we shall be left in the darkness and silence of the tomb; and it may be that for a short time we shall bespoken of, but the things of life shall creep on and our names shall be forgotten. Days shall continue to move on, and laughter and songs will be heard in the rooms where we died; and the eyes that mourned for us be dried and animated with joy, and even our child will cease to think of us, and will remember to to lisp our names no more.

If you see half a dozen faults in a woman you may rest assured she has half a dozen virtues to counterbalance them. We love your faulty, and fear your faultless women. When you see what is termed a faultless woman, dread her as you would a beautiful snake. The power of concealing the defects which she must have, is, of itself, a serious vice.

The shortest expression, supposing equal perspicuity and elegance, is the best. The rays of sense, like those of the sun, acquire force by converging, and act more vigorously in a narrow compass.

He that feasts his body with banquets and delicate fare, and starves his soul for want of spiritual food, is like him that feasts his servant and starves his wife.

ANSWERS TO ATLAS PUZZLES IN YOUNG FOLKS' COLUMN LAST WEEK.—State of New York.—Lockport. Marion. Kinderhook. Cherry Valley.

State of Pennsylvania.—Ralston. Clarion. Beaver. Carlisle. Somerset. Monroe. Shippen.

Answer to Charade—Cotton.

Young Folks' Column.

A "Blowing Cave."

[Written for the Press.]

My dear young folks, did any of you ever hear of a "blowing cave?" I will tell you of one I visited and explored while I was following the flag of our country, in the State of Arkansas. I was a private soldier in the army of Gen. Steele, and our regiment was encamped at Batesville, a charming little village on White river, not far from a low range of hills, called the Boston Mountains. I call it a *low* range of hills, for in comparison with our gigantic Sierras they appear very small. During our stay at Batesville I chanced to be detailed as one of a party to go foraging up the valley about forty miles. We were absent from camp three or four days. We passed through some very beautiful valleys, in which were clearings with the usual log cabin and a few acres of corn and potatoes, while running at large in the woods and feeding fat on the mast, were countless hogs. While our foraging party was camping one night near a beautiful little clear creek that brawls along over its pebbly bottom and joins White river just below, one of our number while hunting for wood to kindle our fire, came suddenly upon a low rent in the rocks that seemed to be the entrance to a cave. Stooping down and looking in, he was surprised to find a cold wind meeting him face to face, and to notice the grass and flowers swaying as in a stiff breeze. Communicating the news to his companions, quite a number visited it that night. I resolved on making a thorough exploration of it, as I learned from the Captain that we would remain in camp over the next day, gathering forage for the horses. Accordingly, the next day I equipped myself with a good lantern and with a companion entered the breezy cave. After crawling on our hands and knees for about one hundred feet, we found the roof somewhat higher, and soon came to a large chamber, twenty feet high and forty or fifty feet long by twenty-five wide, having doorways going out right and left. In this chamber the breeze entirely ceased, but to the right we found a narrow, low passage through which it blew as strong and as cold as ever. One of the neighboring chambers contained an enormous stalactite reaching from the roof above nearly twenty feet to the rocky floor beneath. It measured eighteen feet in circumference. The water was still dripping and had formed some beautiful terraces, one above another, each full to the brim of the clearest and coolest water I ever saw. There were numberless stalactites and stalagmites hanging from the vault above or projecting from the level floor below. A little further on we found a stream of water which on wading proved to be over waist deep. Some places were very rough and rocky, and as we went further in, the walking became climbing and wading. Wherever the channel narrowed, the wind blew strongly in our faces; wherever the passage widened into a chamber it ceased altogether. Finally we came to a place where the overhanging roof seemed to have fallen down and to be still threatening to overwhelm any daring explorer who might attempt to go any further. The stillness, the death-like silence was unbroken save by the rippling stream. We sat down to rest ourselves upon a huge rock and tried to think where that breeze came from. Outside the cave in the valley all was still and quiet. The weather was excessively hot and the air that was in the cave was very cool. So we came to the conclusion that the breeze coming out of the cave was only Nature's plan for equalizing the different temperatures. You know that if you open the door of a closely heated room a little way and hold a light at the top of the opening, the flame will be drawn toward the cool open air by the heated air rushing out at the top, while if you hold the light near the floor, you will find the flame drawn into the room by the cool air finding its way in. So the "blowing" cave may have had some other opening higher up the mountain side where the warmer air entered. Perhaps in winter the breeze may be found entering the mouth of the cave or ceasing altogether because the temperature without has changed. Another time if it be considered no intrusion, I will tell you all about a "floating meadow" which I saw in my soldier travels in the South.

DUNCAN G. INGRAHAM.

DOMESTIC ECONOMY.

Real Lace—How to Wear it and How to Clean It.

It has been said that women will fall down and worship a bit of dingy lace. Men wonder why ladies, dainty as regards the cleanliness of every other article of dress, will wear lace which is, to say the least, yellow, if not positively soiled. *Point d'Alencon*, one of the most beautiful and costly of the lace family, has a dingy appearance, even when new—the dirt appearing to be in the thread itself. This doubtless arises from the fact that it is slowly made, from handspun thread, and the poor lace-makers weave into it the sweat of their fingers, if not of their brows.

The fashion of dingy or yellow lace is one of ancient origin. In the days of Elizabeth, immense lace ruffles were worn at the neck and wrist, the lace being generally handed down from one generation to another. To have old lace, was to have an ancient lineage. Of course, the yellow tinge of age was not to be bought by parvenses, and to have washed one's lace, forsooth! would have been to take away its prestige entirely.

But doubtless the fashion has another reason for its origin. The moment the delicate meshes are wet the tiny threads shrink and the lace "fills" more or less. I have heard ladies say that they could not do up lace to look "just like new." Now, this very fact of shrinkage proves that it can not be done by any but a "professor." The art of washing fine and costly lace is a trade in itself. It is spread, while wet, upon a cushioned table, and, after being pulled smooth, a pin is stuck into every mesh, to prevent shrinkage, a whole day sometimes spent upon a single yard of lace. When ladies can do that they can perhaps do up lace to "look just like new." I once knew a lady, possessed of a rare collection of valuable laces, and also a rare passion for them, who washed and pulled them until they were dry, and then, slightly oiling some fine writing-paper, pressed the lace between the folds of it for several days. Of course she had not much else to do, and the lace, especially the *Valenciennes*, did really look beautiful, but it did not look new after all, and lacked the spirit-like delicacy of that which has never been wet.

There is no finish so perfect to a lady's attire as a set of lace collar and cuffs. One should wear linen in the morning to be sure, the pure whiteness and washableness harmonizing well with the plain print or merino morning-dress. But for full-dress, one must have lace, fine and clear, both for beauty and fashion. To wash it is to spoil it. To throw it away as soon as it has become soiled—well, only people who wear diamonds at breakfast can do that; while to wear it positively dirty with oil from the hair or neck, is to forfeit the respect of all whose good opinion is worth having.

But there is a way out of this dilemma both easy and feasible. If a box of powdered magnesia be kept at hand, and the laces thrown in and covered as soon as they are taken off, and kept there until they are wanted again, they will come forth as clean and fresh as could be desired. The magnesia can all be removed by beating the lace across the hand. Lace which has become much soiled by long use may be cleaned in this way so as to be quite presentable over a dark dress; only, it must be thoroughly rubbed with the magnesia.

Lace-mending forms a separate branch of industry in Europe; as distinct, if not as widely followed, as lace-making. Like that, the trade must be learned, for the delicate meshes and pattern must all be restored. Ladies of rank often employ lace-menders to teach them their art—that being, I suppose, as fascinating an employment as embroidery. Charlotte Bronte, in "The Professor," makes her heroine a lace-mender.—*Hearth and Home*.

Strawberry Syrup.

Somebody recommends the following as a very excellent preparation from strawberries: Take two pounds of nice berries, all the green ones being carefully picked out, and put them into a large bottle with a wide mouth, and at the same time two and a half pounds of finely pulverized white sugar. The bottle should not be quite full. They are to be left standing at the ordinary temperature, being occasionally gently shaken up. The sugar takes up the liquid part of the berry, forming a clear, aromatic syrup, while the solid parts shrivel up almost odorless and tasteless, and may be easily separated by straining through a linen cloth. Milk or wine may be poured over the residue to make a palatable dish for the table. The above quantity of berries and sugar make one and a half quarts of syrup. It may be kept for some time in closely stopped bottles in a cool place. It must not be heated, because the flavor of the berry is very volatile; a long exposure of the juice to the air is also injurious. The syrup, diluted with water, makes an agreeable ice; or it may be mixed with some light wine as a drink. Raspberry syrup may be prepared in the same way. The flavor of the raspberry is not injured by heat, and the syrup may be more quickly prepared and with less sugar by placing the bottle for a short time in boiling water. This syrup may also be used for ices. As a drink, when diluted with water, it is less piquant than that made in the usual way by crushing the berries and letting the juice stand for a week.

A Chapter on Eggs.

Would it not be wise to substitute more eggs for meat in our daily diet? About one-third the weight of an egg is solid nutriment. This is more than can be said of meat. There are no bones or tough pieces that have to be laid aside. A good egg is made up of ten parts of shell, sixty parts white, and thirty parts yolk. The white of an egg contains eighty-six per cent. of water, the yolk fifty-two per cent. The average weight of an egg is two ounces. Practically an egg is animal food, and yet there is none of the disagreeable work of the butcher necessary to obtain it. The vegetarians of England use eggs freely, and many of these men are eighty and ninety years old, and have been remarkably free from illness. A good egg is alive. The shell is porous and the oxygen of the air goes through the shell and keeps up a sort of respiration. An egg soon becomes stale in bad air, or in dry air charged with carbonic acid. Eggs may be dried and made to retain their goodness for a long time, or the shell may be varnished, which excludes the air, when, if kept at a proper temperature, they may be kept for years. The French produce more eggs than any other, and ship millions of them to England annually. Fresh eggs are more transparent at the center, old ones on the top. Very old ones are not transparent in either place. On water in which one-tenth of salt has been dissolved, good eggs sink, and indifferent ones swim. Bad eggs float in pure water. The best eggs are laid by young healthy hens. If they are properly fed the eggs are better than if they are allowed to eat all sorts of food.

Eggs are best when cooked about four minutes. This takes away the animal taste that is offensive to some, but does not harden the white or yolk as to make them hard to digest. An egg if cooked hard is difficult of digestion, except by those with stout stomachs; such eggs should be eaten with bread and masticated very finely. An excellent sandwich can be made with eggs and brown bread. An egg spread on toast is food fit for a king, if kings deserve any better food than anybody else, which is doubtful. Fried eggs are less wholesome than boiled ones. An egg dropped into hot water is not only a clean and handsome but a delicious morsel. Most of the people spoil the taste of their eggs by adding pepper and salt. A little sweet butter is the best dressing. Eggs contain much phosphorus, which is supposed to be useful to those who use their brains much.—*Herald of Health*.

Hygienic Bill of Fare.

BREAKFAST.—Brown bread, wheaten gems, corn-meal gems, butter, sugar, cracked wheat, mush, milk, tomatoes, baked apples, baked potatoes, sweet potatoes.

DINNER.—Roast beef, potatoes, squash, string-beans, tomatoes, brown bread, butter, cold gems, apples, and grapes.

SUPPER.—Wheat-meal gruel, sugar, milk, brown bread, butter, cold gems, graham cake, stewed apples.

By wheat-meal is meant unbolted wheaten flour. Cracked wheat is the same, very coarsely ground.

Water is placed on the table at noon, but no drink at breakfast or supper. Eastern water-cures generally furnish no meat.

GOOD HARVEST DRINK.—Mr. Blair Burwell, of Powhatan, communicates to the *Southern Farmer* the following recipe for a harvest drink: Water, 33 gallons; Sharp Vinegar, 1 gallon; Molasses, 1½ gallons; Ground Ginger, ¼ lb.

This will last thirty hands until dinner time, when as much more may be mixed up to serve until night. It is carried to the field daily in a cart, and moved about after the hands, each one of whom is limited to a cocoanut full at a time, always without ice—they drink nothing else.)

For our part we see no harm in ice. We have used it regularly for fourteen years with out any bad result, but on the contrary, we think with benefit.

We know persons who have used it beneficially for a still longer period. A venerable friend of ours, recently deceased, assured us that he had used it thirty years or more, and never without advantage. His plan was too carry out a barrel of ice on a cart, and keep the water tubs nearly filled with it. His theory, and we believe the true one, was, that the ice acted as a tonic; and the hands could never drink to distention.

Strong coffee should always be given at breakfast and at night.

CREAM BEER.—As the warm weather is now upon us we begin to think of refreshing drinks. I have a famed receipt which I give. It is an effervescing drink, but far pleasanter than soda water, inasmuch as you do not have to drink for your life to get your money's worth, the effervescence being much slower. Two ounces tartaric acid, two pounds white sugar, the juice of one lemon, three pints of water. Boil together five minutes; when nearly cold, add the whites of three eggs well beaten, with half a cup of flour and half an ounce of essence of wintergreen. Bottle and keep in a cool place. Take two tablespoonfuls of this syrup for a tumbler of water, and add one-quarter of a teaspoonful of soda.—*Household*.

How to Cook Potatoes.

BAKED POTATOES.—Potatoes are more nutritious baked than they are cooked in any other manner; and they relish better with those who have not been accustomed to eat them without seasoning. Wash the potatoes clean, but do not soak them. Bake them as quickly as possible, without burning in the least. As soon as they are done, press each potato in a cloth, so as to crack the skin and allow the steam to escape. If this is omitted, the best potatoes will not be mealy. They should be brought immediately to the table, as they will soon become solid and lose their flavor.

STEAMED POTATOES.—Potatoes are much more nutritious and palatable if they are properly steamed, than they are boiled. Wash them clean and place them in a steamer over boiling water. If the potatoes are of a good quality, the secret of having them mealy and palatable is in steaming them very rapidly—as without a rapid condensation of steam and a detention of steam in the steamer by a close lid, the potatoes will be hard and appear not to be done, however long they may have been cooking. They should steam until the skin cracks, and a fork will easily penetrate the centre. If not to be brought to the table soon, they should continue to steam until wanted, as steamed potatoes become solid much sooner than boiled ones do.

TO BOIL POTATOES WITH THE SKINS ON.—After the potatoes are properly washed and a little of the skin taken off at the ends, place them in a kettle of boiling water, allowing no more water than is sufficient to cover them. They should boil slowly, as the agitation of water in rapid boiling dissolves and breaks the potatoes before they are done, and leaves them insipid and moist. They are better left unmoved to boil, and there should always be a vessel of hot water, from which the kettle may be replenished in case there is rapid evaporation from the state of the atmosphere. A pot with the top drawn in is better for boiling potatoes than a wide-topped vessel. The water should be poured from them before they are quite done to the centre. A few spoonfuls of cold water should then be added, and the vessel be placed upon the hot part of the stove with a clean napkin thrown over until the potatoes are wanted.

If the best potatoes cannot be obtained (and no others are really fit to eat,) when about half done pour off the water; add cold water, but not enough to come to the top of the potatoes, and finish boiling and steaming them off as before. A close cover should never be placed over potatoes after cooking, either in the kettle or upon the table. After potatoes are about half boiled, for variety they are very nice finished off in the oven, either with the skins on or after removing them. They will need but a short time to bake in this manner.—*Herald of Health*.

USES OF PAPER.—Few housekeepers are aware of the many uses to which waste paper may be put. After a stove has been blackened it can be kept looking very well for a long time by rubbing it with paper every morning. Rubbing with paper is a much nicer way of keeping the outside of a tea-kettle, coffee-pot and tea-pot bright and clean than the old way of washing them in suds. Rubbing with paper is also the best way of polishing knives and tin-ware and spoons; they shine like new silver. For polishing mirrors, windows, lamp-chimneys, etc., paper is better than dry cloth. Preserves and pickles keep much better if brown paper, instead of cloth, is tied over the jar. Canned fruits are not so apt to mold if a piece of writing paper, cut to fit the can, is laid directly on the fruit. Paper is much better to put under a carpet than straw. It is warmer, thinner, and makes less noise when one walks over it. Two thicknesses of paper placed between other coverings on a bed are as warm as a quilt. If it is necessary to step upon a chair always lay a paper upon it, and thus save the paint or wood-work from damage.

Selected Receipts.

RASPBERRY JAM.—Let the raspberries be thoroughly ripe. Mash them with a wooden spoon. To every pound of raspberries add a pound of sifted sugar. Boil this well together during half an hour, stirring it continually, lest it should burn. When of a good thickness, put it into pots, let it cool thoroughly, and cover with brandied paper.

BLACKBERRY JELLY.—Gather the fruit when perfectly ripe, and in very dry weather. Put the blackberries into a jar and place the jar in hot water, keeping it boiling until the juice is extracted from the fruit. Pass it through a fine sieve or jelly-bag without much pressure. For every pint of juice add fourteen ounces of sugar and boil in a clean preserving-pan about five minutes, carefully taking off the scum as it rises to the surface. Place it hot in small jars and cover it down with thin tissue-paper, dipped in brandy, and brown paper over it. Keep it in a cool, dry place.

APPLE TAPIOCA.—Pare and core fine apples, place them in a deep pudding dish, fill the openings where the core was removed, and sprinkle thickly over the apples with white sugar. Have a dessert spoonful of tapioca soaked in water for each apple; and a little salt, and place this about among the apples; fill up with water to the top of the apples, and bake until the apples are soft and delicately browned, but not until they have lost their shape. Eat cold, with cream or a soft custard.

MISCELLANEOUS.

Silk Culture.

EDITORS PRESS:—The progressive, enterprising and enthusiastic Newman, whose experimental cocoonery I have this day had the pleasure of visiting, has resolved upon not being unduly represented in the present trial of sericulture. He is loud and bitter in his complaints against the press of the State, accusing it of having based its instructions to the people upon the silliest theoretical suppositions of the most ignorant scribblers, thereby disparaging the enterprise in the estimation of capitalists, and hence robbing it of the support it so much needed to make it a success. He intends giving the result of his present experiment to the public as occasion demands, fully believing that silk growing is not a failure, but can be made a success, provided experiments are conducted thoroughly, and by persons well qualified to conduct them. He says, "As good cocoons can be produced amid the snows of the Sierras, and the fogs of coast counties as can be brought forth from the warmer and more genial climes of the south, provided certain conditions are at our command." Which conditions will be revealed fully as he progresses.

Mr. Newman has at present, in the different stages of advancement 1,200,000 worms which appear to be healthy and in a flourishing condition. He is confident that the present trial will determine the fate of the silk-growing interests of our State.

The silkgrower meets with considerable difficulty in obtaining feed for his worms, owing to the fact that the unprofitable speculations of the past, contributed to the almost complete destruction of the mulberry plantation.

It is possible, and probable that silk culture may be a success here, provided, it becomes the earnest endeavor of parties interested to make it such. Yet while the country is full of unprincipled parties who are too ready to turn the assistance rendered honestly by the State to a dishonest purpose, discouragement will inevitably result, and any assistance from the State had better be withheld, since its genuine purposes are subverted to the fatal injury of the object sought by the speculatively inclined. But as the history of the past has undoubtedly cooled the speculative ardor for the future in this branch of business, we may predict with safety that Mr. Newman will be left alone this time, and that the well-wishes of all will follow him in his effort to place upon a paying basis the great object of his enthusiasm.

ABREULIS KAMP.

San José, June 10, 1872.

Peach Leaf Blight.

EDS. PRESS:—In your article in the *RURAL* of June 29th, you say that the leaf curl, so injurious to peach trees this year, is caused by atmospheric influence. Allow me to differ from you, and give my reasons for doing so, without charging you with making "ignorant assertions," because we differ. You believe that heat, cold, or moisture alone caused the blight. I did think myself at first, that it was caused by the late spring frosts acting in some way upon the sap of the, as yet almost undeveloped leaves; but this cannot be the cause, for here and there all through my orchard are trees that have not been in the least affected by the curl leaf, and yet were exposed like all the rest to the same severe frost.

I find the trees not struck by the blight are my poorest peaches, while the best varieties suffer the most. I think there is some kind of very minute insect that either bites, because preferring the juice of the leaf of the best peaches in preference to the common ones, or, perhaps, stings them, and thus they alone suffer from the blight. It was not the frost with my trees, I am sure.

C. D.

Napa Valley, July 1, 1872.

Our correspondent is referred to an article in another column for our views in relation to the cause of the "curl leaf," of the peach tree.

THE object of conversation is to entertain and amuse. To be agreeable, you must learn to be a good listener. A man who monopolizes a conversation is a bore, no matter how great his knowledge.

Monday as Pay-Day.

In this age of progress experiment often decides important questions in the social economy, as well as in science. One of the late innovations upon former custom has been the payment of workmen on Monday, instead of Saturday. Several large manufacturing establishments in England and America have inaugurated this system, which has generally been found to work well. An Eastern exchange, speaking of the plan, presents the following argument in its favor:

The temptation necessarily involved in a day of leisure and a pocketful of money, have been no longer felt. Sunday, instead of being devoted to dissipation, has become a day of healthful recreation and rest; and the week's wages, formerly in great part wasted, have been used to far better advantage. Under the old system it often happens that first-class workmen lose from one to three days early in the week in recovering from the effects of their Sunday excesses. Under the new system this evil no longer exists. It is said that the same number of men do one-and-a-half times as many days' work in the same time. The efficacy of the change has been thoroughly proven. It is to the interest of both master and man; and it therefore lies in the power of every employer to add greatly to the physical and moral welfare of his employes, not only without any loss, but with a positive gain to himself.

Weights and Measures.

AS RECOGNIZED BY THE LAWS OF THE UNITED STATES.

Bushel.	Pounds.	Bushel.	Pounds.
Wheat.....	60	Blue Grass Seed.....	44
Shelled Corn.....	56	Buckwheat.....	52
Corn in the ear.....	70	Dried Peaches.....	33
Oats.....	56	Dried Apples.....	26
Barley.....	52	Onions.....	57
Cauliflower.....	47	Salt.....	50
Irish Potatoes.....	60	Stono Coal.....	30
Sweet Potatoes.....	55	Malt.....	38
White Beans.....	50	Brass.....	28
Castor Beans.....	50	Plastering Hair.....	8
Clover Seed.....	60	Turnips.....	8
Timothy Seed.....	45	Unslacked Lime.....	30
Flax Seed.....	56	Cornmeal.....	48
Hemp Seed.....	44	Fine Salt.....	55
Millet Seed.....	50	Hungarian Grass Seed.....	50
Peas.....	60	Ground Peas.....	24

A box 24 by 16 inches, 22 deep, contains 1 bushel.
A box 16 by 16 inches, 8 deep, contains 1 bushel.
A box 8 by 8 inches, 8 deep, contains 1 peck.
A box 4 by 4 inches, 4 deep, contains 1/2 peck.
A box 4 by 4 inches, 4 1/2 deep, contains 1 quart.
The standard bushel of the United States contains 2150.4 cubic inches. The "imperial bushel" is about 68 cubic inches. Any box or measure, the contents of which are equal to 2150.4 cubic inches, will hold a bushel of grain. In measuring fruit, vegetables, coal and other substances, one-fifth must be added. In other words, a peck measure five times even full makes one bushel. The usual practice is to "heap the measure."

How to Kalsomine.

There are as many ways to kalsomine as there are to whitewash. The simplest mode is to take ten pounds of Paris white, and soak it in cold water—just enough water to dissolve it well. Take one-eighth of a pound best white Cooper glue, soak in cold water, enough to cover. Let it soak three to four hours; or till well swelled. If there is much liquid by the time the glue is well swelled, take the glue out and put it in a saucepan over the fire, with a little water to keep it from burning. Mix the dissolved whitening thoroughly with the hand. Then add the melted glue, well mixing. This mixing needs to be done in a large vessel. Then pour into these ingredients a quarter of a pint of linseed oil, and on top of the oil pour sufficient muriatic acid (perhaps ten cents' worth) to cut the oil, stirring it the while. After this is done, add cold water enough to the whole, to thin it down so as to remove the yellow tinge, and make it a bluish white. Apply with a clean whitewash brush, one or two coats.

A POTATO MINE.—An Italian gardener, who has twenty acres of land near Bay View, says that the profit from potatoes raised thereon this season amount to \$9,000. The hills were three feet apart, and yielded three pounds each—total per acre 9,000 pounds. They were dug and brought to market in the early part of May and sold at five cents per pound, which makes the return per acre some \$150—total for twenty acres, \$3,000.

GOATS VS. RATS.—An Indiana farmer reports that after trying to trap, poison, and shoot the rats that overrun his premises, bought two goats and gave them the range of the yards and stables. Within a week every rat emigrated and staid away until the goats were sold, nearly two years afterward, when they all came back with their friends. A second edition of goats was procured, and since then not a rat has been seen on the premises.

A URICA paper declares that a Clearfield Fair consisted of a calf, a goose, and a pumpkin. It rained so hard, the first night, that the goose swam off, the calf broke loose and ate the pumpkin, and a thief prowling around stole the calf, and that ended the fair.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Wedns., A. M., July 3.

FLOUR—Market is quiet. We quote prices as follows:

Superfine, \$4.50@4.75; extra, in sacks, of 196 lbs. \$6.12 1/2@6.25; Oregon brands, \$5.25 @ \$6.12 1/2 in sacks of 196 lbs.

WHEAT—The market has been dull at declining rates since our last review. The range for new is \$1.55@1.60, and old, \$1.60@1.75 per 100 lbs.

The latest Liverpool market quotations come through at 12s. 3d. @ 12s. 4d. per cental.

BARLEY—Market dull. The range at close is new feed \$1.00@1.05; old feed \$1.50@1.65; old brewing \$1.50@1.65.

OATS—Market has been dull during the week under review. Sales ordinary coast to choice bay, at \$1.55@1.70 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.45@1.50 per 100 lbs. CORNMEAL—Is quotable at \$2.00@2.25 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs. RYE—Is quiet at \$1.80@2.00 per 100 lbs.

STRAW—Quotable at 50@60c per bale. BRAN—Is selling at \$17 per ton from the mill.

MIDDLINGS—For feed, are \$27.50 per ton from mills. OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Light sales at a range of \$8@15 per ton. HONEY—New is selling at 12 1/2@25 in the comb, and 12@16c strained; old in comb 8@15; do strained 8@12 1/2c per lb.

POTATOES—The supply of Mission and Half-moon Bay is not very heavy, and prices are fair. Sales of Red at \$1.85@1.90 per 100 lbs.

WOOL—The market is still very quiet and prices are nominal. TALLOW—Good quality of Cal. 8c. SEEDS—Flax 3c.; Canary, 5@6c.

PROVISIONS—California Bacon 11@12 1/2c per lb.; Oregon, 13 1/2@14 1/2c Eastern do. 10@12 for clear and 14 1/2@15 for sugar-cured Breakfast; Cal. Hams 12@13; Eastern do. 14 1/2@15c; California Smoked Beef, 13 1/2@14c. per lb.

BEANS—The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25@3.50; large \$3.37 1/2@3.50; Bayo, 4.00@4.25; Pink and Red, \$5.25@5.50.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Hickory, 12c; Brazil, 15c; Chili Walnuts, 15c; Italian Chestnuts 25c; Eastern Chestnuts, 15@20c; French Almonds, 25@30c; Princess Almonds, 35@40c; Los Angeles Walnuts, 18c; Coconutts, \$10.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows: BEEF—American, 1st quality, 7@8 per lb. do. 2d quality 6@7 1/2c; do. 3d do. 3@5c.

VEAL—Quotable at 7@10c. MUTTON—6@6 1/2c per lb. LAMB—Easier at 8@8 1/2c.

PORK—Undressed grain-fed is quotable at 6@6 1/2c. dressed, grain-fed, 8 1/2@9 1/2c per lb. POULTRY—Live Turkeys, 25@27c per lb.; dressed, 27@30 per lb.; Hens \$8.50@9.50; Roosters, \$8.50@9.50 per dozen; Spring Chickens, \$3.00@6.00; Ducks, tame, \$6.00@7.00 per doz.; Geese, \$15@18 per dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, may still be quoted at 22 1/2@27 1/2c, with a few choice lots at 30; New firkin is quotable at 25@27 1/2c.

CHEESE—New California, 10@14c; Eastern is jobbing at 14@15c per lb. Eggs—California fresh, are 37 1/2@40c per doz.; Eastern 15@20. Oregon, 25@26.

LARD—California 12 1/2@14; Oregon, none in market. Eastern in cases 14@14 1/2c; do in tcs. 11 1/2@12c. per lb.

FRUIT. Tah. Oranges, M. 40 30 50 00 Strawberries..... 14 @ 15 California do..... 12 1/2 @ 15 Blackberries..... 10 @ 15 Limes, M. 12 1/2 @ 15 Raspberries..... 10 @ 15 Aus. Lemons, M. 15 00 00 Gooseberries..... 10 @ 27 1/2 Cal. do. M. 15 00 00 Apricots..... 8 @ 12 1/2 Bananas, bunch 2 50 @ 3 50 Peas, bx..... 1 50 @ 2 00 Currants..... 4 @ 5 Figs..... 6 @ 9 Apples, bx..... 1 2 @ 2 50 Peaches..... 8 @ 12 1/2 Pineapples per oz. 6 @ 7 1/2 Plums..... 5 @ 12 1/2

DRIED FRUIT. Apples, per lb..... 9 1/2 @ 10c Pitted, do. 22 1/2 @ 25 Pears, per lb..... 9 @ 10 Raisins, do. 5 @ 15 Peaches, per lb..... 10 @ 11 Black Figs, do. 6 @ 8 Apricots, per lb..... 5 @ 10 White, do. 15 @ 20 Plums, per lb..... 5 @ 10

VEGETABLES. Cabbage, per lb..... 3 1/2 @ 14 Cucumbers per doz..... 15 @ 18 Garlic, per ctn..... 1 @ 12 Summer Squash, do. 1 @ 12 Rhubarb per lb..... 2 @ 3 Asparagus, per lb..... 1 @ 1 Green Beans, do. 2 1/2 @ 3 Tomatoes, per lb..... 3 @ 1 1/2 Sweet Peas, do. 8 @ 8 Egg Plant..... 8 @ 8 Green Corn per doz. 8 @ 8 Peppers..... 8 @ 10c Marrow at Squash per ton..... \$10 @ 15 Okra..... 4 @ 10c

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report an active inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—Prices are as follows: Burlap sacks 18c; Flour sacks 9 1/2@10 1/2c for qrs. and 14 1/2@15 1/2c for hlfs. Standard Gunnies are jobbing at 20@21c; Wool 75@80c; Hessian 40 inch goods 11c. per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS.—The demand for lumber in the interior

is light; city trade fair. Export trade is light on account of scarcity of vessels and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$16@17; do. surfaced at \$28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32 1/2; refuse do. \$21 1/2. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @2.75; Shingles \$2.50@2.75. Sugar Pine \$35 @45; Cedar \$27 1/2@37 1/2. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices is continued by the Lumber Dealers' Exchange.

Puget Sound Pine—

Rough, per M.....	\$22 50
Fencing and Stepping, per M.....	35 00
Fencing, second quality, per M.....	25 00
Laths, per M.....	3 00
Fencing, per lineal foot.....	3 c
Redwood—	
Rough, per M.....	22 50
Rough refuse, per M.....	17 00
Rough Pickets, per M.....	18 00
Rough Pickets, pointed, per M.....	20 00
Fancy Pickets, per M.....	30 00
Siding, per M.....	25 00
Tongued and Grooved, surfaced, per M.....	37 50
Do do refuse per M.....	25 00
Half-inch surfaced, per M.....	35 00
Rustic per M.....	40 00
Batten per lineal foot.....	3 c
Shingles per M.....	3 00
Sugar Pine, jobbing at \$55 for clear and \$45 for second quality.	

COFFEE—Costa Rica 20 1/2c; Guatemala 18c. Java 26c; Manila, 19 1/2c; Rio 19 1/2@20; Ground Coffee in cases 30c; Chicory, 12 1/2c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4 1/2c@5 1/2c, Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$8.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.15; do No. 2, \$1.50@1.62 1/2. Smoked Salmon, 7@7 1/2c per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 per ream.

PAINTS—White Lead 8@12 1/2c; Whiting, 2 1/2c; Chalk 2c; Paris White 3c; Ochre and Venetian Red each 3 1/2; Red lead and Litharge each 10 1/2@11c. per lb.

RICE—Sales of China No. 1 at 7@7 1/2c, and No. 2 at 6 1/2@6 3/4c per lb; Siam, quotable at 5 1/2@6 1/2c in mats; Carolina Table, 10@11; Hawaiian, 9@10c per lb.

SUGAR—We quote Cal. Cube at 12 1/2c; Circle A Crushed, 12 1/2c, and Granulated 12c; Golden C. 10 1/2@11c; Hawaiian 8@10 1/2c. as extremes per lb.

SYRUP—Prices may be given as follows: 57 1/2c in bbls, 60 in hf bbls, and 65c in kegs.

SALT—California Bay sells at \$5@5 1/4; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c, and Castile, 13@13 1/2c per lb.

TEA—Sales as below, less duty, which was taken off on the 1st inst. We quote Yonng Ilyson at 70c@1.15; Gunpowder, 85c@1.45; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in 1/2 lb. papers 37 1/2c@1.10; English Breakfast (Sunchong) 45c \$1.00; English Breakfast Congou, 50@85c; Basket 50@65c. per lb.

San Francisco Metal Market.

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

WEDNESDAY, July 3, 1872.

IRON.—		
Scotch Pig Iron, per ton.....	\$85 00	@ 85 00
White Pig, do.....	70 00	@ 75 00
Refined Bar, bad assortment, per lb.....	04 1/2	@ —
Refined Bar, good assortment, per lb.....	05 1/2	@ —
Boiler, No. 1 to 4.....	06 1/2	@ —
Plate, No. 5 to 8.....	06 1/2	@ —
Sheet, No. 10 to 13.....	08 1/2	@ —
Sheet, No. 14 to 20.....	09 1/2	@ —
Sheet, No. 21 to 27.....	09 1/2	@ —
Horse Shoes.....	7 50	@ —
Nail Rod.....	10	@ —
Norway Iron.....	5	@ —
Roller Iron.....	5	@ —
Other Irons for Blacksmiths, Miners, etc.....	5	@ 6

COPPER.—

Sheathing, per lb.....	40	@ 45
Sheathing, Yellow.....	40	@ 33
Sheathing, Old Yellow.....	12	@ 12 1/2
Composition Nails.....	28	@ 30
Composition Bolts.....	28	@ 30

TIN PLATES.—

Plates, Charcoal, 1X per box.....	19 00	@ 19 50
Plates, 1C Charcoal.....	17 00	@ 17 50
Roofing Plates.....	16 00	@ 16 50
Banca Tin, Slabs, per lb.....	50	@ 55
Flat Bar.....	15	@ 16
Drill.....	17	@ 18
Plough Points.....	3 75	@ —
Russia (for mould boards).....	12 1/2	@ —
QUICKSILVER.—per lb.....	55	@ —
LEAD.—Pig, do.....	10	@ 06
Pipe.....	9	@ 10
Bar.....	06 1/2	@ 07
ZINC.—Sheets, per lb.....	11	@ 11 1/2
Borax.—Refined.....	22	@ —
Borax, crude.....	5	@ —

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San Francisco Retail Market Rates.

WEDNESDAY NOON, July 3, 1872.

MISCELLANEOUS.

Butter, Cal. fr. do.....	25	@ 35	Flour sks, gr.....	10 1/2	@ 11
do Oregon, do.....	25	@ 30	do Hlf.....	16	@ 18
Honey, per lb.....	25	@ 30	Potato GY Bags.....	20	@ 21
Cheese, per lb.....	20	@ 25	Second-hand do.....	12	@ 16
Eggs, per doz.....	45	@ 50	Ezer Skins, per lb.....	15	@ 22
Lard, per lb.....	18	@ 20	Sheep skins, wln.....	50	@ 75
Sugar, cr., 7 lb. 100.....	10	@ 13	Sheep skins, plain.....	12 1/2	@ 25
Brown, do, per lb.....	9	@ 10	Goat skins, each.....	25	@ 50
Beet, do.....	12	@ 15	Dry Cal. Hides.....	18 1/2	@ 19
Sugar, Map, do.....	25	@ 30	Salted do.....	17 1/2	@ 19 1/2
Plums, dried, do.....	15	@ 20	Dry Mex. Hides.....	17 1/2	@ 19
Peaches, dried, do.....	20	@ 25	Salted do.....	8 1/2	@ 10
Wool Sacks, new.....	8 1/2	@ 85	Codfish, dry, do.....	10	@ 12 1/2
Second-hand do.....	8 1/2	@ 85	Live Oak Wood.....	10	@ 10
Wheat-sks, 22x36 15.....	15	@ 15	Tallow.....	8 1/2	@ 10

PRODUCE, ETC.

Flour, ex. per bbl.....	6 25	Barley, cwt.....	1 50	@ 1 65
Superfine, do.....	6 00	Beans, cwt.....	4 00	@ 5 00
Corn Meal, 100 lb. 3 00.....	3 50	Dry Lima Beans, per lb.....	8	@ 8
Wheat, per 100 lbs. 2 40.....	2 60	Hay, per ton.....	17 00	@ 25 00
Oats, per 100 lbs. 1 60.....	1 75	Potatoes per ctn.....	75c	@ 1 00

FRUITS, VEGETABLES, ETC.

Apricots, D.....	16	@ 18	Cucumbers, T.....	25	@ 30
Pine Apples, T.....	50	@ 60	Tomatoes, S.....	16	@ 18
Bananas, per bunch	50	@ 60	Cress, per doz bun	20	@ 25
Cal. Walnuts, D.....	20	@ 25	Dried Herbs, h.....	25	@ 50
Cranberries, D.....	10	@ 15	Green Peas, G.....	5	@ 5
Strawberries, D.....	12	@ 15	Green Corn, doz.....	25	@ 25
Raspberries, D.....	20	@ 25	Lettuce, per doz.....	12	@ 25
Cranberries, O.....	10	@ 10	Mushrooms, per doz	5	@ 20
Gooseberries.....	15	@ 25	Pickled do.....	5	@ 10
Cherries, D.....	15	@ 20	Okra, dried, do.....	50	@ 50
Oranges, per 100.....	20	@ 25	Pumpkins, S.....	3	@ 4
Lemons, per 100.....	50	@ 60	Parsnips, per bunch	20	@ 25
Limes, per 100.....	20	@ 25	Spinage, per basket	25	@ 50
Pigs, fresh, per D.....	12	@ 15	Salsify, per bunch	12	@ 25
Asparagus, w.....	12	@ 15	Turnips, per doz.....	15	@ 20
Artichokes, doz.....	50	@ 50			
Rubus, per lb.....	10	@ 12			
Beets, per doz.....	25	@ 25			
Potatoes, New.....	2	@ 3			
Potatoes, sweet.....	2	@ 3			
Broccoli, per doz.....	1 50	@ 2 00			
Cauliflower, T.....	1 50	@ 2 00			
Cabbage, per doz.....	1 50	@ 2 00			
Carrots, per doz.....	15	@ 25			

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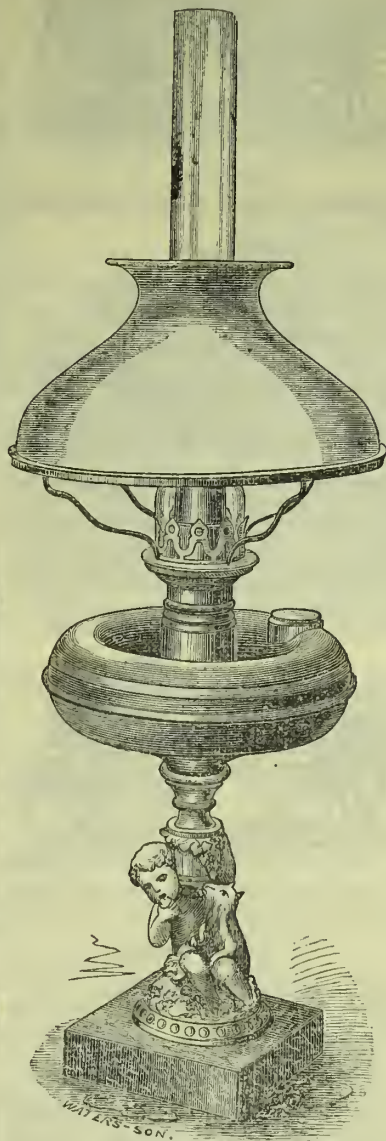
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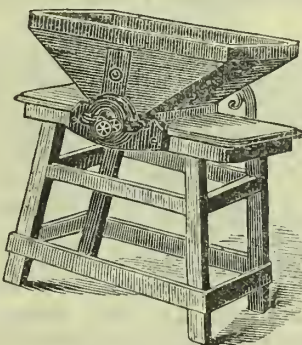
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How Crops Grow; by Johnson; A treatise on the chemical composition, structure and life of the plant, for all students of agriculture; with illustration and analysis. 394 pages; 1868. Post free from this office, \$2.50.

American Grape Growers' Guide; by Wm. Churton (N. Y.). 204 pages, 1852. Post free, \$1, from this office.

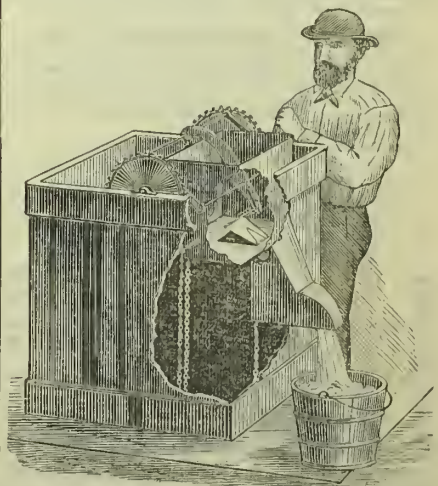
American Fish Culture, embracing all the details of artificial breeding and rearing of Trout, and the culture of other fishes; by Thad. Norris. Illustrated, 204 pages, 1868. Post free from this office, \$2.50.

How Crops Feed; Johnson, 1870. On the Atmosphere and the Soil as related to the nutrition of agricultural plants. Illustrated. 375 pages. Post free from this office, \$2.50.

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The inventor claims that his ELEVATOR excels any other apparatus that has ever been brought before the public for the purpose of raising water from wells. Its chief merits are: First—The water is obtained from the well in a purer and colder state, for the reason that it is drawn from near the bottom. Second—It is operated with the least difficulty, particularly in lifting a certain amount of water from any depth in a given time, as compared with any other mode. Third—It obviates all necessity for going down into the well in putting in the machinery, or for repairing the same, as such labor can be performed at the surface. Fourth—It can be easily taken out of one well and transferred to another. Fifth—It is less liable to get out of repair—but when repairs are necessary they can be easily made by any one; the action made by the Endless Chain and buckets keeps the well properly ventilated; there is no possibility for the person operating it (nor for a child) to fall into the well.

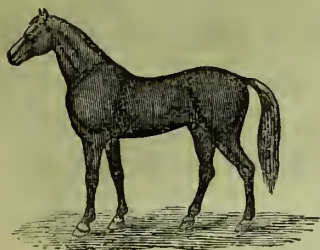
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THE IMPORTED
TROTTER STALLION

"NAUBUC."



Foaled in May, 1864, is seven years old, past; BLACK, with a small Star in the Forehead; fifteen hands, two and a half inches high, and weighed when five years old 1,000 pounds; sired by "Toronto Chief," by "Royal George," by "Black Warrior," by "Tippoo," by "Ogden's Messenger," a son of Imported Messenger, who was thoroughbred and out of the celebrated ten-mile trotting mare "Gipsy Queen," bred in Kentucky.

"NAUBUC"

Was bred by Thomas Vail, on Long Island, imported by DR. B. J. SMITH, arriving in San Francisco on the steamer "Colorado," Christmas Eve, 1868.

Terms for the Season:

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Good pastures will be provided at \$4 per month, with the best of attention, but accidents or escapes at the risk of the owners.

Any gentleman having a trotting mare, with a record of 2:40, or a thoroughbred mare, will be made welcome to the services of "NAUBUC" this season.

With the compliments of

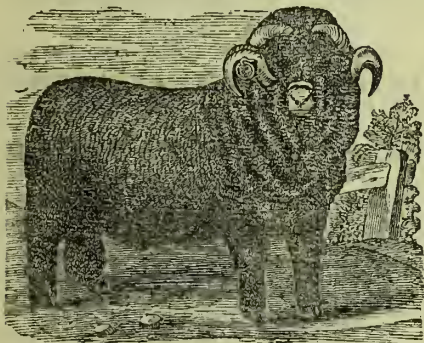
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637 California Street, S. F.

The horse is in charge of the experienced groom, NED CUNNINGHAM, at the Naubuc Breeding Farm, San Lorenzo, Alameda County.

Owing to the increased patronage that this horse is receiving, the season will be continued until the 1st of August.

Important to Wool Growers.



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FRENCH MERINO RAMS
FOR SALE BY ROBERT BLACOW,
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These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock.

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The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed. Persons living in Utah or Nevada, by giving timely notice, may have stock delivered on their way westward, thereby saving the cost of freight back.

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WOOL COMMISSION MERCHANTS,

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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies.

10v3-3m

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Manufacture all sizes of

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Which they offer to the trade at reduced prices; also the celebrated Obermann Self-Fastening Bed Spring.

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.

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23v3-6mbp

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The only Rake that gathers all the hay upon the roughest as well as upon the smoothest ground, free from dust and dirt, and does not roll and wad it together. Has extension teeth to preserve its holding capacity, giving it a very great advantage over those of stationary teeth.



First Premium at the State Fair. Every Farmer Should Have One.

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For use on Headers in cutting Grain thrown down by the Wind or Rain.

The Cheapest and Best in the Market.

Are Light, Strong and Durable, and can be adjusted to run at any inclination to the ground, as at D in cut. A party can save more than the price of a set additional, in cutting grain that is down, in one day's run.

Manufactures also Draper Aprons, Grain Carriers, Straw Carriers and Farming Implements generally, all of the best material and workmanship.

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Improved Pattern of Band Saws, equal to the high priced Eastern Saws in work, at one-half the cost. Warranted to give satisfaction.

All orders to

O. BONNEY, Jr., 221 Mission Street, San Francisco,

Promptly attended to.

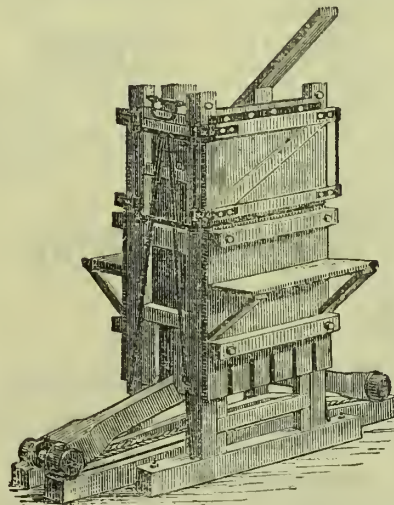
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State and County Rights for Grain Lifter sold by

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8v3-1am6m

THE EAGLE HAY PRESS.



Eagle Hay Press,

THE INVENTION OF J. A. MCGILLIVRAI, OF ILLINOIS, TO WHOM LETTERS PATENT WERE ISSUED JANUARY 10TH, 1865, AND JULY 24TH, 1866.

Several years were devoted by the patentee to the perfection of this powerful press, and its unprecedented sale in the East induces the proprietors to introduce it into California and the Pacific States.

All who have seen or used these Presses pronounce them superior to anything used heretofore. The power is applied by means of two levers, and it will be seen the power increases in ratio to the resistance; as the levers approach a horizontal position the power can scarcely be estimated. It is not only a powerful Press, but has the advantage of being Cheap, and also Simple, therefore not liable to get out of order.

Three men with one horse can bale from Ten to Fifteen Tons per Day, each bale weighing 250 to 300 lbs. It obviates all necessity by beating the hay before pressing. On account of its great power, it is well adapted for pressing Hydes, Rags, Wool or Cotton. When a bale is pressed and fastened, the follower runs down of its own weight, and the bales can be taken out on either side.

These Presses are now manufactured in San Francisco by the

Kimball Car and Carriage

MANUFACTURING COMPANY,

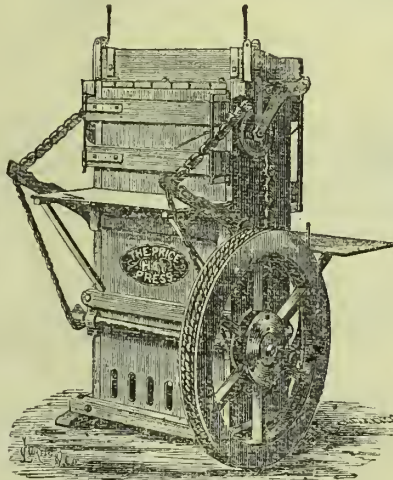
Who are the proprietors on the Pacific Coast, and will endeavor to have a supply constantly on hand.

Every Press made by them is WARRANTED to give satisfaction. Agents wanted.

PRICE, \$250.

18v3-3m

THE PRICE HAY PRESS.



(Sometimes called the Petaluma Press.)

Bales twice as fast as any other in the world.

Frequently bales over

Twenty Tons Per Day.

NEARLY 300 IN USE IN THIS STATE.

Eight years' use, and the sale of three hundred machines on the Pacific Coast in competition with the best Eastern baling presses, has proven this to be the most Extraordinary and Successful Machine of its Class ever invented. For the past six years it has baled nearly nine-tenths of the hay west of the Rocky Mountains.

Their wonderful capacity is due chiefly to the fact that they are not set up on stilts, with the machinery in the bottom, like every other Power Press in the United States, but the box for the reception of hay extends from the top of the Press clear down to the ground, thus giving room in a low, small Press, for a large bale.

DESCRIPTION AND PRICE LIST.

SIZE AND QUALITY.	HIGHT OF PRESS	WEIGHT OF BALE.	WEIGHT OF PRESS.	AVERAGE CAPACITY PER DAY.	PRICE AT SAN FRAN.
No. 1, Hardwood door timbers..	7 feet.	200 lbs.	2000 lbs.	13 tons.	\$300
No. 2, Hardwood door timbers..	8 feet.	250 lbs.	2400 lbs.	15 tons.	\$400
No. 3, nearly all hard wood....	8 feet.	250 lbs.	2600 lbs.	15 tons.	\$450
No. 4, nearly all hard wood....	8 ft. 8 in.	300 lbs.	3000 lbs.	17 tons.	\$500

These Machines are sold without discount, and for CASH ONLY.

Address the

PRICE PRESS COMPANY,

In care of I. J. Truman, 17 Front St., San Francisco,

Or C. H. Hubbard, 9 J St., Sacramento.

Send for Circular.

16v3-1f

1857. SEEDS. 1872.

15 Years Established.

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Garden,

Flower,

Field,

Fruit,

Tree and Shrub,

Grass and Clover Seeds,
Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound.

My annual catalogue is ready and will be forwarded on application FREE.

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50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

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Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good qualities.

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Maple Leaf Nursery.

Has constant varieties of ORNAMENT-GREEN and SHRUBS; also ment of Choice merous to Green House ers and Bulbs, and Flower Seeds of all kinds, are for sale by



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12v3-1f

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1858.

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1871.

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Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer.

4v3-1y

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FRUIT, PRODUCE,

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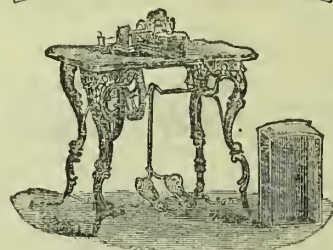
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HOUSE ESTABLISHED IN 1850.

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Will sew everything needed in a family, from the heaviest to the lightest fabric.

IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,

Than any other machine.

If there is a Florence Sewing Machine within one thousand miles of San Francisco not working well and giving entire satisfaction, if I am informed of it, it will be attended to without expense of any kind to the owner.

SAMUEL HILL, Agent,

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Send for Circulars and samples of the work. Active Agents wanted in every place.

Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

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FOR THE HARVEST OF '72, INCLUDING HOADLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers Kirby's Mowers and Reapers, Header-Wagons, Studebaker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Scythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

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150 Head Half Breeds.
50 Head Five-Eighths Breeds.
150 Head Three-Quarter Breeds.
150 Head Seven-Eighths Breeds.
60 Head Fifteen-Sixteenths Breeds.

Two Half-Blood Bucks of the celebrated Homeless Stock. The whole band will be sold for \$2,500 cash if applied for soon.

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TEN HEAD OF THOROUGHbred
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All Superior Animals,
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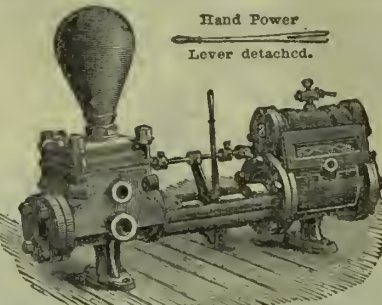
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BLAKE'S PATENT STEAM PUMP.

These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold in the Pacific States now for upwards of 4 years, and we are willing every one in use may be referred to; every Pump will speak for itself. They are constructed in the most simple style, and built in the most thorough manner—especially calculated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows: It is positive under any pressure. May be run slow or fast, as may be desired. Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility, having no cause for complex Rotary Arrangements to get out of order. Will start at any point of the stroke, and will discharge all the water of condensation. The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having no dead points, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand-work whatever. The Blake Pump is extensively used on Railroad and Steamboat Mechanics' Institute, San Francisco, and State Fair at Sacramento, as being the best Steam Pump on Exhibition. The agents have recently imported several of the largest-sized Mining Pumps for water works and deep mines, and will be pleased to refer parties to them; we claim for it, that it is the most simple and durable, and consequently the best Steam Pump ever built. For sale by TREADWELL & CO., Machinery Depot, old stand, Market, head of Front Street, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on them.



Fourth of July Celebration!

Headquarters of the Grand Marshal, No. 417 Kearny street.

A CORDIAL INVITATION

Is extended to all Military and Civic Organizations in this City and County to participate in the Celebration of the approaching Anniversary of American Independence. The heads of all organizations are earnestly requested to signify their acceptance of this invitation, and make immediate application at these headquarters, that they may be assigned positions in the line.

By order.

R. BEVERLY COLE,
Grand Marshal.

GAS LIGHT FOR EVERYBODY!

Coil Oil Lamps changed to Gas Lamps at a Trifling Cost, by merely Changing the Burner and Using Different Oil.



This valuable little invention can be attached to any coal oil lamp by any one in half a minute. It makes its own gas just as fast as it is required, and when the light is blown out, the gas ceases to be generated.

NO CHIMNEY IS REQUIRED.
The flame is as white as city gas, and produces no smell or smoke.
One Burner is equal to Six Candles, and COSTS ONLY ONE CENT PER HOUR.

This burner uses Petroleum Fluid, Danforth's Oil, Gasoline or Taylor's Safety Fluid. One burner sent to any address, postage free, on receipt of 50 cents currency or stamps.

WIESTER & CO.,
No. 17 New Montgomery street, S. F.

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To arrive in San Francisco about the first days of August, proximo, 350 Full Blood **SPANISH MERINO BUCKS AND EWES**, selected from the folds of the most noted sheep-breeders of six counties in Vermont—all fully pedigreed. Send orders to **MOODY & FARISH, CHRISTY & WISE, MILLER & CO.,** or to us, care of Morton House.

SAXE & JEWETT.

N. B.—Pure Blood Kentucky Cotswold Bucks and Ewes, now on hand in the city.
jul6-2t-16p

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ENGLISH AND CLASSICAL BOARDING SCHOOL. Boys prepared for the Universities or for Business. Healthy location. New and large Buildings. Military discipline. First grade Teachers.
References in San Francisco: Right Rev. Bishop Kip, Rev. Drs. Lathrop and Tyman, and numerous patrons.
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For Catalogues, giving particulars, apply to
1v4-6t
REV. W. F. TUCKER, Rector, Benicia.

WINE GROWERS, ATTENTION.

There will be a meeting of the California Vine Growers and Wine and Brandy Manufacturers Association at Sacramento on Thursday, the 18th of July, inst., at 3 o'clock P. M., for the transaction of business of importance connected with the Association and the Wine and Brandy interest generally.

All parties interested are invited to attend.
By order of the Board,
jul6-tt
I. N. HOAG, Secretary.

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Of any desired Shade or Color,
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It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.
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15v23-3m
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13v24-3m

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IMPROVED NOISELESS
Family Sewing Machine
IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium
At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.
Call on or address

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22v2-9m

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Headers, from 10 to 15 feet cut, made by Walter A. Wood at Hoosick Falls, N. Y., with all his IMPROVEMENTS, and having also DOANE'S PATENT, ADJUSTABLE REEL. No other Headers have these improvements. Take none but the HAINES' IMPROVED HEADERS made by Wood, especially for California.

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AS IMPROVED is the perfection of the Threshing Machine. We have them from 30 to 40 inch, with NEW FEED TABLE, LARGE SHOE, DOUBLE FAN, ELEVATOR, DOUBLE DISCHARGE, etc., made especially for the wants of California, after years of study. It has greater cleaning capacity than any other, and is EVERY WAY PERFECT. No other machine has ever equalled "The Russell;" none can excel it.

Treadwell & Co.

SAN FRANCISCO.
1v3-4t

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Successors to G. C. & R. H. Parks, Waukegan, Ill. Organized under the laws of the State of Illinois.

Importers and Breeders of

SHORT-HORNED CATTLE

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Stock of all kinds for sale at reasonable prices. Send for Catalogue giving full description. Address

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J. STRATTON or C. H. DWINELLE,
No. 3 Stevenson's Building,
Cor. Montgomery and California sts., San Francisco.
25v24-1m

Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 542, corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim.
12v3-3m

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G. R. JEWELL,
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FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

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For Sale at Wholesale or Retail by

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No. 317 Washington Street,

Send for a Catalogue.

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100 Barrels Guano for Sale,

In quantities to suit purchasers.

6v2-1y-16p

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Eggs for Hatching from Pure Bred Poultry

Carefully packed in handied boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



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Volume IV.]

SAN FRANCISCO, SATURDAY, JULY 13, 1872.

[Number 2.]

Alfalfa—Its Relative Value

A correspondent, two years in California, asks us why it is that Alfalfa—which he says is but one of the clovers—is so much more talked about as possessing a higher value for feeding and for hay, than the red and white common clovers of the Eastern States; and questions its superiority.

In reply we say, that we have never heard it claimed that alfalfa makes a pasture or hay, superior to either white or red clover, but its superiority consists in this, that whereas in California but a single cutting can be had from the common clover, or at best but a very light second crop in a season, the alfalfa will produce three or four cuttings, or more than double that from any other species of clover known; and if the quality is not quite equal to the red and white clovers, it certainly makes a very good feed, in far greater abundance.

Our long protracted season of uninterrupted sunshine, without a shower to moisten the vegetation of our hills from May to October, is a little too much for the red and white clovers to endure, they generally succumb to the drought months before the autumnal rains set in, unless occupying the alluviums of the rivers or are artificially irrigated.

Not so with alfalfa; it sends its roots down to water if they must go twenty feet to find it, and then if no permanent water is found, they are deep enough in the moist earth to secure in any season a green and perpetual growth the entire summer. This is the great advantage claimed for alfalfa over any other clover or grass in our exceedingly hot and dry climate. The quality of its hay is at least good; its close and vigorous growth when properly occupying the land, chokes out all weeds and other less valuable vegetation, and its culture is every year extending.

Fruits Without Flavor.

Among all people there are grumblers; some have, or think they have, a pretty good reason for grumbling, others have no reason at all; among the latter we class those who, having seen our splendid fruits, unequalled in size, and without a blemish from insect attack, are yet determined they shall not possess the merit of quality, so go grumbling along with the apparent satisfaction at least, of believing that with every other perfection, our fruits are "insipid" at best.

All must admit that our very climate with its preponderance of warmth over cold, is peculiarly favorable to the concentration of all the better qualities of fruits that have the saccharine quality as a basis; for nothing was ever better established at the East, than the fact, that the driest seasons produce the finest flavored and the best keeping fruits, though not as large as the fruits of wet seasons.

We here combine all the requisites of the best fruit producing countries. We have a sufficiency of moisture for fruit growth, with all the heat that fruits can bear; so there seems no good reason why our fruits and vegetables should be supposed inferior, merely because they attain extraordinary size and beauty. One thing we know, that all, yes *all*, who go from here to Eastern homes, sigh for the fair and luscious fruits they have left behind.

AMERICAN INSTITUTE.—The forty-first annual exhibition of the American Institute of the city of New York, will be open to the public on the 4th of September and the closing address will be delivered on the 13th of November.

Hollyhocks, Double and Mixed.

Who that was born and lived in a country town of Old New England, and in olden times, that does not recollect the still older, common garden flower the hollyhock, with its long, straight stems full of flowers of snowy whiteness, reaching above the rather extra high fence around that dear spot, the old garden, hallowed by so many of the dearer memories of childhood?

And then in after school-boy days, we well remember when the first red hollyhock was introduced, and then the yellow, and after that the dark crimson, but never the black. Finally another improvement appeared; instead of the single coralled flower, partially double ones were grown, and at last by careful culture, a flower so double was produced, as to be only second to the rose and fully equal to the magnificent dahlia for autumnal decoration; and from its stately growth, and the varied colors of its splendid spikes of intensely double flowers, may justly demand a place in every large garden or pleasure-ground.

We are particularly desirous of calling the attention of our farmers' wives and daughters, to this time-honored, old-fashioned but beautiful flower; give it a place along side the fence where it makes a perfect shield of beauty, or group the different colors, either mixed, or each color by itself, and a mound of brilliancy will result.

For the center of a large standing bouquet, there is nothing to compare with it, and by shortening the stems and stripping the lower ends of a part of their flowers, they make the richest outside bordering for a large bouquet that can be found among the whole of the great family of garden flowers. A dahlia is a single flower of great beauty; but the hollyhock is like the assembling together of hosts of dahlias upon a single stem.

Once established, being a hardy perennial, it will ever after maintain its position against the encroachment of either grass or weeds. Another year don't fail to procure of E. E. Moore, 425 Washington street, a variety of the seeds of the double and mixed hollyhock.

At an examination of specimen stalks of Judson's Branching Corn at Champaign, Ill., one stalk with five ears was found to have three of them glued on, and another with four ears was found to be made of parts of two stalks each with two ears.

Wine Stamp Duty.

By the new law which goes into effect immediately, all champagne wines, made by the injection of carbonic acid gas are declared "imitations of wines," and all such as are "doctored," meaning sherry, port, claret, etc., are declared to be "substitutes for wines;" both of which, the "imitations" and "substitutes," must, when sold in bottles holding a pint or less, bear a ten-cent stamp on each bottle.

To be exempt from the tax, wines must be made from the juice of the grape by the usual process of fermentation, and any addition to the same, for the production of the stronger wines, as practiced in wine cellars, makes it a wine that must bear the ten-cent stamp. Cordials and compounds made of brandies, whisky or other spirits, with sugar, cherries or other fruits or admixtures will be exempt from the operation of the ten-cent bottle stamp tax.

The effect of this law will be to give us a pure champagne wine by the old process of a skillfully managed fermentation, instead of by the injection process, which is simply the conversion of a dead flat wine of no character, into an imitation champagne. We shall either get the genuine article or the inferior one bearing the stamp, we shall know just what we are buying; and to make the matter a sure thing, all champagne wine makers of the genuine article can entirely dispense with the carbonic acid gas injecting machine now in their establishments.

If they are not willing to do this, it is strong presumptive evidence, that they manufacture the imitation wines and as such must be stamped, and if not stamped, that they are wilfully defrauding the revenue. The only fear is, that the imitation stuff can be manufactured so cheaply as to pay the stamp tax and still leave a wide margin of profit; but the fact that it must always bear the mark of inferiority upon its label, consumers will know just what they are buying if they buy at all.

We will now be able to see whether all the best wines called champagnes are really the product of the San Francisco wine cellars or whether the Sonoma, Napa, Sacramento and Natoma vineyard cellars are not also the producers of some good wines.

THE English robin, a bird totally different in size, color and habits of our brave, soldierly red-breast, is being imported into the United States for acclimation here.

Soils—How Exhausted.

We frequently see in Eastern agricultural journals long dissertations on the subjects of deep and shallow plowing, and in most cases the attempt is made to show that the general deterioration so common to most of the soils of those long cultivated parts of the country, is owing to a persistent course of shallow plowing.

It is a mistake to imagine that this alone has produced the unwelcome result, rendering large districts of country unfit for the culture of wheat, which fifty years ago gave an average of from 15 to 20 bushels to the acre. If shallow plowing has had the effect to lessen the annual yield from fields devoted to constant tillage, without the return of some fertilizer—which we will not dispute—it might be inferred that we believed had the field been deeply plowed, there would have been no deterioration.

We believe no such thing; because experience has shown that though deep plowing serves almost invariably to increase the product, it is equally at the expense of the fertility of the soil; the only difference is, the one, by shallow plowing and half a crop, has exhausted the soil to half the depth that another field is by a system of deeper tillage. So that without some renovating process or the application of fertilizers, or something besides simply deep plowing, though larger crops may be procured for the time being, it is only at the expense of a deeper exhaustion of the soil.

Injudicious Cultivation.

It is idle then to harp upon the favorite theory of many, that shallow plowing has alone caused the sterility too often met with in the older sections of the Union. It is an injudicious cultivation quite apart from either shallow or deep plowing that produces barrenness. No soil however deeply plowed, can forever maintain its pristine fertility under constant cropping, without a return in some measure of the elements, that the crop produced, extracts therefrom.

Upon this important point in good husbandry, too little attention is paid. Shallow plowing and constant cropping without manuring, has very aptly been termed the "skinning" process; but deep plowing under like circumstances takes not only the "skin," but the very tallow from the soil. We shall continue our remarks on the rapid impoverishment of the cultivated lands of California, in future numbers.

Wheat Prospects.

The Commissioner of Agriculture in his monthly Report for June, on the condition of the wheat crop of the United States, sums up the matter as follows: Area, 98 per cent. of last year's; condition, 6 per cent. below average. Last year's crop was estimated at 230,000,000, and the yield at 11½ bushels per acre—say four and one-sixth per cent. below average. The returns therefore indicate, in the first week of June, a prospect of 220,000,000 bushels.

CHERRIES, EARLY AND LATE.—In New York and New England, we used to think we were doing well to get the Mayduke ripe, even as early as the last days of May, and more frequently by the 10th of June. The latest, were from the middle to the last of July.

Here we get Bauman's May as early as the 10th of May, and the Belle Agatha and Ramsey's Late, through the whole of August and extending into September.

Why do not more of our fruit men turn their attention to cherries.



DOUBLE HOLLYHOCK.

CORRESPONDENCE.

Meteorology of San Joaquin Valley.

EDITORS PRESS:—Observations on temperature and rain in this part of San Joaquin Valley, for the PRESS, are now completed for the first half of the current year, with the following

Results:

1872.	Average Temperature.				Highest Temp.	Lowest Temp.	Rain, Inches.
	7 A.M.	2 P.M.	9 P.M.	Mo. Mean			
January....	40.20	62.30	46.15	46.21	61	27	2.38
February....	44.68	59.11	48.89	50.86	67	34	2.42
March.....	46.16	63.60	50.40	53.38	70	36	1.45
April.....	48.21	66.40	50.80	55.13	77	36	0.97
May.....	56.45	78.39	58.65	64.49	90	40	0.00
June.....	64.57	86.86	65.25	72.23	110	82	0.18

June has been marked by a few days of excessive heat. On the 21st, at 2 p. m., the mercury in the shade stood at 106°; on the 22d, 110°; the 23d, 104°. But let none of your readers for this reason dread the extreme heat of a San Joaquin Valley summer, even in June. These three were the only days in the month when the temperature was above 100. The highest on the 24th was 86, and the greatest heat the remaining six days ranged from 74 to 88 degrees. At 9 p. m. on the 27th, the thermometer stood at 58, or a difference of 52 degrees from the hottest hour of the 22d. Yet we hear of no one who experienced any bad effects from this remarkable range of temperature in five days. Such a

Heated Term

Usually comes but once each summer, and lasts only a few days. It generally occurs within two weeks after the summer solstice. A reason for this can be seen in the fact that on June 21st, and a short time before and after that date, the sun's rays are more nearly perpendicular to the surface of our valley than at any other period of the year. Its heat is then naturally most intense to us. But as the sun lingers for some time near the same point in the heavens, this causes the heat to accumulate, if one may be allowed to so express it. Consequently, our warmest weather is likely to occur within a short time after the solstice.

In keeping with this principle, our greatest heat for several years past has been as follows:

In '69, June 26th, 100 degrees; 27th, 106; 28th, 104; July 1st, 107. In '70, July 1st, 107; 2d, 110; 3d, 102; 4th, 106. In '71, June 29th, 107.

In the present instance, it came just as

Old Sol Paused

In mid-heavens, when he turned back from his farthest point north, and gazed upon the bountiful crops with which his genial influences have this year blessed our valley.

Well might his enthusiasm have grown warm as he looked for the last time before turning southward, upon our ripe and waving grain fields, and the huge stacks of wheat and barley rapidly going up in our grain districts now scattered from Kern river to Mt. Shasta, and at intervals filling all the space between the Sierras and the Coast Range. But if his enthusiasm always waxes so warm as he gazes on this glorious sight, once a year is quite often enough for such hot, burning glances.

Though the heat of the 22d was as great as any we have experienced here for four years, the latter part of June has been quite cool. Indeed, parts of our mornings and evenings have been almost too cool to be pleasant. But these cool nights bring us the most refreshing sleep, and strengthen us to bear the heat of the day without prostration.

Our intense heat cannot last long at any one time, for by one of Nature's great laws of compensation, it is its own corrective. When our valley air is so intensely heated, it becomes very rare, and rises rapidly to a great height. Then the cold, dense, heavy air from the mountains on each side of us, descends to fill this comparative vacuum, and our air is chilled again and purified.

It enables the Pacific Ocean, also, to contribute to our comfort and health. For its cooler air rushes as a brisk sea-breeze into our valley through the Golden Gate, as well as over the passes and crests of the Coast Range. This is proved by the special prevalence of strong northwest winds, soon after all such heated terms. In this way,

Our Mountains and Oceans are our Ventilators.

These are some of the rare advantages of our climate—are some of the correctives which make our inland valleys inhabitable by enabling our people to endure such high degrees of heat, amounting in the sun even to 140° Fahrenheit, and yet enjoy the most perfect health, and do as much hard work, perhaps, as any other people in the world.

As regards rain, the 0.18 of an inch in June makes the entire amount, measured at this point, for the season, 15.92 inches. If to this amount we were allowed to add the additional

rain which fell from ten to twenty miles east of us, it would probably swell the entire rainfall for this district of San Joaquin valley to more than seventeen inches.

It is probable that could we take the average of the rainfall measured at Sacramento, Stockton, Grayson, and here, the past season, it would amount about to the average annual rainfall at Sacramento since 1849, that is, nineteen inches. But not knowing the full amount that has fallen at each of those points, we cannot give it exactly. Will not some one of your readers favor us with the exact amount which has been measured at each of those points, now that we can expect no more rain until October. Our mutual observations on the amount of rain for the season of '71-'72, are now ended, and it is only by change of our thoughts and conclusions, that we may hope to accomplish the most useful results.

J. W. A. W.

Turlock, July 1st, 1872.

Colfax Correspondence.

EDITORS PACIFIC RURAL PRESS:—Being in regular receipt of your valuable paper, I deem it a duty to add my testimony to that of your numerous appreciative patrons in regard to its merits and usefulness; and although a mechanic, being reared on a farm, I have always retained a deep interest in the cultivation of the soil from my boyhood; and consequently can hardly conceive how any man can be really contented and happy, and feel that he is living aright, without at least a garden spot to improve and beautify with trees, plants, flowers, etc.; much less, how any one following that branch of industry as a business can invest four dollars with more pleasure and profit to himself (and family, if he has one,) than by subscribing for your paper; among other interesting features of which are the communications of correspondents from different sections of the State, especially those from the ladies, prominent among whom is your "charming writer," "Mary Mountain," who evidently possesses superior ideas of what constitutes a convenient and pleasant home, to many of our sex or a majority of her own. Such often advance ideas of economy and comfort that the opposites, in their greed for wealth, are apt to ignore; this interchange of ideas, together with intelligent questions of interest propounded and ably answered through correspondents, or editorially, creates an additional interest by giving a spicy variety to your paper. But a small proportion of the soil in this vicinity is adapted to agricultural purposes; cutting and hauling railroad wood and mining being the principal business. There are, however, some very good ranches, where grapes and fruit trees thrive exceedingly well, and with the same amount of care grow far more thrifty than those grown in the Eastern States. As far as my observation extends there will be a fair crop of grass, wheat and apples in this vicinity, a heavy one of grapes, a few pears and plums, but the peach blossoms were nearly all killed by the frosts.

For the past few weeks, from one to three droves of cattle, sheep and horses have passed here, over the toll road from Colfax to Gold Run, on their way to the summit and vicinity, where they will be herded until fall, when most of them return by the same way to the valleys; such times of transit make business appear quite lively along the route.

It may not be uninteresting to many of your readers to learn that our neighboring village of Gold Run claims the pleasure and honor of sustaining a very good brass band, among the members of which are some of the prominent business men of the town, including the postmaster, collector and others. The citizens have contributed liberally towards its support, having furnished the instruments; and at their out-door concert, Monday evening, June 10th, their talented leader and teacher, Mr. A. N. Davison, met with an agreeable surprise, by being invited, with his band, to the Town Hall, where the citizens had gathered, and in appreciation of his services presented to him, through Mr. M. Lowell, a beautiful gold watch and chain, valued at one hundred and fifty dollars; and although taken by surprise, the presentation speech was responded to by Mr. D. in a feeling and appropriate manner; after which the Band performed a few excellent pieces, which closed an entertainment alike pleasant and agreeable to all concerned.

Evening out-door concerts, by a good

brass band, afford such a cheap and agreeable entertainment to citizens generally, that where ordinary musical talent is to be found, it should be encouraged by the citizens of every town; for where we find a brass band, a railroad, and "last, but not least," a printing press, we usually look for corresponding enterprise in other departments, and are seldom disappointed.

I. A. H.

Colfax, Cal., July 1st, 1872.

Alkali Soils.

EDITORS PRESS:—Being a subscriber and reader of your valuable paper, I see something in nearly every number about reclaiming what is known as alkaline soil in California. We see it stated in the papers that by sowing sugar beets, planting potatoes, and by applying coarse manure and irrigation, these soils can be reclaimed and rendered productive of wheat, barley, etc. Now Mr. Editor I have been a farmer in California twenty years, have had alkaline soils to contend with, have tried the above mentioned modes of reclaiming and have never had the satisfaction of seeing one foot of alkaline soil reclaimed, and I will pay \$500 for one acre in Bear Valley of pure, genuine alkaline soil that has been reclaimed by the above mentioned processes.

Now after twenty years of experience with these soils, and having tried sugar beets, potatoes, etc., I am well satisfied that those who live fifty years hence will see the same barren alkaline spots as barren and unproductive then as to-day. Now Mr. Editor after twenty years of observations and experience I am fully satisfied that these soils are fed from beneath by seepage. Now by digging or boring to water on these soils, which will be found from fifteen to twenty-five feet from the surface, you will find the water strongly impregnated with alkaline matter, and is constantly rising to the surface and supplying the soil with fresh alkaline matter.

And now Mr. Editor when I look over these alkaline spots that have been plowed, cultivated, flooded, etc., for the last twenty years to my knowledge, and are just as bare and unproductive to-day as they were twenty years ago, is it not enough to satisfy one that some other process will have to be adopted if these soils are ever reclaimed and rendered fit for the cultivation of wheat, barley, etc.

A. R. K.

Bear Valley, June 30, 1872.

Scab in Sheep.

EDITORS RURAL PRESS:—I herewith send you for the benefit of sheep-raisers, a certain remedy for scab, long used, and with most satisfactory results in Australia. It is not only the cheapest, but in my experience, the best remedy in use.

The following properties may be increased or diminished, to suit the size of the flock:

Twenty lbs. flour of sulphur; ten lbs. quick lime; twenty gallons cold water. Put these into a boiler, and keep mixing by constantly stirring until they boil; and then keep boiling and stirring for about ten minutes, or until an orange-tinted solution supervenes. Then mix one gallon of this solution, with three gallons hot water, heat your dip or bath to 100° or 114° Fahrenheit, plunge your sheep over head in it for about one minute, and when your sheep is dry, the cure is complete. My little flock suffered terribly with this disease, until about one year ago, when I saw a notice of this remedy in some agricultural paper, and tried it—using for my bath, a large iron kettle, with a dripping board on one side, to stand the sheep on as they were taken out, economizing the solution; and the one bath effected a perfect and entire cure.

I need not suggest to sheep-raisers, that this remedy is better applied soon after shearing; and the greatest inconvenience, the effect of the lime and sulphur on the hands. J. N. B.

Healdsburg, July 1, 1872.

A Root in the Wrong Place.

EDITORS RURAL PRESS:—I am desirous of asking a question that occurs to me a dozen times a week. Why is it that "beet sugar" is spoken of as beet root sugar by so many able writers and journalists? According to Webster, and he is *Hoyle* to scholars, there is no such word compound or otherwise as beet-root. So far as I can determine by experience and knowledge which has been to plant, weed, cook and pickle beets for a number of years, a beet is a root the best you make of it, and no one has any idea that sugar can be made from the leaves, so that it must not of sheer necessity be made from the beet. You people that publish newspapers, and only eat a beet now and then, as some kind lady friend cooks it for you, please inform us why you all say beet root sugar? Would you say cane stalk sugar, potato root starch, onion root syrup, etc., etc.? I think the root is altogether out of place in the name of the sugar. Your lady friend,

SUGAR BEET.

Abuse of Anæsthetics.

[Written for the PRESS.]

The abuse of anæsthetic and soporifics, such as ether, chloroform, hydrate of chloral, opium in its various forms, and other similar medicaments, is becoming so serious as to attract attention and demand reform.

To one who is suffering from constant pain, or pure inability to sleep, the knowledge that relief may be at once obtained by the use of a drug, is doubtless a very strong temptation. But it should be borne in mind that pain and sleeplessness are only symptoms. They are nature's admonitions of the existence of disease; and to stifle them is like removing a sentry, because it disturbs us by a cry of danger.

A little thought will show the mischief likely to ensue from the use of these drugs. All pain exists in the nerves, and medicines which relieve pain can only do so by acting on the nervous system. The nerves are the warders of the body and the danger is, that they will either be made insensible of performing their offices, or will be overstimulated, and thus a new disease will be brought on more serious than that which previously existed.

The discovery of anæsthetics has been truly called one of the greatest boons that has ever been conferred on suffering humanity. But in proportion to their value is their liability to abuse. Their proper use is in surgical operations, and as a temporary appliance for relieving pain until other methods of subduing the disease from which the pain proceeds can be employed to advantage. They should very rarely be used except under the direction of a medical man.

Physicians are always glad to employ any proper means to alleviate a patient's sufferings, and when they dissuade from the use of an anæsthetic or other medical agent, we may be sure that it is because experience has satisfied them of its injurious effects.

J. H. W.

Stamp Duties Abolished.

The amendments to the Internal Revenue Act during the last session of Congress abolish nearly all the stamp duties after the 1st of October next. The tax of two cents on checks, drafts, and orders is still retained, but the following instruments

No longer Require Stamps.

Contracts for insurance against accidental injuries. Affidavits.

All agreements or contracts or renewal of the same.

Appraisements, of value or damages, or for any other purpose.

Assignments, of a lease, mortgage, policy of insurance, or anything else.

Bills of exchange, foreign, inland, letters of credit, or anything of that kind now taxed by stamps.

Bills of lading and receipts, in the United States or for anywhere else.

Bills of sale, of any kind.

Bonds of indemnification, of any kind.

Bond of administrator or guardian, or anything that has the name of bond on it and now taxed by stamp.

Brokers' notes.

Certificates of measurement of anything.

Certificates, of stock, profits, damage, deposit, or any other kind of certificate now taxed by stamp.

Charter or its renewal or a charter party of any kind.

All contracts or agreements.

Conveyances and any part of the work of conveying deeds.

Endorsement of any negotiable or not negotiable instrument.

Entry, for consumption, warehousing, or withdrawal.

Gaugers' returns.

Insurance policies, contracts, tickets, renewals, etc., (life, marine, inland and fire.)

Lease. All through the lease list is abolished.

Legal documents. Writ or other process, confession of judgment, cognovit, appeals, warrants, etc., letters of administration, testamentary, etc.

Manifest at Custom House, or anywhere else, or for any purpose.

Mortgage, of any kind.

Passage ticket, to any place in the world.

Pawners' checks.

Power of attorney for any purpose.

Probate of will, of any kind.

Promissory note for anything.

Protest of any kind.

Quit claim deed.

Receipt. Now generally exempt, and if included in present law in any case, will be hereafter exempt.

Sheriffs' returns.

Trust deed.

Warehouse receipt.

Warrant of attorney.

Weighers' return, of any character.

MECHANICAL & SCIENTIFIC.

Recording Musical Notes.

Each of the many vibrations that have occurred in the production of a musical note can be recorded so as to be visible to a moderately large audience, by the use of no other apparatus than a piece of chalk and an ordinary blackboard.

The peculiarly shrill, disagreeable sound often heard when a slate pencil or piece of chalk is drawn rapidly over a slate, is well known. It occurs when the contact between the pencil and the slate is not continuous. Each time the pencil touches the slate a slight tap is produced, and these taps, following each other rapidly, liuk themselves into a sound more or less musical. They may be legibly recorded as follows:—

An ordinary chalk crayon is held loosely in the hand near one end, and inclined so that the acute angle made by the other end with the surface of a blackboard is about 30°. If now the crayon be pushed in the direction of the obtuse angle, it will be set into rapid vibrations, and, striking against the board at nearly equal intervals, will produce a musical note. At each contact a legible mark is made on the board. By giving the chalk a uniform velocity, the pitch of the sound is kept quite constant, and the exact number of vibrations corresponding to any particular note, can be readily ascertained by counting the marks impressed on the board in a given time.

A very little practice will enable one to produce these effects quite readily. By altering the inclination and pressure, the pitch of the note can be varied at will, and the class or audience enabled to see the cause of the variations in notes of different pitch. In many cases, by a close inspection of the marks, it will be seen that each of them has been formed by two or more separate marks, one of which is generally more prominent than the others. This corresponds to the fundamental tone of the sound, the others to the overtones, and thus we have a visible proof of the cause of the difference in quality observable in certain notes of the same pitch. By considerable practice, the variations in the pitch of the notes can be obtained so readily that a tune may even be evoked from the board, which after the performance will contain a physical analysis of the individual notes.

STAR DEPTHS.—The mind of man utterly fails to realize the immensity of space, and no one unaccustomed to the use of the telescope can have any adequate idea of the difference presented by the heavens when viewed by the naked eye, even upon a clear night, and the scene which is disclosed to the eye and mind of the astronomer. How difficult it is to realize that each star in the solemn depths of the universe is a sun like our sun, but separated one from each other and our own by distances almost beyond the power of man to compute!

Only about 3,000 stars can be distinctly seen and counted by the naked eye, while an ordinary telescope reveals the presence of something like 350,000. Herschel's great 18-in. instrument, it is estimated, shows 180,000,000, while the great Rosse telescope, by its vast penetrating power, is supposed to open up to our vision not less than 700,000,000! And yet when the whole heavens is swept by this telescope, we have only penetrated a distance into space from our standpoint on this globe, which, when compared to the immensity beyond, is no more than the space occupied by the room where we write or read is to the immensity of depth penetrated by the last mentioned instrument!

FUTURE ECLIPSES OF THE SUN.—Mr. Robert T. Paine communicates to *Silliman's Journal* a list of eclipses visible in the United States during the remainder of this century. The first central eclipse will be that of September 29, 1875, which will be annular in part of the State of New York and in four of the New England States. The duration of the ring on the central line will be three minutes thirty-nine seconds. At Boston it will be only two minutes twenty-nine seconds. The belt of country over which the annular eclipse will extend will be 110 miles wide. Within it are situated the observatories of Hamilton College, Albany, Harvard University, Amherst College, and Dartmouth College. The first total eclipse will be that of July 29, 1878, when the shadow of the moon will pass over British Columbia, Montana, Colorado, Texas and Cuba. At Denver, Colorado, the eclipse will be total nearly three minutes.

DETERMINATION OF HEIGHT OF AURORAS.—Dr. J. G. Galle, director of the observatory at Breslau, celebrated as being the first to recognize the planet Neptune in the telescope, has lately given a new method of determining the height of the aurora. It is founded upon the hypothesis that the rays which form the auroral crown are parallel to the magnet pole. The deviation from apparent parallelism he considers due to parallax, and thus calculates the distance of the rays. From a number of observations made by himself and Dr. Reimann he finds that the direction of the rays in the aurora of February 4, deviated from the magnetic zenith by from 3° 6' to 10° 2'. He thus finds for the different rays heights varying from 150 to 280 miles.

Improved Iron Processes.

Scarcely a month passes without the announcement of some alleged or real improvement in the methods of smelting iron, converting iron into steel, or working up iron into the various forms called for in the consumption of that important article.

A new and cheap alloy of iron, called Sterling Metal, lately produced, is reported to be harder than cast-steel, and, if so, will come into use for edge tools. The process of converting pig iron into wrought iron, in a puddling furnace worked by machinery, is coming into favor, saving much hand labor. The conversion of cast iron into steel by puddling, at one operation, is also becoming important. The slag of iron foundries, heretofore valueless, is now pulverized and mixed with lime, to make bricks, artificial stone, and ornamental articles of many kinds. In an Iron smelting furnace lately tried at Hudson, New York, the smoke passes out not at the top, as in the ordinary furnaces, but through flues nine feet below the top, and it is said that there is a saving of twenty-five per cent. in the quantity of coal required to make a ton of pig iron. Nearly every periodical devoted to the industrial arts tells of late progress of inventions in the working of iron.

MECHANICAL PROGRESS.—The surprising advances made by the arts at the present time—advances which are made at a rate far exceeding that of former times—is readily accounted for by the reflex action which each invention has upon others. Taking the steam engine as an example, it will readily be seen that if the most perfect drawing of one of our modern steam engines had been presented to the mechanics of the seventeenth century it would not have enabled them to construct one like it. The planing machine, the slide-lathe, the power punch, the shears, and numerous other machines had to be invented before the modern steam engine could become a possibility. To them the boring out of a true cylinder, six feet in diameter and eight feet long, would have been an utter impossibility. Our modern steamships, locomotives and factories depend for their success not only upon the invention of steam engines and special machines, but upon the ability of our machine shops to construct these engines and machines after they have been invented.

MAMMOTH CAR.—Among the mechanical novelties to be seen at the Grand Central Depot, in New York, is a steam railway car 70 ft. wide, which travels on a track of corresponding width. This great vehicle is made in the form of a low platform car, and the track on which it runs is provided with four rails, extending from Fourth Avenue to Madison Avenue. The car is used for the lateral transfer of passenger cars from the main tracks of the Hudson River, Harlem and New Haven Railways to the various side tracks, thus avoiding the use of turntables. The car is propelled by steam, the engine and boiler being contained within a sheet-iron house carried on one side of the machine. The cars to be transferred are run upon the great car; steam is then turned on and the huge machine trots off with its burden with as much ease as a horse draws a buggy. The machine is supported on eight wheels, arranged on independent axles. There are in addition four driving wheels arranged upon one axle.

GERMINATION—ITS RELATION TO LIGHT.—The theory of the germination of plants, which has been heretofore admitted requires that the germinating seed be excluded from direct sunlight. Late experiments appear to establish the fact that, while exclusion from the luminous rays of the solar spectrum is necessary to the healthy germination of seeds, yet the chemical or actinic rays are indispensable to the process. These penetrate much deeper into the soil than do the luminous rays. The exclusion of the chemical rays, and not the absence of oxygen alone, is assumed to be the cause of seeds failing to grow when buried too deeply in the earth. Will our agricultural colleges settle this question by careful experiments? Let us have all that can be known of the mysteries of plant life.

APPROPRIATION FOR ASTRONOMICAL PURPOSES.—The General Appropriation Act passed at the last session of Congress sets aside \$75,000 for the establishment of an astronomical base, and the continuance of military and geographical surveys and explorations west of the 100th meridian of longitude. These surveys and explorations are under the charge of Lieutenant George M. Wheeler, who headed the expedition that explored a line last year from Elko to the Mexican Boundary. He was to start from Washington about a week ago to continue his work. Much is expected from his explorations, and many inquiries have been made for printed copies of his last report, but the Government printing office has not yet turned them out.

CHANGE OF HABIT.—*Loranthus macranthus* of New Zealand, parasitic there upon trees of *Rutaceae* and *Violaceae*, is deserting these in favor of trees introduced by the European settlers, such as hawthorn, plum, peach, and especially laburnum, which was introduced as lately as 1859. Its flowers are abundantly visited by the European honey-bee.—*Garden.*

THE BALTIMORE TUNNEL.—Among the important tunneling operations now in progress, is the railroad tunnel now being constructed under the city of Baltimore. The necessity of such a work must be apparent to every one who has had occasion to pass from one railroad terminus to the other on the opposite side of that city, by the slow horse-car conveyance now in use there. This tunnel will be 1½ miles in length and is being pushed forward as rapidly as the nature of the work will admit. The work of excavation is being carried on at the rate of about 100 feet per day, at eleven different points.

The tunnel for the most part, passes under the streets. The excavation goes on from the surface; permanent side walls are constructed, the excavation arched over, and the road way or other earth area replaced. Over 1,800 feet had been completed and arched over, up to the middle of June.

ADVANTAGE OF LABOR-SAVING MACHINERY.—In no way has the beneficial effect of labor-saving machines in improving the condition of workmen been better exemplified than by the application of the sewing machine to the manufacture of shoes. The workmen of Lynn, Massachusetts, who in 1862 were earning 10 dollars a week without the assistance of the leather sewing machine, are now, it is reported, earning 50 dollars a week with the aid of this useful apparatus. The inventor, who in 1862 was threatened with mob violence, is now considered by the workmen as their greatest benefactor. Within the last ten years the town of Lynn has doubled in population and taxable property, and it is estimated that 44,000,000 dollars have been saved to the whole country by the invention of the sewing-machine as apparatus as applied to the manufacture of articles of leather.

CAR STARTER.—William M. Stratton and William E. Stratton, of West Troy, N. Y., have recently patented an improvement in apparatus for storing up, in a spring or springs, the power expended in arresting the motion of the car, to be used in setting it in motion again, and it consists in having the drum, which is employed to wind up the tension cord of the spring, made with such devices and arranged in such a manner that it may be locked and held after being detached from the gearing connected with the axle to wind it up, so that the car may be allowed to run awhile before the power of the spring is applied; thus making the apparatus capable of retaining the power stored up in the spring while the car is going down a descending grade and using it on an ascending grade, the car running free between the grades. The invention also consists in certain novel devices, for thus detaching, holding, and locking the winding drum.

A PRESSURE GAUGE FOR GUNS.—The principal suggested by Tresca's experiments on the flow of solids has been applied in practice for determining the pressure produced in the bore of large guns. A cylindrical hole, bored into the gun, is filled by a block of lead, supported behind by a steel block, through which is a small cylindrical hole. When pressure acts upon the lead, a portion of it is forced into the hole in the steel block. By estimating the volume of lead found in the cavity after a discharge, a means of measuring the pressure exerted within the gun is given.

AN ALLOY TO UNITE IRON AND BRASS.—C. Mene communicates the fact that an alloy, composed of 3 parts of tin, 39.5 copper and 7.5 parts of zinc, is very well adapted for joining brass or copper to iron and steel. The author suggests likewise the propriety of increasing the proportion of zinc in the mixture to 10 parts, since the heat of the smelting operation volatilizes enough of it to bring it down to the amount named.

STRETCHING OF CHAINS.—Professor Trowbridge, of Yale College, has stated that at the Novelty works, N. Y., he once made a chain a thousand feet long, to be used for pulling a load of ten tons up an incline five hundred feet long and one hundred feet high. In one year he took out, little by little, sixteen feet of slack caused by stretching. The chain got stretched out in time, though, and then did not alter.

PETROLEUM IN SAN DOMINGO.—Prof. Gabb finds a locality, the only one in the Dominican Republic, of bituminous products on the island of Santo Domingo. The spot "reminds him strikingly of the California petroleum springs, not less in the existence of oil, pitch and gas, than in the usual broken-down steam engine and fragments of artesian well tools lying scattered about."

COPPER IN COCOA.—Careful chemical analyses show that cocoa and chocolate always contain a small percentage of copper. The husks of the cocoa have been found to contain as high as 0.025 per cent. of copper, while the kernel of the bean only contained 0.004. Samples of chocolate contained 0.0125 of copper.

Boston is likely to be the first city in the East to invest in a narrow-gauge railway. It proposes a line to run from the city to Revere and Lynn beaches.

List of Pacific Coast Patents.

The following re-issue is the only patent issued for Pacific Coast Inventors, for the week ending June 18, 1872:

CHAIN-ELEVATOR AND BUCKET.—John A. Ball, Grass Valley, Cal.—Patent No. 96, 866, dated November 16, 1869.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention:

IMPROVED GRAIN CLEANER.—John H. De-Force, Healdsburg, Sonoma county, Cal. This grain cleaner is intended more particularly to be used in mills, for the purpose of thoroughly cleaning wheat previous to its being ground into flour. It consists of a peculiarly constructed pipe or spout, through which air is drawn by a fan. The grain is delivered into a vertical spout at the end of the spout or pipe opposite the fan, so that the chaff and lighter grains will be drawn by the suction produced by the fan, through the pipe, while the heavier and larger grains on account of their superior specific gravity, will fall upon a series of separating plates or screens where the cheat and barley are separated from the wheat.

MACHINE FOR PAINTING WIRE CLOTH.—Samuel Graves, San Francisco, Cal. This machine is intended to be used for painting wire cloth, such as is manufactured in strips of considerable length and afterwards rolled in the manner of forming rolls of ordinary cloth. It can also be used for painting or coating any other fibrous material, such as cloth, where such a process is required. The usual manner of applying paint to wire cloth is by means of brushes, which renders the process very tedious, especially so as it requires great care to prevent the meshes of the cloth from becoming filled with the paint, where it will dry and not only injure its appearance but the utility of the cloth. In this machine the cloth is passed through a bath of paint or other mixture so that it will be covered, and afterwards passed between elastic rollers which will press out all the superfluous paint which has lodged in the meshes, and leave the wires with a proper coating of paint to protect them. The machine consists of a box in which the paint is kept; proper mechanism is provided for stirring the paint in order to prevent it from settling or becoming thick. India rubber or other elastic rollers are secured above this vessel so that the cloth can be carried up directly between them. Upon each side of these rollers are fixed hoppers or troughs which receive the superfluous paint which the rollers take from the cloth, and direct it back to the main vessel or tank.

ENCOURAGING THE MANUFACTURE OF BEET SUGAR.—The New Jersey Legislature, at its last session, passed the following act:

1. Be it enacted by the Senate and General Assembly of the State of New Jersey, That for the term of ten years next after the passage of this act, all the machinery, buildings, real estate, and all other property owned by any individual or individuals, corporation or corporations organized under any law of this State, and used exclusively in the business of manufacturing beet sugar, are hereby exempted from taxation for any purpose whatsoever, provided that this exemption from taxation shall not apply to lands upon which beets are raised for the purpose of manufacture.

2. And be it enacted, That the stock of any incorporated company engaged exclusively in the manufacture of beet sugar in this State, held and owned by any individual or individuals, shall be exempt from taxation for any purpose for the time specified in the first section of this act.

3. And be it enacted, That this act shall take effect immediately, and be in force from and after its passage.

BEE CULTURE.—It has always surprised us that more attention was not paid to the honey-bee. Considering the amount of capital thus invested, and labor expended, it is ten times more profitable than any other item on the farm. In this climate where flowers of all kinds are abundant and rich in honey for so many months in the year, a colony of bees will make its own costs and all expenses the first season. Honey and wax have been important items in all ages of the world. The little island of Corsica once paid Rome an annual tribute of 200,000 pounds of wax. In the province of Attica in Greece, containing only forty-five square miles, 20,000 lives are kept. In 1857, the yield of honey and wax in Australia was estimated at seven million dollars.—*Willamette Farmer.*

A good library is a precious catacomb, wherein are embalmed imperishably the great minds of the dead who will never die.

FARMERS IN COUNCIL.

Napa County Farmers' Club.

Club met pursuant to adjournment. After calling to order, the President announced that the Constitution was open for signers, whereupon the following gentlemen added their names to the list already published: R. Watson, Suscol; E. W. Robinson, Napa; W. S. Jacks, Napa; Robt. Browlee, Napa; Wm. Imrie, Napa; Wm. Gouverneur Morris, Suscol; W. R. Woodward, Oak Knoll.

The Secretary read a communication from W. H. Rector, Esq., concerning the manufacture of grain bags, which was ordered on file.

On motion of Mr. Gridley the Secretary was ordered to correspond with the Club of Santa Clara county with reference to the subject of Mr. Rector's letter.

The order of the day was taken up, but no one seemed to know exactly how to get at the subject. After some skirmishing, however, Mr. Fisher opened the way to a discussion. He thought that the first thing necessary to dispose of our crops to advantage was to prepare them properly for market. This involved the questions of what kinds of machinery should we use? What kind of labor should we employ, etc.? He suggested that the question be divided, and that the discussion to-day be confined to cereals.

Mr. Gridley spoke of the great improvements that had been made within his memory in the modes of harvesting. There have been none greater than in cutting. He thought when reapers came into use that improvement was at an end, but was glad that reapers had been superseded by headers. The latter saved much to the farmer, and yet farmers lost a great deal by careless heading. Machinery to be of real advantage must be used carefully and skillfully. He was also satisfied that farmers usually cut their grain too late. After it was dead ripe it broke off and shelled out. His experience had been favorable to cutting from ten days to two weeks earlier than the average of farmers, and to allow the grain to stand in stack even three months. Grain sweats so much more thoroughly and would be threshed so much better under such treatment. By treating his grain in this way he had plumper grain; and by letting it stand he would secure cheaper threshing and cheaper sacks. He had seen the Vibrator Machine work in the East, and thought it would supercede all others now in use.

Mr. Robinson said that his experiences were limited. He had tried cutting early; his grain was nice and plump, but it was not threshed so clean. He had probably saved in heading what he had lost in threshing. He was not so strongly for early cutting as Mr. Gridley.

Mr. Wilson said that heading was doubtless the best method of cutting, and Haines' header the best in use, though some plan might be devised to save grain that was rattled out. He did not approve of cutting green; had had grain mould in the stack. The Vibrator separator was a good machine, but it was too slow to take well in California. We want speed, even at the expense of other requisites—he thought we were too much in a hurry. Threshing must be done fast on account of the high price of labor. As long as we paid men by the day, the machine that does the work in the fewest days will be reckoned the best machine. The Russell machine was good enough for him. It would thresh one-third more grain than the Vibrator and clean it well.

Mr. Sawyer said that he had had fifty years experience in harvesting grain. He used to cut it with a sickle, and saved it all because it was hard to get. We cut more grain with modern machines, but not at less cost than with a sickle. Heading costs from \$1.50 to \$2.00 per day, while cut with a sickle and nicely shocked, it only cost from \$1.00 to \$1.50. After the sickle came the cradle, and then the reaper and header. With each improvement making speed, more grain is wasted, but not much money is actually lost to the farmer. The man who runs the header is the man who makes the money. Small farmers could not afford to keep machinery; the capital invested lay idle too long. He finds that it pays better to hire machinery than to own it. He saw the first thresher that was built in the United States run, and had run them more or less ever since. Thought the Vibrator a good machine—its arrangement for saving grain was better than any in use. One machine (now running near Antioch) had been sold in this valley, and warranted to thresh 1,000 sacks per day. No machine in use could compete with them in point of saving grain; they made up in this respect what they lacked in capacity.

Mr. Gridley had heard from the machine referred to, and knew that it was giving satisfaction.

Mr. Brownlee was sorry that Mr. G. had mistaken so seriously in the policy of cutting grain green and allowing it to stand so long. He would not cut till it was dead ripe, and would, if possible, thresh the same day. It was economy every way to cut and thresh together. He has a Russell separator that had run nine years, and had done as good work as any machine within his knowledge.

Mr. Young said he had not run machinery, but had had a great deal of grain threshed. All machines wasted more or less, and if the Vibrator did not, it was the machine for him. An improvement that would save grain does seem within the range of possibility, and it is certainly the great desideratum now. He agreed with Mr. Brownlee, that if possible he would

cut and thresh together; but if he could not thresh immediately would allow grain to sweat thoroughly.

Mr. Fisher said: Our object is economy. The farmer, in plowing or harvesting must take advantage of all improvements. He liked the header—it was a great strike in advance, yet the loss by heading was sometimes very great. Grain too ripe shells out and breaks off—he had lost from five to eight sacks per acre, by letting his grain stand too long. There are advantages and disadvantages either way; if grain is perfectly ripe before cutting, the straw is better, and straw in this country is an object, but it requires a longer time to sweat than if cut green. He thought the best thresher was Russell's latest improved, though the capacity of the Vibrator might be increased until it would be able to compete with others, provided it was not done at the expense of its cleaning. The great need at present is an improved shoe—a shoe that would clean all that could be threshed. Our grain must be cleaned better. This was his principal objection to cutting green; if there were weeds in the grain it could not be cleaned. He thought the best time to cut was when grain was barely ripe—ripe but not dry. The risk of having it shaken out by the north winds is too great to justify letting it stand long after it is ready to cut. Mr. Gridley, by way of explanation, said that calculating all the chances, weighing the advantages and disadvantages he had arrived at the conclusion that farmers usually let their grain get too ripe before cutting. Then it was put into stacks, and threshed too soon; for perfectly ripe grain, being dry, would not sweat as quickly nor as thoroughly as if it were a little green, and hence could not be threshed as clean.

Mr. Sawyer, referring to the Vibrator Machine again, said that its capacity for threshing was not as great as its capacity for cleaning; it would clean three times as much as a Russell would thresh. Its clearing apparatus, the wind and riddles, were of such dimensions and so arranged that it could not help cleaning grain perfectly.

Mr. Browlee stated that his greatest difficulty was with dog-fennel; his machine would not blow over the weed without blowing over more wheat than he could afford to lose, hence it was necessary for a man to stand by the shoe to clear out the weed by hand. He asked if the Vibrator would do this. Mr. Sawyer thought it would. Mr. Browlee said he would like to see one tried; if it would do what Mr. S. claimed for it, he would buy one. Mr. Fisher repeated that our grain must be cleaned, or we could not come in competition with grain from other parts of the world. It makes no difference what our excuse is; it only concerns buyers to know that grain is clean or dirty—they make no allowances for weeds in the field.

The same question was continued until next meeting.

On motion an order was drawn on the Treasurer for \$5 for the use of the Secretary.

Club adjourned till next Saturday at 2 p. m.

W. A. FISHER, Pres.
G. W. HENNING, Sec'y.
Napa City, June 29, 1872.

San Jose Farmers' Club and Protective Association.

[Reported especially for the PACIFIC RURAL PRESS.]
Meeting of July 6th.

The Club met in their new hall, at 1 p. m. President, Benj. Casey in the chair.

A communication, containing the market reports, was received from Mr. Todd. The Secretary was instructed to acknowledge the favorable reception of the same.

The subject chosen for discussion at the next meeting is: "The Merits of the Different Breeds of Horses."

The Secretary read a communication from The Napa County Farmers' Club, on the question of Sacks. It contained a letter from Mr. W. H. Rector, on the establishment of another bag factory.

The Liquor question was discussed by Mr. Jesse Hobson, who strongly favored local prohibition. Thought that our laws should be so changed as to give each school district the right to prohibit the sale of liquor within its borders if the inhabitants desired. He said, liquor is the one great tax that the country grows under, which is easily shown by referring to our criminal records.

Grass and Grazing.

These were next discussed. Mr. Hobson said, he did not know much about the subject, but he noticed that the parties who had charge of St. James' Square, were selling the grass, and appeared to be doing well; they had cut it several times, and sold it at fifty cents per earl load. He had bought and fed several tons of it to his cows with satisfactory results. He believed it was Italian Rye-grass. Mr. Burgland thought the Italian Rye-grass might do very well, and would like to see it thoroughly tested. He had fairly tested Hungarian grass. His stock would eat it and keep eating, and nearly starve to death eating it. He wanted no more of that kind. He said, timothy is a failure in our valleys.

Alfalfa ruins the land and cattle don't like it. It is a curse to any farm—worse than Canada Thistles. Mr. Caldwell wanted to know if the German Panic Grass had been tried in this country. It grows strong and quick, and did

well in some parts of the East. Grass is the foundation of prosperity in any country, and should be studied by our farmers. Mr. Hobson thought grain ought to be substituted for grass; he felt confident that it is preferable and that wheat could be profitably substituted for grass in many of the older States. Wheat is the best; oats may do better along the Coast where there are heavy fogs. The common grasses may be raised with profit where there is plenty of moisture.

Mr. Holloway, Jr., spoke of the nutritious qualities of the bunch grass in Arizona and Texas; stock do better on that than any other kind of grass. He thought it would be well for some one to experiment on cultivating it. Mr. Herring being called upon described the same grass, said it was hard and grew in isolated bunches; for hay they cut it with a hoe and fed roots and all. Stock eat it well, but perhaps it is because in that dry country they can get no better. It grows in joints and will take root at the joints like a strawberry vine. Mr. Burgland knew the grass very well; he had not much faith in its good qualities, but would test a small patch of it next year; he thought it grew in our Coast mountains, if not, he could get the seed from San Diego.

The Club received an invitation from Mr. Neuman to visit his cocoonery in Murphy's Block, which they accepted. Mr. Neuman exhibited the worm in all its stages, from the eggs being deposited by the moth, to the matured moth again; at present they seemed to be doing very well and the proprietor is enthusiastic, and seems to have great faith in the final success of his operations; I am told that his annuals have nearly all died, but that the others are doing well. The members of the Club seemed pleased with their visit and heartily wished Mr. Neuman success in his efforts.

Sacramento Farmers' Club.

The club met on Saturday at the usual time and place, President Baker in the chair.

Steam Plowing Apparatus.

Order having been called, Alexander Campbell, by invitation, exhibited to the members of the club drawings of a steam engine and apparatus for plowing and ditching—an improvement of Mr. Campbell's on the English system of plowing by means of a stationary engine, ropes and pulleys. Mr. Campbell proposes to use two engines, and the following is a description of them and what he claims they will accomplish.

These engines are capable of cultivating from thirty to sixty acres per day of ten hours, from seven to twelve inches in depth, or in cutting one mile of ditching per hour, three feet wide at top, one foot at the bottom, by two and a half feet in depth— or 3x12½ feet.

They may be made available at a moment's notice for any ordinary work, such as threshing, pumping, sawing, hoisting, or as a traction engine.

They are fitted with Campbell's compound windlass expansion frames, telescopic hoisting crane, etc. This windlass has a clip drum, enabling one engine to be used when wanted independently of any other, for plowing, etc.

The expansion frames take all strains entirely off the boilers, thereby, greatly reducing the wear and tear.

The cylinders are steamed-jacketed, and all the gearing and working parts are made of cast-steel, insuring the greatest strength and lightness.

No other system of steam cultivation can compare with this for thoroughness of work, less wear and tear, and economy of expenses for work done.

Mr. Campbell also submitted for the consideration of the members the following comparison between direct traction and stationary engine cultivating: The best traction engine known to the public is that manufactured by Messrs. Aveling & Porter, Rochester, England. Their six-horse power has an indicated power of thirty-eight horses and weighs 11,704 pounds; eighty-three pounds is the tractive power of a horse at four miles an hour. To pull a ton over soft sandy or gravelly ground requires a strain of 210 pounds. Consequently, to pull such an engine over such ground, requires 2,000: 11,704:: 2.53: 14.8 horses, leaving 38—14.8: 23.2 horses for actual work. To plow a furrow eight inches deep by ten inches breadth it requires a strain of 393 pounds. This power would pull five (nearly) plows in a gang at four miles an hour. This, deducting say fifteen per cent. for stoppages, will give 75,112.8 feet per hour, or 1.7-24 acres per hour, or 17.23 acres per day of ten hours at a cost of 1,900 pounds of coal and two (skilled) men's wages. That is, assuming five pounds of coal per horse-power per hour. This shows a consumption of 1,160 pounds per actual work done and 740 pounds for propelling the engine. Supposing this engine to be fitted up with a clip drum the friction of the rope does not waste one-tenth of the engine power; thus we should have 34.2 horse power for actual use instead of 23.2; 23.2: 34.2:: 5: 8 nearly in a gang 5: 8: 17.24: 27.594 acres per day of ten hours. This will require two men (skilled) and two boys. Cost of direct traction: 2,000 pounds of coal at \$10; two men, \$8; cost for seventeen and a quarter acres, \$18. Cost of stationary traction: 2,000 pounds of coal at \$10; two men, \$8; two boys \$3; cost for twenty-seven and a half acres, \$21. Thus direct traction will cost \$1.11-69 per acre, while rope traction will cost 76.22-55 cents per acre.

After examining the drawings and hearing them explained, and considering the claims and

statements, the club passed the following preamble and resolution:

Whereas, Mr. A. Campbell has exhibited to this club drawings for a steam plowing apparatus, an improvement of his on the English system of plowing by stationary engines, and explained the advantages of engine power over direct traction; and whereas, we are fully satisfied that the productiveness of our soil can be greatly increased by deeper and more thorough cultivation, therefore

Resolved, That we regard Mr. Campbell's improvement as a valuable one, and would be glad to see the plow introduced into our State, generally—and hope capitalists who are interested in the agricultural improvements of the State will not hesitate to furnish the necessary means to accomplish the object.

Santa Cruz Farmers' Club.

The Club met at the Court House, Santa Cruz, on Saturday afternoon, July 6th, at 1 o'clock p. m., the President, Mr. Mattison, in the chair. The committee on preliminary arrangements for the fair reported back to the Club to set the time and place. After some discussion, it was decided to hold the fair at Santa Cruz, on the 10th, 11th and 12th of October next.

The following executive committee was appointed to take charge of the arrangements: B. Calhoun, F. Adams, D. M. Locke, John Woods, H. B. Doane.

On motion the officers of the Club were added to the committee.

Mr. Adams from the Committee on questions proposed by the Sacramento Farmers' Club, made the following report:

To the President and members of the Farmers' Club. Gents:—We, your committee appointed to investigate and answer the several questions propounded by letter of the Secretary of the State Board of Agriculture would report, that we have performed the duty assigned to us and would report.

Answer to first question. That the effect of the heavy rains on crops in this County has been such as to materially effect the yield.

First.—By draining low spots which were not drained and where the water stood on the surface.

Second.—By fouling the ground by growths of fine grasses, forming a sod, and injuring the growth of grain.

Third.—By productions of foreign matters such as Cheat, Cockle, Smart and other foreign substances.

Fourth.—By preventing farmers from getting in their late crops in time to ensure a full yield. Taking all these together, the yield of this year is not so good as last year.

Answer to second question. That our apple crops are good,—in fact never better. This may be said of all kinds of fruit, except peaches, which are somewhat injured by the late frosts.

Answer to third question. Some fine fruit trees have been injured by the water standing around the roots, injuring them by causing decay of the smaller fibres.

We are of the unanimous opinion that thorough drainage is the best and only preventative or guard against loss of fruit trees, or their injury against heavy rains, and long wet winters. On motion the report was adopted.

The club then adjourned for two weeks.

San Joaquin Farmers' Club.

The Club met July 6th, Dr. E. S. Holden, President, in the chair. On motion, Mr. Phelps was appointed Secretary pro tem. Mr. Phelps, Chairman of the Committee on Labor Exchange, reported that he had accepted the resignation of B. F. Kohlberg, who has been acting as agent for the Exchange, and that he (Mr. Phelps) had turned over the business of the Exchange to Riug & Denig. He recommended that the Labor Exchange be abolished, and the committee discharged, which, on motion of Capt. Ketchum, was agreed to. Mr. Fairchild, from the Committee on Threshing, reported that nothing had been done regarding the testing of different machines, further than a good amount of blowing. He thought that if the gas expanded had any motive power in it and had been applied to the machines, it would have run them both out of the State in opposite directions. He believed that the friends of the Vibrator and the Csse machines were afraid of each other; said that they had been near each other for some time, and if they had been very anxious to engage in a contest they could have done so long ago.

The President remarked that he thought there was something radically wrong—other farmers' clubs had no trouble. Mr. Phelps, Chairman of the Sub-Committee on Threshing, said that heretofore all the blame had been laid on the manufacturers and agents of the different machines in a contest at their own expense; but now, Mr. Nichols, manufacturer of the Vibrator, and Mr. Erskine, of the Csse machine, have each agreed to bear all the expense necessary to engage in a friendly contest to test the respective merits of their machines; and Mr. Hewlett, of the firm of Jones & Hewlett, has also agreed to contribute largely for the same purpose. Mr. Phelps said that Mr. Fairchild, Mr. Smyth and himself, had left their harvesting and spent much valuable time in trying to bring on a trial but all their efforts had failed. Mr. Fairchild moved that a committee of one

be appointed to wait on the owners of the different machines and get a definite answer. Captain Ketchum thought they would be ready very soon. During the discussion, Mr. Sperry, agent of the Vibrator, entered the hall and stated that the reason the contemplated contest had not come off was that both parties owning the respective machines (himself and Mr. Graves) were very much behind with their work; that the weeds were getting the start of them; but as soon as they could get their grain stacked, the trial would certainly take place. On motion of Mr. Smyth, the subject was postponed for one week. Mr. Learned called the attention of the Club to the fact that the Board of Equalization would meet on Monday, July 8.

The President notified the Committee on Taxation that the farmers depended on the committee to be prompt in attending to their duty, as their action was of vital importance to the whole farming community. He said that since the subject of unjust taxation had been started by this Club, it had been taken up by all the different clubs in the State, some of whom are taking very decisive action in the matter and would not cease until some relief be had by the hard working farmer from the oppressive yoke of unjust taxation. The discussion of the subject of fertilizing the soil was announced to be next in order, and the President stated that he had written an essay on the subject, which, on motion, he read to the Club.

[We are obliged to defer the publication of the Essay, this week.—Ed.]

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Enterprise, July 5: FINE YIELD.—The Dan Bidwell farm, near Chico, has in cultivation this year 600 acres of wheat, which will yield from 30 to 35 bushels per acre; 100 acres of barley, producing 50 bushels per acre; 150 acres of hay affording two tons per acre. There are also upon the premises 5,000 fruit trees of all kinds, and 10,000 grape vines.

SEEKING NEW PASTURE.—On one day of the present week Sandy Young and Andy Reavis drove from the Ranch of D. M. Reavis, his (Reavis') large head of cattle, destined for points in the mountains, where only Sandy Young himself can tell.

WHEAT.—Wheat has gone down in price very low, as is always the case just at harvest. The distant crops as yet have not developed themselves, and no one can place an estimate of what the demand will be. We will know soon, when a better judgment may be arrived at as to when to sell.

ALFALFA.—We would advise our farmers that all over the State the alfalfa clover is becoming a favorite, and that wherever sown it grows well. It needs no irrigation.

EMIGRANTS.—Quite a number of families are passing through this place, bound for Pitt river. The mountain valleys are fast filling up and taking away many of our best citizens.

TRAVELING.—From reliable sources we have learned that Gen. Bidwell and lady will, within a few months, visit portions of South America, Spain and other European countries. Benefit to his wife's health, and an examination into the modes of cultivation of the vine and making raisins are the objects of the visit.

A SAD ACCIDENT.—From a visitor to Chico we have the following relation of a terrible accident occurring at Nanna's ranch in Colusa county, on Wednesday, the 3d instant: The boiler of the steam thrasher belonging to Curtis & Nanna burst, killing a youth named C. Newton, and badly injuring six persons, among whom was Mr. Curtis. The machine was entirely consumed, costing \$5,000, and three stacks of grain were burned.

CONTRA COSTA.

Gazette, July 6: FIELD FIRE.—A fire broke out in a wheat field belonging to Fernando Pacheco, some two miles north of Concord about ten o'clock Friday forenoon. Large numbers of people from the harvest fields of the surrounding neighborhood were hurried to the spot by the smoke signal, and succeeded in extinguishing the fire after it had burned over twelve or fifteen acres. It is thought that the fire must have been set intentionally or by the carelessness of some straggling smoker, as it occurred in a part of the field distant from any road or path. It would not be well for the comfort of any person that he should be suspected of agency in such business, about this season of the year.

ORDERING FROM THE EAST.—We hear that several farmers in the neighborhood of Clayton have united in ordering grain sacks to the number of ten thousand, from New York, which they expect will come to

them at rates below those now ruling here.

MERCED.

Tribune, July 6: CROPS.—The crops hereabouts are yielding far in excess of what the most sanguine of our farmers predicted. Capt. Morrison, who had estimated the yield of his ranch at twenty bushels to the acre, informs us that the first stack threshed yielded an average of thirty-four bushels to the acre, and his entire crop will average over thirty bushels to the acre.

NOT SO.—A rumor prevails below here that the authors of the recent incendiary fires in this county were caught and summarily hanged. This we regret to say is not the case. Suspicion is directed against no one particularly, though it is incontrovertible that the grain was purposely fired. Should the operator or operators be caught, however, we promise on behalf of the outraged farmers that the rumor will be realized.

FRUIT.—The time of canning fruit has come and the voice of the preserving kettle will be shortly heard in the land—that is if "we"uns" can get fruit in plenty. Until it arrives more freely and is held at lower rates many will go without. What is the matter? Let us hear from Santa Clara and Alameda. Fruit just now hints too strongly of greenbacks.

NEVADA.

Truckee Republican July 5: SNOW ON THE WASHOE RANGE.—The warm weather for the last few days has sluiced the snow almost all off the western summit of the Washoe mountains. On the summit of the Sierra Nevada, however, it still glistens cold and deep, and apparently is undisturbed by the great heat prevailing in the valleys and foothills. It will take a month or more of warm weather to expose the bare summits of the Sierras in sight from Truckee.

COME TO THE WRONG PLACE.—Mr. Bastine, of Washoe City, was in town on Tuesday in search of thirty wood-choppers. He offered from \$2 to \$2.50 per cord, but failed to find either white man or "heathen Chinese" in want of employment who could be seduced to leave Truckee. This is the last place in California a man should come to for the purpose of enticing away laboring men.

PLACER.

Herald, July 6: HARVEST OVER.—Grain cutting is about over in this county, and reapers and headers will be housed for the season, and the threshers will be brought out and set to work next week. Farmers from western Placer, the chief grain raising portion of the county, inform us that the crops will prove a fair average. But for too much rain in the winter, and too little in the spring, it would have been an extragood crop. The grain raised here is, as usual, the finest produced in any portion of the State, and commands the highest price in the market, especially from millers.

SACRAMENTO.

Folsom Telegraph, July 6: PROSPERING.—The heavy crops this year over the length and breadth of the State, will bring millions of dollars into the pockets of the farmers. They will need it, however, and will make use of it, as most of them have run behind for the past two years, owing to the drouth, buying land and improving their farms. The fruit growers will also do well. The vineyards are loaded with grapes, and a larger amount of wine and brandy will be made than ever before. Cotton promises well and will pay remarkably well. Miners in the hills are as a general thing doing better than for many years. The few manufacturing establishments in the State are paying well, but for some reason or other, capitalists are loth to invest their money in this branch of industry.

SAN DIEGO.

Weekly Bulletin, June 29: HEAVY SALE OF CATTLE.—Robert Kelley sold one thousand head of beef cattle to W. G. Hill, of Cajon. The are to be driven to Nevada.

BIG LOAD OF HAY.—Yesterday, Capt. R. K. Porter, with a six horse team, haul six tons of new, nicely baled hay from his ranch to this city, for which he found ready sale.

PASSION FLOWER.—Doubtless many of our readers have observed that the west side of the Fifth street brewery is thickly covered with green leaves of a large vine. We are informed that this is the well-known Passion Flower. The stem of this flower has a woody texture, becomes quite large, and its flexible branches attain to considerable length, and of rapid growth, and spread over considerable space. The blossom of the common variety is star-shaped and beautiful in appearance. This showy plant makes a handsome arbor covering.

SANTA CLARA.

Mercury, July 6: CHERRY CURRANTS.—I. A. Wilcox, at his experimental gardens, two miles northwesterly from Santa Clara, is now supplying this market with from 1,200, to 1,500 pounds a day of this superb fruit. He is also shipping about double this quantity to San Francisco daily—and this in the commencement of the fruitage. By next week his shipments will exceed 6,000 pounds a day. His best bearing plants are two years old. The cherry currant grows in immense clusters attached to the main stock, and commences fruiting close to the ground. To preserve its bright scarlet color it must ripen in the shade of its own foliage. It can only attain perfection by thorough cultivation of the soil and abundant irrigation. By this means Mr. Wilcox has brought his fruit to a state of perfection truly remarkable. In Alameda county the lack of irrigative facilities is seriously felt; the plant makes less foliage, and the color of the fruit is more or less dimmed by the sun. Our flowing wells give us a marked advantage in this respect.

SONOMA.

Russian River Flag, July 4: Col. H. L. Preston, late of Idaho, has bought the Derriex vineyard near Cloverdale. We have no idea that this will induce the Col. to settle down, as he is one of the most inveterate travelers in the world. His brother will come down from Oregon and conduct the vineyard in connection with stock raising.

FRUIT.—J. H. Curtiss has the thanks of the *Flag* office for some blackberries—as fine ones as we ever saw. He also left us a few apples—some of the 1871 crop, and some of this year's crop. The yearlings were in a good state of preservation.

WHEAT.—There is a large quantity of new wheat by the Elevator on two very long trains, and a large pile is lying on the Company's wharf just this side of the elevator.

GREAT CURIOSITY.—Quite a curiosity was shown on Mare Island, on Monday, in the way of seven well-formed ears of corn on a single stock.

TUOLUMNE.

Independent, July 6: SHEEP.—We understand that the mountains are filled with sheep. Sheep raising is a very profitable business, and a business that must be understood to make it so. Mutton and wool are very necessary articles to man's prosperity and welfare, and from the earliest ages the sheep has been his friend. God has never put an animal on the earth that has been of more service. But notwithstanding all this, there are other branches in the stock business that hold claim to the public domain, and are willing to pay for range although less remunerative and not so damaging. We would like to see these sheep men pay something for value received. The Legislature of last winter made no provision in this direction—but we hope the next one will.

YOLO.

Democrat, June 29: NEW WHEAT.—Several lots of new wheat have been brought in, and more would have been if the prices had kept up. The quality of the lots sold is excellent, and the price realized from \$1.50 to \$1.60 per cental; \$1.50 is now the top of the market for new wheat in Woodland.

MAIL, July 6: YOLO ITEMS.—COMING IN. New wheat is beginning to arrive pretty freely, and more cars and engines are needed to bear it away.

The artesian well is progressing favorably, and the auger has reached a depth of 650 feet—no signs of water yet.

BUSY.—Our streets have not been so lively for the past few days as usual, which indicates that there is business in the harvest fields for all who wish to labor and more too. The bulk of the wheat will be harvested within the next ten days or two weeks, and then the railroad will have business, which, at its present rate of steam and carriage, will not suffice for the demand.

OREGON.

Oregonian, June 29: The Oregon State Agricultural Society owns 140 acres of land near Salem. The improvements on it are valued at \$10,000.

A farmer in Union county killed 2,000 ground squirrels during May last. May wasn't a good month for ground squirrels either.

Wm. Warren, of Yamhill county, has an ox which has been twice bitten by rattlesnakes this season. The ox is likely to die from the effect of the wounds.

A band of sheep numbering two hundred head passed through Eugene on Tuesday

morning. They are being taken to Eastern Oregon over the O. C. M. Road.

The late spring sown grain in Washington county is a failure.

Wool in the Oregon City market has gone down to 35 cents per pound.

TIMBER BURNING.—Dense volumes of smoke were seen to issue Monday from the timbered region west of the city. From indications clearing is progressing lively in that direction. The bases of the wooded heights invironing the western limits of the city are being rapidly divested of their covering, and a few more seasons will bring a wonderful change.

Hay harvest has begun on the sound. The "yeasty waves" of the Columbia still o'erspread the wild meadow lands at Kalama.

A decision by Judge Prim, of the First Judicial District, is announced, which virtually settles the question, that where lands have been surveyed and returned as agricultural lands, mere possession by the miners give them no legal or equitable rights sufficient to resist a patent.

MONTANA.

Mountaineer, June 29: HUCKLEBERRIES.—Although our mountains are covered with the small variety of the huckleberry bush, we know of but few places where the large bushes grow. On the Elk Creek and Maginnis Gulch Mountains plenty of them are found. Let some of our townspeople make arrangements to have a few of these bushes shipped up next spring in time for planting. The fruit is among the most delicious that grows, and will well repay the trouble and expense of transplanting.

Mr. T. H. Harris of the Bitter Root, gave us a call this week, on his way to Helena. He says that one of his seedling apple trees, three years old, has fifty well developed apples growing on it, and that his plum trees are bearing this year. This evidence of the adaptability of our climate to the raising of fruit should be sufficient to induce all our farmers and town residents to plant fruit trees—from the top of Mt. Powell down to the lowest level "where the pleasant valleys lie."

Many new farms have been taken in Flint and willow Creek Valleys within the year, and crops are looking well, except where damaged by crickets, which in many places threaten to destroy everything. Some farmers have had to employ men for the purpose of fighting them, but most of the ranchmen think they will be able to save the bulk of their crops by the judicious use of water alone.

Now is the time to catch kids. Any one living near the range of the Rocky Mountain or Montana Goat will make it pay to catch some of the lambs. There is a demand in California and other places, for rams, and if a few could be secured, they would bring a good round price. Messrs. Clark and Larabee, bankers, have been applied to, to secure several if possible.

WASHINGTON.

THE WEATHER.—Walla Walla *Union*, June 29: During the week we have had weather that does not remind us quite so much of the place that the preachers tell us of, as did that of the week previous. During the fore part it was just reasonably warm, but toward the middle it commenced trying to rain, and on yesterday afternoon it made it out and we had a nice shower—the first for some weeks.

THE GRAIN CROP.—We have "interviewed" numbers of farmers from all sections of the country, and from their statements we gather that as a general thing Fall sown grain will be about an average crop, but that the spring sowing is almost universally poor. In many places it will not be worth cutting as grain, and some fields will not pay to cut even for hay, because of the smut. Our crop of wheat will be light, and other grain will be very light.

CUTTING HAY.—Just now many of our farmers are busy cutting hay. We see that it has begun to come to town. While the hay crop is not as a general thing good, there will be a large amount of it cut this year, as much grain will be mowed instead of being reaped. At the low prices of grain and high prices of stock we do not know but that it will be almost as good for the country as if we had heavier crops of grain and consequently less hay.

We hear complaints made by stock men that grass is getting very poor for this time of the year. The early part of the season was so dry that it did not grow as tall as usual, and it has continued so dry that the grass is beginning to dry up. The consequence is that feed is short, and stock is not doing as well as it usually does at this season of the year.

HOME AND FARM.

A Settled Policy on Farms.

The whole secret of successful farming often lies in his having a fixed plan of operations. Multitudes have no plan but to meet their immediate necessities and make money by the easiest and seemingly shortest methods. If wool brings high prices, they will gradually give up dairying and work into sheep, with the expectations of making their fortunes. If wool and mutton raising for a time does not pay, they sell their flocks at a great sacrifice. If hops are sixty cents a pound, they invest in hop-poles and kilns for drying, and expect sudden wealth. If, when their yards come into full bearing, the prices fall off one-half or more, they are disgusted, and ready to plow up their yards, concluding that the business will not pay. There are men who are always taking up a good thing a little too late to make money out of it. The farmer cannot afford this continual change. His business is less speculative than any other, and after providing for the wants of his family and stock, he should give his attention steadily to the production of a few animals, crops and other products, on which he can rely to raise money. Any branch of farm industry steadily followed, will be found profitable. Dairying in a year of short grass might not pay very well.

But years of drought are exceptions, and the man who makes first rate butter and cheese will find them a reliable source of income. When a speciality is made of some one crop, it is particularly important he should follow it steadily. The raising of hops or tobacco require fixtures that are useless in any other branch of farming, and the change of crops involves a considerable loss of capital. Besides we are always learning in a good business to which we give habitual attention, and this knowledge is as much a part of our capital as the money invested in tools and outbuildings. If a man should make potatoes his leading crop, he would study to lessen the cost of production, and would resort to devices in the preparation of the seed and the soil, in the use of manures, and in cultivation, quite unknown to the farmer who pursues a careless style of husbandry, he could raise potatoes cheaper than his neighbor, by reason of his improved methods, and if he sold at the same price, make money. Whatever branch of farming you follow, stick to it if moderately profitable. Lay your plans ahead and be prepared for exceptional years, when large profits come from high prices, or losses from unfavorable seasons. A mixed husbandry is always the safer, and is not inconsistent with the cultivation of commercial crops as tobacco, hops, flax, onion seeds, or vegetable seed of any kind, garden vegetables, or market fruits, etc. The introduction of these requires close calculation, definite plans, and the thorough business management, if success be attained.—*New York Day Book.*

SOURCES OF FERTILITY IN FARMS.—The sources of fertility to farms are the refuse of the crops which they bear, modified by the farm stock, and preserved and judiciously applied by the husbandman. There is not a vegetable matter grown upon the farm, be it considered never so useless or obnoxious, but will, after it has served ordinary useful purposes, impart fertility to the soil, and contribute to the growth of a new generation of plants, if it is judiciously husbanded and applied. There is not an animal substance, be it soil, liquid or gaseous—be it bone, horn, urine, hair, wood or flesh, or the gases which are generated by the decomposition of these matters—but, with like care and like skill, may be converted into new vegetable, and afterward into new animal matters. To economize and apply all these fertilizing materials is the province and the duty of the husbandman.

A NEW POTATO IN FRANCE.—A new potato named the *Marjolain a oeil Rose*, or the Rose-eye Marjolain, has made its appearance in France, and which is claimed to be very superior, not only for its fine quality, but as a long keeper. M. Carriere, the editor of the *Revue Horticole*, states that he has seen it and tried it, and that the praises lavished upon it are well deserved. He has eaten of it cooked in every way; therefore he knows. Monsieur Leclere says the tuber has eyes which are on the surface, not sunken, with a smooth skin, and somewhat elongated in shape. The flesh is somewhat yellow, very fine, and of a very delicate flavor. It grows

with a short, erect stem, not very large, and taking up very little space. One of its main characteristics is that it will keep sound late in the season.

What to do With our Surplus Fruits and Vegetables.

At the Agricultural Convention at Savannah, Georgia, according to the *American Artisan* Mr. B. H. True described a new system of preserving fruits and vegetables, invented by Mr. C. Alden, which is highly spoken of, and which will doubtless be read with interest by many of the fruit growers of this State, who may be anxious as to the manner in which their surplus fruit may be utilized best. Mr. True gives the following description of the process:—It is well known that the starch and sugar of fruits are almost identical in their chemical constitution, and that starch develops into sugar by the aid of acid, both in natural ripening of plants and in such artificial processes as the conversion of potato starch into grape sugar by the aid (but not consumption) of sulphuric acid, which is prosecuted on a commercial scale in Germany. But to Mr. Alden belongs the honor of the discovery that the process of super-maturation can be artificially stimulated, so as to convert the mucous constituents of any organic product largely into saccharine matter, in a very few hours, with a result analogous to the "raisining" of the grape. In other words, this wonderfully enriching change which crude art can only effect in certain specially adapted products, such as the grape, fig, and prune, and that under certain precise climatic conditions, is now found practicable by scientific but simple appa-

The cost of this machinery complete is \$2,500. The following is a detailed statement of what is claimed to be accomplished with one of these machines in a week's time, at work on peaches. One evaporator of 40 frames, carrying half bushels per frame, two frames entering and coming out every nine minutes, makes 160 frames, or 80 bushels in 12 hours. Total, say, 500 bushels per week, with the following result:—

Five hundred bushels per week yield	
4,000 pounds fruit, averaging in New York 30 cents.....	\$1,200
Seven hundred and fifty pounds skins, worth for jelly and marmalade 6 cents per pound.....	45

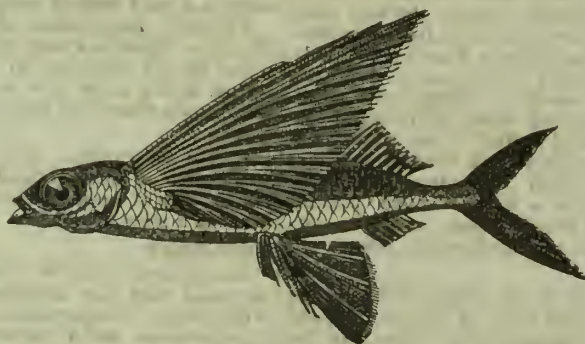
Total.....\$1,245

COST.	
Five hundred bushels at 50 cents.....	\$250
Total cost for fuel, engineer, girls to pare peaches, etc.....	163

Whole expenses.....	\$413
Net profit per week.....	\$832

Mention is made of the delicious syrup obtained from the hydrated sweet potato, at a trifling expense, by Mr. Alden's patent exhausting process. The yield is over one gallon. The average product per acre is 500 bushels, yielding, at only one dollar per gallon, \$500 in syrup, and a residuum of five thousand pounds of flour, worth at least \$150. The cost of manufacture, without paring, need not exceed the value of the flour, leaving the syrup \$500 as the annual clear product of tillage per acre.

DRESSING BLACK HOGS.—A correspondent of the *Michigan Farmer* says: "The principal objection to the Essex and Berk-



THE FLYING FISH.

ratus, with any organic product containing amylaceous matter, and in any part of the world. The apple, peach, or tomato, for instance, can be as truly "raisined," according to its kind, as the grape; and it is not unreasonable to infer that, by the same scientific aid, the "raisining" of the grape, fig, and prune, etc., may be dispatched with like celerity, and proportional improvement of the product in point of both richness and freshness, especially the latter.

For it must be understood that the peculiarity of the Alden preserved fruits or vegetables is wholly or mainly in their enhanced sweetness and refinement: This change, by itself considered, as illustrated by the dried grape or raisin, is but an incident to something far more important, novel, and startling. Dried fruit in its best estate may be described as the opposite of fresh. The Alden fruit, on the contrary, is *fresh fruit* (rendered imperishable), and, therefore, must not be confounded with dried fruit.

The chief mechanical parts of the apparatus are the evaporating or pneumatic chamber, ordinarily five feet square and fifteen feet high; the revolving endless chains, one at each corner of the chamber, running vertically and carrying brackets to support the fruit frames, nine inches apart, and each carrying half a bushel of fruit; the steam coil at the bottom of the chamber containing about 3,000 feet of pipe connected with a boiler, for heating the air-blasts; the boiler and engine for driving the blower. The fruit enters at the top of the chamber where the air blasts issue out in a tepid and slightly humid state from having passed through twenty to forty frames of fruit. The blasts here take off the surface moisture from the fruit quickly, but not so perfectly as to incrust it. At every nine minutes the carrying chains move the whole series of fruit frames downward on the chamber, by the depth of one interval or two, according to the moisture of the fruit, two frames at the bottom being taken out and two freshly filled being put in at the top. As the fruit descends the blast becomes gradually warmer and freer from humidity, until its highest temperature is found at the lowest interval, where it is from 160° to 175° Fahr.

shire breed of hogs I find to be their color. Now, as Yonatt justly observes, this is not even 'skin deep.' The coloring matter will be found to be secreted between the true skin and the epidermis or outer skin. If care be taken in scalding black hogs, they can be dressed as white as any white hogs. It is a well known principle that all black substances absorb heat. Hence in dressing black hogs the water should not be so hot as in scalding white ones. If this simple rule be observed, there will be no difficulty in dressing black hogs. Instead of this color being an objection, I regard it as an advantage, for the skin of a black hog will always be found to be smooth and glossy, free from cutaneous eruptions and always clean.

TEXAS CATTLE.—The *West Side*, an Oregon paper, tells us how they get Texas cattle into that part of the Great North West. Mr. H. H. Burton, who left here last winter for Texas to buy cattle, writes to his family at North Yamhill that he has succeeded in purchasing 1,400 head and is now on his way home with them. He will make two summers' drives of the trip, wintering his drove on the head waters of the Missouri and getting through early next summer. The drove cost \$8 each for cows with calves, \$5 for steers, three years old and upward, and \$3.50 for two-year-olds or dry cows.

Ducks are said to be great insect exterminators. The *Grape Culturist* advises the raising of them in vineyards as they will destroy bugs, thrips, flies, snails, etc. Ducks are quite as profitable for eggs as hens, and where feed is plenty and cheap, are always profitable to raise. We would advise feeding the poorer quality of ripe grapes to the fowls. They possess great fattening properties, are easy to raise, and it would be putting them to a good use.

LICE ON CATTLE may be removed by pouring a small quantity of kerosene on the card with which they are carded. The application should be frequent, though in but small quantity, till the lice all disappear. The loudest herd I ever saw was completely relieved of them in ten days by this application alone.

The Flying Fish.

There are several varieties of the flying fish; all similar in appearance to the one herewith illustrated. They are all characterized by an excessive development of the pectorals, which assume the form of wings, and are used as such. Their length and power is sufficient to enable the possessors to support themselves in the air for a moment only. Fishes of this family are found in all warm and temperate seas. They are all small, varying in length from four to about twelve inches.

Australian Forest Trees.

At the last meeting of the Academy of Sciences, R. E. C. Stearns read a very interesting paper entitled, "The Economic Value of Certain Australian Forest Trees, and their Cultivation in California." It treated particularly of the varieties of the *Eucalyptus* which Mr. Stearns enlogized as particularly adapted to California. We will give this paper in full in a future issue. The reading of the paper drew some of the members out in a discussion concerning the merits of the tree and its proper cultivation, strength, value as timber, medicinal virtues, etc.

Professor Bolander said that a familiar instance of the applicability of trees, in tempering climate might be noticed when coming from the Eastern side of the valley towards Sacramento and Stockton. While in the valley the wind was hot and uncomfortable; on nearing Sacramento or Stockton the traveler became conscious of a refreshing coolness, caused by the existence of trees at those places. He had put a thermometer in the open air on a warm day, and then placed it on the green leaves of a tree, and it showed a difference of eighteen or twenty degrees. If our grain fields were surrounded by trees they would be greatly benefited.

Professor Davidson said that this fact was recognized in Iowa, where they set aside one day in the year to plant trees for that purpose, generally the 1st of May, and that on that day last year it was estimated that upwards of one million trees had already been set out.

Dr. Stout testified to the hardihood of the *Eucalyptus*. He also said that parasites did not attack it, on account of the odor. As to the medicinal qualities of the tree, he had taken a quantity of the leaves and made cigarettes of them, and had constructed also a respirator so that the fumes from the leaves might be inhaled, and had found it of great assistance in cases of sore throat and chronic asthma. For the latter particularly it was very effective and will afford ready relief in case of an acute attack. He had strewn the dried leaves in the basement of houses where there were bad odors, and had found it almost as useful as carbolic acid.

Professor Bolander said that the idea was erroneous that the *Eucalyptus* was fragile and would not stand. The plant should be bought young for transplanting. These trees should be planted at least during the first year of growth, and they will take root and not be easily overthrown. When kept in pots too long, the roots become deformed; this is the reason why some people think they will not grow. The easiest and best way to cultivate these trees is to take a box filled with sandy soil nearly to the top and the remainder covered with sawdust; wet the sawdust slightly, throw the seed over it and gently rap the box with the hand. Keep this under a piece of paper or in the shade and when the seeds sprout they can be taken out like a small cabbage plant and set out at leisure.

Dr. Stont said they should not be supported by a rod or stick placed to close to the trunk since it prevented the branches from growing on the side where the support was.

Mr. Stearns said that when the plants were placed in a pot the tap roots assumed a rotary direction, and when taken out and planted the trees were easily overthrown.

Professor Bolander said the trees should be allowed to grow naturally and the lower branches should never be cut off. At Gen. Naglee's place in San José where he has raised about 60 acres of trees of all kinds the pruning knife is never used.

PADDLE YOUR OWN CANOE.—The man who can make his own fire, black his own boots, carry his own wood, hoe his own garden, pay his own debts, and live without wine and tobacco, need ask no favor of him who rides in a coach-and-four.

USEFUL INFORMATION.

Paradoxes.

Water thrown into a red-hot metallic vessel does not boil, as we should expect, but quietly gathers itself together, forming a more or less perfect sphere, and in that condition floats about gracefully on the hot surface as it slowly evaporates away. If at the same time a very evapoizable substance, as liquid sulphurous acid is thrown in, the water may actually be frozen in the red-hot vessel.

Water boiled in a glass flask until the upper part of the vessel is entirely filled with steam, and then dexterously corked before air can gain admission and placed in cold water, recommences to boil. The boiling is produced by cold instead of heat, and the experiment is known as the culinary paradox.

If steam from water boiling at 212° is passed into a solution of a salt in water, the temperature of the salt solution steadily rises, passing 212°, reaches the boiling point of the solution, and finally the latter also boils at a temperature as high and even higher than 250°, according to its nature. There we have the extraordinary result of obtaining a higher temperature, say 250°, from a lower one, viz., 212°.

If there is anything in nature that possesses a positive character it is light. Yet the physicist may so reflect the light from a given source as to cause it to destroy itself and produce darkness. In like manner two sounds may be made to interfere with each other and either produce silence or increased intensity of sound, at the will of the operator.

How PENCIL LEADS ARE MADE.—Graphite, clay and water are the materials used. The finest graphite, after being finely ground, is mixed with a peculiar blue clay, found only in Bavaria, and the whole kneaded with water to the consistency of putty. This mess is placed in a strong cylindrical iron vessel, in the bottom of which is a hole of the diameter of the lead desired. A plunger forces the mixture out through this small opening, which is received on metallic sheets, which, when filled, are placed in an oven for baking. The softness or hardness of the pencil depends upon the degree of hardness to which the baking is carried. The leads are afterwards broken up into the sizes required. Nine different sizes of leads are made, and numbered from 1 to 9. The trade is mostly supplied from manufactories in Philadelphia.

DURABLE SOAP BUBBLES.—To obtain soap-bubbles that will show the changing colors of the rainbow, the directions are as follows: Take half a pint of water that has been boiled and become cold, and put into it a quarter of an ounce of Castile soap, cut up fine. Put this into a pint bottle, and set it in hot water in a saucepan, on the fire; there let it remain an hour or so, now and then give it a good shaking till the soap is dissolved. Let the fluid stand quiet for the impurities and coloring matter of the soap to settle; then pour off the fluid and add to it three or four ounces of glycerine and your soap-bubble solution is ready. In an ordinary way you may blow the bubbles easy with a tobacco pipe, but if you wish to attain scientific perfection, you had better employ a glass pipe. By adding a larger quantity of glycerine you may make these bubbles so strong that you can play battledore with them.

A PRETTY EXPERIMENT.—It is well known that a light ball, as of cork, may be sustained for some time near the summit of a vertical jet of water, when such jet is steadily maintained. The experiment becomes more striking when a vertical blast of air, issuing from a large bellows is substituted for the water; as in this case there is no apparent support for the ball, which comports itself in a very amusing manner in mid air.

When a strong blast cannot be obtained, if a slender wire, about four times the length of the diameter of the ball, be passed through its center so as to have one-fourth its length projecting from one end, and one-half from the other, the balancing is more readily obtained, as any considerable change in the relative positions of the center of gravity and the point of support is prevented by the movement of the rod.

To MAKE MUCILAGE.—An excellent quality of mucilage can be made of gum Arabic and water. No other ingredients are necessary. It will be thick and sticky or thin and watery, according to the proportions of gum and water. If not thick enough, add more gum; if too thick for convenient use, add more water. The second quality of gum (usually five cents per ounce) answers as well as the first quality, although it is not quite as clear. The difficulty with the purchased article of mucilage is that there is a deficiency of gum—water being more profitable to sell than gum.

THE RATTLE OF THE RATTLESNAKE is for the purpose of imitating the sound of the Cicada and other insects that form the food of many birds, and so attract the latter within the reach of the serpent; so says Professor Shaler.

COAL VS. MAN POWER.—The combustion of 300 pounds of coal under a steam boiler will produce a power equal to the mechanical force exerted by a man for an entire year.

PAINT FOR METALLIC ROOFS.—In selecting a paint that is to be applied to metallic roofs, we should have regard not only to the preservative qualities of the paint, but to its relations to heat and light. Those who have had experience in the matter, know that the lead paints (white lead, red lead, etc.) do not form a good covering for metals. Indeed, in many cases they have been found to promote the corrosion of the metal to which they have been applied. This probably arises from the fact that when ordinary lead paints are mixed with oil, the oil forms a chemical compound with the oxide of lead, and the carbonic acid of the carbonate of lead is set free. We should expect, therefore, that the nascent carbonic acid would act upon such metals as iron, zinc, etc., and we must remember that ordinary tin plate consists chiefly of iron.

Lead paints are therefore to be avoided as being corrosive, and so are some greens and blues, as they contain copper in a form which readily yields its acid to iron or zinc. Our only safety, therefore, lies in the use of earthy or ochreous paints, and of these we should select those that are of a rather light color. Pure white or even very light colors are objectionable from the fact that a white roof has a very disagreeable appearance; while on the other hand a black roof will become so hot that the paint will blister and peel off.

Neutral grays are not only least obtrusive, but least powerfully acted on by the sun's rays, and should therefore be selected.

CEMENT FOR AN AQUARIUM.—One of the correspondents of the *Rural New-Yorker* inquired recently concerning a cement for an aquarium, and is advised to use red lead putty. There is, however, a cement known as "aquarium cement," which adheres so firmly to glass and iron that there is no possibility of breaking it off. It forms a perfectly water-tight joint, and it does not taint the water as many lead cements are apt to do. To prepare it take equal measures of fine sharp sand, plaster of Paris and litharge; mix them well together and make them into a stiff putty with boiled linseed oil. Apply in the same manner you as would any other putty, and allow two or three days to dry. As regards the materials, any clean, fine and sharp sand will answer.

Cement prepared as above is exceedingly useful for more purposes than making aquaria. For stopping leaks around chimneys, and for many other uses that will readily suggest themselves, it is invaluable.

HOW TO FASTEN RUBBER TO WOOD AND METAL.—As rubber plates and rings are now-a-days used almost exclusively for making connections between steam and other pipes and apparatus, much annoyance is often experienced by the impossibility or imperfection of an air-tight connection. This is obviated entirely by employing a cement which fastens alike well to the rubber and to the metal or wood. Such cement is prepared by a solution of shellac in ammonia. This is best made by soaking pulverized gum shellac in ten times its weight of strong ammonia, when a slimy mass is obtained, which in three to four weeks will become liquid without the use of hot water. This softens the rubber, and becomes, after volatilization of the ammonia, hard and impermeable to gases and fluids. *American Artisan.*

THE WATERY DEPTH.—Water has been proved to be more compressible than some solids. Its density increasing, therefore, as the depth increases, there is a theoretical depth at which water would become as dense as, say, iron, and at which, therefore, iron would cease to sink. Practically, however, it is probable that there is no depth in the ocean to which any known solid that sinks at the surface will not descend.

ONE of the most marked of organic differences between the sexes is that of muscular action. No one who carefully watches the muscular acts of women will fail to perceive a tendency to do them with a sort of rush, with a superabundance and sudden exertion of force, rather than by the gradual application of the precise amount by which the end in view can be secured.

SOFTENING OLD PUTTY.—In removing old broken panes from a window, it is generally very difficult to get off the dry, hard putty, that sticks around the glass, and its frame. To obviate this, dip a small brush in nitric or muriatic acid, and go over the putty with it. Let it rest a while, and it will soon become so soft that you can remove it with ease.

TO PROTECT WALKS FROM WEEDS.—Take one gallon of gas-tar and about half a pound of air-slacked lime, boil and incorporate them well together, then apply the mixture with a common long-handled whitewash brush. This will dry in a few hours if put on boiling hot, and will kill off all the young weeds and prevent their growth.

THE MICROSCOPE reveals to us the fact that the surface of our bodies is covered with scales like a fish; a single grain of sand would cover 150 of these scales, and yet a scale covers 500 pores. Through these narrow openings the sweat forces itself like water through a sieve.

HINT FOR MECHANICS.—Ed. Skinner Middleton, New York, says by rubbing chalk on a square the lines and figures are filled up, and can be much more plainly read. This is especially useful for near-sighted persons.

GOOD HEALTH.

Apples Very Wholesome.

Many persons do not value apples sufficiently as an important article of diet. Besides containing a large amount of sugar, mucilage, and other nutritive matter, this fruit contains vegetable acids, aromatic qualities, etc., which act powerfully in the capacity of refrigerants, tonics, and antiseptics, and when freely used at the season of mellow ripeness prevent debility, indigestion, and avert, without doubt, many of the "ills which flesh is heir to." The operators of Cornwall, England, consider ripe apples nearly as nourishing as bread, and far more so than potatoes. In the year 1810—which was a year of much scarcity—apples, instead of being converted into cider, were sold to the poor, and the laborers asserted that they "could stand their work" on baked apples without meat; whereas a potato diet required either meat or some other substantial nutriment. The French and Germans use apples extensively, as do the inhabitants of all European nations. The laborers depend upon them as an article of food, and frequently make a dinner of sliced apples and bread. There is no fruit cooked in as many different ways in our country as apples, nor is there any fruit whose value, as an article of nutriment, is so great.

An old gentleman recently stated to us that every fall he used to have a severe sickness, but since he bought, during the season, a barrel of good apples, for himself alone, and ate the whole barrel in two or three months, he had every year saved himself from this sickness without wanting a doctor.

Liebig on Apples.

Justus Liebig, the great chemist, thinks that the importance of apples as food has not been sufficiently estimated or understood. He says: "Besides contributing a large proportion of sugar, mucilage and other nutritious compounds in the form of food, they contain such a fine combination of vegetable acids, extractive substances and aromatic principles as to act powerfully in the capacity of refrigerants, tonics and antiseptics; and when freely used at the season of ripeness, by rural laborers and others, probably maintain and strengthen the power of productive labor."

TAKE CARE OF YOUR HEALTH.—Few people realize what health is worth until they lose it. It is easier to prevent disease than to cure it. The character of our farming is undergoing changes. We are using more machinery, keeping better stock, raising choicer varieties of fruit, grains, potatoes, roots and grasses; are buying more or making better manure. Now, all this requires brains. We are aware that there is a great deal of nonsense written on this subject. But it is undoubtedly a fact that a man cannot long use his brains as an intelligent, enterprising American farmer is now compelled to do, and work and worry at the same time, without abundance of nutritious food. If he undertakes to do it on fat pork, potatoes, bread, and cake, his health will certainly give way. The American farmer of today needs and must have more fresh meat. Better patronize the butcher than the doctor; better sell fewer eggs and buy less medicine. We have heard a farmer say: "Food that is good enough for my men is good enough for me." He may have been right. But the farmer who thinks and works too, needs better food and cooking than he who merely works with his hands. *American Agriculturist.*

USE OF FRUIT.—Instead of standing in fear of a generous consumption of ripe fruit, one should regard it as decidedly conducive to health. The very disease commonly assumed to have their origin in the free use of all kinds of berries, apples, peaches, cherries, pears and melons, have been quite as prevalent, if not equally destructive, in seasons of scarcity. There are so many erroneous notions entertained of the bad effect of fruit, that it is quite time a counteracting impression should be promulgated, having its foundation in common sense, and based on the common observation of the intelligent. No one ever lived longer, or freer from the attacks of disease, by discarding the delicious fruits of our country. On the contrary, they are very essential to the preservation of health, and are therefore given to us at the time when the condition of the body, operated upon by deteriorating causes not always comprehended, acquires their grateful, renovating influences. Uripe fruit may cause illness, but fresh, ripe fruit is always healthful. *Country Gentleman.*

EMBALMING AMONG THE EGYPTIANS.—Dr. Benjamin W. Richardson, in a lecture upon the science and art of embalming the dead, remarks that three different methods were practiced among the Egyptians. First, embalming proper, by the introduction into the body of certain odoriferous essences or antiseptics, aided by after-immersion in saline solutions; second preservation by simple extraction of water from the tissues; third, by the injection of preservative solutions into the blood-vessels. He remarks that the first of these methods includes the true Egyptian and Greco-Egyptian process of preservation, as detailed at full length by Herodotus, and consisted essentially in eviscerating the body and employing aromatic preservatives, and in exposure to a solution of common salt, possibly with the addition of some soda.

FRICITION.—One of the most gentle and useful kinds of exercise, is friction of the skin, either by the naked hand, a piece of flannel, or what is still better, a flesh brush. This was in great esteem among the ancients, and is at present among the East Indies. The whole body may be subjected to this mild operation, but chiefly the belly, the spine, or backbone, and the arms and legs. Friction clears the skin, resolves stagnating humors, promotes perspiration, strengthens the fibers, and increases the warmth and energy of the whole body. In rheumatism, gout, palsy, and green sickness, it is an excellent remedy. To the sedentary, the hypochondriac, and persons troubled with indigestion, who have not leisure to take sufficient exercise, daily friction cannot be too strongly recommended as a substitute for other means, in order to dissolve the thick humors which may be forming by stagnation, and to strengthen the vessels. But, in rubbing the bowels the operation ought to be performed in a circular direction, as being most favorable to the course of the intestines, and their natural action. It should be performed in the morning, on an empty stomach, or, rather, in bed, before getting up, and continued at least, for some minutes at a time.

WARM BATH IN INSANITY AND IN BURNS.—Dr. Wilkins in his report to the California Legislature, on Insanity, refers to the warm bath as a favorite treatment in Italy and in some parts of Holland and France. He often saw a dozen patients in one bath-room with their heads alone in sight, the bathing tub being covered except a hole for the head. There they usually remain from one to three hours, in some instances from six to eight hours, and occasionally for days at a time. Dr. Gudden, of Zurich, kept a man thus immersed for five days, on account of excitement connected with bed-sores. The patient is reported to have slept well during a portion of the time, and to have been cured of the sores. No exhaustion or ill consequence followed. A case is related of a man scalded by steam, and not insane, who was placed by Hebra in a tepid bath and kept there for three weeks, until a new cuticle had formed over the entire surface. This patient recovered without inconvenience. The water was kept at a temperature most agreeable to the patient. Thus employed it is said to relieve effectually the extreme pain from the burns.

XYLOL IN SMALL-POX.—A good deal of interest has been excited by the published success of xylol dimethylbenzol, one of the many products of the distillation of coal-tar as a remedy for the small-pox, for which it has been applied for a considerable time in Berlin by Dr. Zeulzer. The experiments are stated to have proved very satisfactory, and its use in one of the principal hospitals of Berlin is becoming very extended. The dose of this substance for an adult is from ten to fifteen drops, and from three to five for children, every few hours. No injurious effect has hitherto been noted, even when given in considerably greater quantity. It is applied from the earliest period of the disease till the complete drying up of the pustules. The best method of administering the xylol is in capsules, which are now furnished, containing three, eight, and twelve drops, although it can be given drop by drop in wine or water. Toluol appears to have no effect.

EAT FRUIT—FRUIT VS. LIQUOR.—The late David Thomas often made the remark that within the circle of all his acquaintances, he did not know a person who was decidedly fond of good fruit, who became an intemperate man. He considered the two tastes as distinct and antagonistic. There is undoubtedly much truth in this remark. It appears that there is a natural demand in the system for fruit, and this demand not being always met, many are tempted to fill this vacancy by drinking alcoholic liquors. One of the best things we can do, therefore, while we urge the positive influence of temperance principles, and the prevention of an intemperate appetite by abstaining entirely from the sipping of liquor, we may endeavor, by the extended culture of fruit in all its kinds—so as to extend the circle of supply throughout the year—to assist this benevolent exertion by lessening or decreasing the temptation to supply its lack above stated.

A NOVEL SMALL-POX THEORY.—A German physician has lately started the theory that the fearful disease known as small-pox originates from an excess of albuminous matter in the blood, and that this is to be prevented by the administration of common salt. The habits of children in indulging too freely in sweetmeats he considers one great cause of this undue development of albumen, and coffee and tea, if highly sugared, tend also to excite it in adults. An organic acid such as lemon juice, he considers the best means of freeing the blood, when clogged with too much albumen, and he alleges that by taking these simple remedies in the way of precaution, he has for upwards of twelve years past, frequented or taken up his abode in the most pestilential small-pox hospitals of Europe and South America with entire impunity.

POISON OAK.—Somebody recommends as an antidote for poison oak a salve made of equal parts of butter, salt, and saleratus; and that a person who expects to be exposed to the poison oak, should take a small box of this salve with him, and slightly anoint the hands and face. This will oftentimes prevent the poison taking effect; but if it has taken effect the salve is a sure and speedy cure.



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SAN FRANCISCO:

Saturday, July 13, 1872.

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COMMENCEMENT DAY.—The Commencement exercises of the University at Oakland, will take place on Wednesday next, the 17th inst.

The re-union of the Associated Alumni of the Pacific Coast will follow immediately after the commencement exercises. This gathering will be represented as usual, by the talent, learning and refinement of the coast, and the proceedings will have an interest unsurpassed by that of any other re-union held in this State.

The University oration will be pronounced by Wm. A. Scott, D. D., and the poem by E. R. Still, M. A.

The Alumni oration and poem will be delivered at 3:30 P. M. The orator of the occasion is Colonel W. H. L. Barnes, A. M.; the poet, Thomas Newcomb, Esq. These exercises will be followed by a business meeting of the Association.

The usual evening festivities will begin at 5:30 P. M., at the hall on Sixth street. The Alumni and their wives, with invited guests, are entitled to seats at the table.

We have received the premium list of the Bay District Horticultural Society of California, for its second annual exhibition. The lists can be had at this office or of F. A. Miller, Secretary, 622 Clay street.

CANTELEUPS.—Fine, ripe canteleups, were on sale at several of the more prominent fruit stands on Market street as early as the 4th, retailing at 50 cents each.

Editorial Notes Among the Farmers.

[Continued from last issue.]

Captain O. Allen.

Having been introduced to Capt. Allen, we will in turn introduce our readers. You see before you a hale, hearty, old gentleman of about sixty-five years—a countenance that beams with kindness, benevolence and intelligence—a manner that at once grasps you by the hand, and steals your heart, and makes you feel at home and at ease. Every inch, a practical man and thorough mechanic. System is written in every line of his face, and in every action. Nor is he unknown to fame, being the inventor and patentee of many useful and labor-saving tools and machines. Among these we may mention the whale gun and bomb-harpoon, now universally used by whalers the world over, and which added five per cent. to the value of the whales that fill the briny deep. He came to California in 1849, in the bark May Flower, which brought out the stern-wheel steamer Lawrence—one of the first steamers that plied on the Sacramento and San Joaquin rivers. He put this steamer together, and launched her at the place known as the New York of the Pacific. From these circumstances the title "Captain" attached to him, and as he says he has never been able to "shake it off." He has seen and passed the ups and downs of California life, and seventeen years ago, after having originated, located, built, and set to work the Pioneer Paper Mill of the Pacific coast, on Paper Mill creek, in Marin county, in consequence of placing too much confidence in his fellowmen, he found himself penniless with a wife and two small sons to support. Right here and then he started the dairy business, and from that day to the present he has followed it up, with at least, tolerable success. He now owns 2,014 acres of land in one body where he lives, valued at \$40 per acre. Has it stocked with six hundred head of cattle, and is milking 225 dairy cows, and turns out from 38,000 to 40,000 lbs. of butter a year. Has at times milked as high as 350 cows, and made 75,000 lbs. of butter a year. Has sold no butter this year less than thirty cents a pound—when he cannot get that price he proposes to pack it. With this introduction and comments on business we will accompany the son Charles Allen into the dairy house and talk of the

Practical Workings of the Dairy.

The accompanying cuts which are prepared in a rough manner from memory, will serve to give the reader a birds-eye view of the immediate dairy establishment. Let us premise by saying that every building about the place and every cow yard and pig pen is abundantly supplied with cold spring water, conducted through lead pipe from a living spring over six hundred perpendicular feet above the highest building on the place, and nearly a mile away on the side of a hill or mountain. The center of the milking yards is located on the apex of a gradually sloping hill, a fence dividing the yards so as to have a less number of cows in each. The floor of the yards being a natural granite rock, can never be muddy, and sloping either way is always dry and clean. In the small house on a line with the division fence is a milk receiver into which the milkers from either yard pour their milk as fast as their buckets are filled. As the milk is poured into this receiver it all passes through a strainer and then through a conducting pipe into the milk house, and into another receiver, from which it is drawn through a faucet into a bucket, which is provided with another strainer. From this bucket it is poured into the pans which have already been arranged on the racks around the outer edge of the milk room. By this arrangement it will be seen that there is no occasion for the milkers to go into the milk house with their dirty feet—and every room in it is kept as clean as a parlor. In the centre of the milk room is the milk skimming table in the center of which is a funnel to receive the sour milk, and from the bottom of this funnel is a lead pipe bent in the form of the letter S and leading some hundred feet down the hill to the sour milk vats, and from these it is drawn out into the pig troughs as occasion requires. The milk always resting in the lower bend of the letter S prevents the smell from the sour milk vats coming into the milk room. The cream is removed and turned into the churn, which is simply a square box suspended and revolving upon an axle fastened to the heads but not passing through the churn. This churn is run by a horse upon an endless chain horse power in

the basement. Upon the partition near the churn may be seen three thumb springs, one connected by a wire with a bell below, and is pulled to ring the bell to start or stop the horse. One is connected by a cord with an upright cylinder on the horse power on which is ingeniously fastened a raw-hide riding-whip so situated that by pulling the thumb-spring the whip will hit the horse in case he does not start at the ringing of the bell. The other thumb-spring connects with a brake to stop the horse power and churn in case the horse does not heed the stopping bell, and to prevent his starting when taking up the butter. So that the labor and time of a driver is saved, and the butter maker in the churn room has entire control of the power and churn machinery.

The churning completed the butter is removed to the butter room and placed upon the butter worker. This is an invention of Captain Allen's and consists, as may be seen in the cut of a round table with one leg, the table leaf inclining at a moderate angle with the leg and containing a groove around the edge on the upper surface, so as to lead any fluid to the discharging spout. Above this stationary table, about two or three inches, is another table leaf of a little less diameter, resting upon an upright axle or leg so as at all times to keep the same incline as the lower one, and so supported that it may be made to turn upon its axis or upright support. To complete the machine a lever is suspended with a universal joint in such a position that it may be brought in contact with the upper surface of the revolving table at every point. The center of this lever is flat shaped like a two-edged knife.

The butter to be worked is placed on the revolving table and cut and pressed and worked, being kept in any desired position under the lever by turning the table and being made to assume any desired form by the motion of the lever itself. The buttermilk in the meantime falls from the upper table to the lower and is conducted into a vessel standing under the discharging spout.

When the buttermilk is sufficiently worked out and salt thoroughly mixed in, the butter is cut into rolls of a proper size for moulding into two-pound hexagon-shaped rolls. This is done by a butter moulder also, the invention of Captain Allen. It consists of a pair of crooked tongs something in the shape of the tongs used to handle ice with, the moulds being divided into halves, and one-half being attached to each prong of the tongs, in such a manner that the butter may be clasped and firmly pressed in shape. This being done the tongs are opened and the moulded roll is deposited in another half mould of equally the same size and form which has been laid on the cooling table, covered with a wet cloth cut in proper shape and size to wrap the roll of butter in. The cloth is then brought over the butter in proper shape and the other half mould is placed on to keep the roll in proper shape until hardened by cooling. These rolls are then set upon end and stamped with the letter A, the trade mark by which the butter is known and by which it is sold. Butter with this brand brings the highest price and always finds eager customers.

General Remarks.

There are many little things connected with this establishment which go to make up a perfect whole, but which in mere notes we could not mention. We recommend all those who are in the dairy business to visit and profit by it, and those who contemplate embarking in the business cannot spend their time and money better than to visit Capt. Allen's dairy, if they had to travel a thousand miles and spend a month's time. We also visited a number of other dairies, and among them is that of L. W. Walker, who also has a fine establishment, but we have no space to describe them.

Improving Dairy Stock.

We are glad to be able to state that all the best dairymen recognize the importance of improving their dairy cattle by the use of thorough bred bulls. As a general thing we find they have used the short-horned Durham breed, and mostly give it the preference for size, disposition and milking properties. Those few who have used the Ayreshires are very partial to this breed, and have no desire to change. Others who have had the Devons, consider them well adapted to the hilly country, and among the best of milkers. Our notes among the vine-growers of Sonoma valley will appear next week.

SEVERAL enterprising citizens of Baltimore have erected an establishment in one of the West India Islands for the purpose of canning the tropical fruits of that region, and are receiving every encouragement from the Government authorities.

Alcohol in Wines.

Our article on California Wines, in the Press of June 1st, has attracted considerable attention and called out some candid criticism. We are glad it has. The wine industry of California, in our opinion, is destined to become at no distant day, one of the most, if not the most important and valuable industries of the State. It is therefore of the highest importance that everything connected with this industry should be fully and candidly discussed and correct conclusions arrived at, principles established and practices settled. To this end we invite candid discussion and reliable facts.

A practical wine maker of Sonoma County prompted by the article referred to and the discussion that has followed, has undertaken to test, with reliable instruments, the wines of all the principal manufacturers of Sonoma and Napa Counties. We will therefore be able soon to lay before our readers the figures showing the per cent. of alcohol these wines contain.

We hope the Vine Growers and Wine and Brandy Manufacturers' Association will take steps to have the wines in all the districts of the State similarly tested. Such information will be very valuable as a guide in wine making in the future.

For the information of such of our readers as may not have the data at hand, we append a table from Brande's Chemistry, showing the percentage of alcohol in the various kinds of wine from different countries. This table will enable those who wish to form an opinion as to what amount of alcohol California wines for table purposes, and for a popular beverage ought to contain.

It will be seen that the cheap and popular French and German wines—the different clarets and the Rhenish wines as we have stated in the article referred to, only contain from 7 to 10 per cent. of alcohol. The heavy wines which are not used by those people, either on the table, or as a common beverage, contain more.

PORTUGUESE WINE.	
Port contains 14.37 to 25.83 per cent. of alcohol	
Bucella contains 18.43 " " "	
SPANISH.	
Sherry contains 13.98 to 23.86 per cent. of alcohol.	
Malaga contains 17.56 to 18.94 " " "	
MADEIRA AND CANARY ISLAND.	
Madeira contains 14.09 to 24.43 per cent. of alcohol.	
Malmsey " 12.86 to 16.40 " " "	
FRENCH.	
Claret contains 12.91 to 17.11 per cent. of alcohol.	
Claret Chateau Latour 7.75 " " "	
Claret Vin Ordinaire 8.99 " " "	
Champagne contains 11.30 to 13.80 " " "	
Burgundy contains 12.16 to 16.60 " " "	
Hermitage contains 12.32 to 17.43 " " "	
Sauterne contains 14.23 " " "	
Frontignau contains 12.79 " " "	
GERMAN.	
Hochheimer contains 8.88 to 14.37 per cent. of alcohol.	
Johannisberger contains 8.71 " " "	
Rudesheimer contains 6.90 to 12.92 " " "	
Rhenish contains 7.00 to 7.58 " " "	

Silk—Now for Information.

The people of the State have been for two or more years looking to the silk growers for information as to the nature of the industry of raising silk. And the silk growers have been looking to the California Silk Manufacturing Company to encourage their business, and to fix a paying price for their cocoons. The Silk Manufacturing Company have now been in operation for over a year, and have manufactured a large quantity of foreign and home-grown silk. Now we want some reliable information as to the value of the business for purposes of investment. This company will have its annual election meeting on the 5th of August next. Let's have some more light about the business. We want to know, not what this, that or the other one thinks can be made by feeding silkworms and producing cocoons; but what has this year or any other year been made in California at the business. And if there has not been a dollar made over cost of production, let us hear the truth of the matter.

And if the Silk Manufacturing Company can say just what they can pay for good California grown cocoons, let us know what it is.

ARMY WORM.—We understand that the army worm have made their appearance in full force in several of the vineyards in this vicinity, and in one instance, have destroyed six acres of bearing vines. The proprietors of the vineyards attacked have succeeded, however, in heading off these destructive creatures by the application of running water through the vineyards. These worms have also made said havoc with some of the alfalfa lots near town.—Yolo Mail.

Combined Pencil Sharpener, Holder and Twine-Cutter.

This little invention, though simple in appearance and construction serves as a very convenient and almost indispensable instrument to clerks and other persons who, by the nature of their occupation, are compelled to frequently use a pencil. The pencil sharpener, shown on the front side of the cut, is made in the ordinary manner, and to one side of it is screwed a clasp which is properly curved to receive the pencil. Between the clasp and sharpener is a blade or knife, which extends from one end to the other of the sharpener. In the present instance the edge of the blade is represented as rounded from end to end, which is a very convenient form, although other forms, as a hook, could be used as well.

Between the clasp and sharpener, on the opposite side, is a pin fastening by means of which the instrument can be fastened to the clothing. For using the knife the device will be most convenient when attached to the vest near the right vest pocket. The use of the sharpener and clasp will be evident to any one, and they are rendered much more useful and convenient by being connected together in the manner described, and attaching them by means of a pin to the clothing. The knife serves the purpose of a knife or a pair of shears, to cut twine when the wearer is tying up bundles or desires to cut a string. The simplicity of this little instrument and its evident utility will do



much towards introducing it into general use, and clerks, dry goods dealers, etc., will readily appreciate its value. The device has recently been patented through the SCIENTIFIC PRESS Patent Agency, by Evan A. Edwards, of San Buenaventura, Santa Barbara Co., Cal.

Pasturage in the Mountains.

We learn from parties who have taken large herds of animals from the lower plains and valleys, to the valleys and plateaus of the Sierras, that the prospect of a splendid feeding season was never better. "Bunch grass," which generally occupies the slopes and tops of the great ridges, where but little timber prevails, is this year unusually abundant and seems not to have been materially injured from last year's severe grazing.

Many had supposed this grass to be an annual, at best a biennial, but now it is known to be perennial; and the grazing of the same during the season when it would naturally perfect its seeds, instead of destroying the grass utterly, is found to cause a thickening up and consequently producing more feed than before.

It is not improbable that the summer's grazing is less exhaustive to the roots of this grass, than would be the annual growth and ripening of its seeds. Upon the more level lands of the valleys of the mountains, there are several varieties of indigenous grasses and clovers, that this year seem to be unusually fine; these are admirably adapted to the feeding of cattle or the larger animals of the herd, whilst the sheep and goats climb to the highest peaks and pinnacles of the ranges for their favorite "bunch grass," and other Alpine herbage. More than ever before, these valuable pasture grounds are being occupied this year, with the view of permanently holding them till a title is secured from government.

RIPE GRAPES, or if not fully ripe, so near it as to be very palatable and marketable, are beginning to appear at a few of the city fruit stands.

The Whale—Its Agricultural Value.

Had we not given the above heading to our article, there might be some ready to question the propriety of illustrating a whaling scene in an agricultural journal; but we think we can clearly show how whales are to become one of the props to a successful Pacific coast agriculture.

Our grain fields are every year diminishing in their yield of the cereals; lands that ten years ago readily yielded from 30 to 40 bushels per acre, are already, by a system of continued cropping, with no return of the fertilizers to make good the waste of those properties that constitute the material of the straw and grain so reduced that their annual production hardly averages 15 bushels to the acre; and still lessening every year.

Chemical analysis clearly shows the important constituent of the soils so necessary to the production of the cereals, to be the phosphate of lime. Repeated cropping rapidly exhausts the soil of this property, and it is this that has rendered so large a part of New England and other Eastern States, unproductive of wheat, without the direct application of phosphates.

With these phosphates however, many of the more intelligent class of farmers are bringing their lands back to a degree of production that is surprising even to themselves. England once suffered the same kind of deterioration, but the application of phosphates renewed the fertility of their soils to that degree that

thirty bushels is a common average yield. In some instances, as in parts of France, vast quantities of mineral phosphates are applied to advantage; but in England and the Eastern States their chief reliance is upon ground bones, usually the refuse of the different factories where bones are converted into knife handles, buttons, etc. The trade in bone phosphates has assumed immense importance, and is every year increasing. Every scrap of bone to the size of your finger is now everywhere carefully saved and should be as carefully returned to the soil.

On the coast of California from the Bay of Monterey southward to Cape St. Lucas of Lower California, the shore and beach of the ocean is literally lined with the bones of the whale; thousands on thousands of tons could be gathered up, taken to the bone mill and converted into bone dust, that would fertilize thousands of acres, bringing the same back, from a condition of comparatively unproductiveness to one of unequalled fertility.

This vast bank of bones can be had for the mere gathering; and we learn that a company is already organized to test the feasibility of putting them to a practical use. Our cut is simply a spirited illustration of the capturing and cutting-in of the whale, as conducted from the ship; whilst all along our coast the capturing is done in boats from the shore; the whale killed, is towed to, and tried out upon the shore; the carcass allowed out to drift seaward, the flesh is consumed by sharks, and the bones are drifted upon the beach.

We don't believe a word about Jonah having interviewed the whale on purpose to see what use he could make of the interior after the blubber had been removed from his outside, for history does not affirm that he was either agriculturist, knife-handle or button-maker.

Bee Keeping.

We always like to see a few hives of bees around every farm house, and to us they seem as much a part of the farm stock as do the turkeys or chickens. In fact, they are a far more reliable stock, because the young of bees do not require the least attention at our hands as do silkworms, young turkeys and chickens. Only give the old bees a home, and they will not only provide themselves with food, but will feed and rear their young without any assistance from us; and will lay up such ample stores as to leave a large surplus of honey beyond supplying their own wants.

Besides doing all this, their annual increase is from one to three hundred per cent., or from one good strong swarm as many as one always, and not unfrequently three new swarms are thrown off or artificially made every season. Of course this enormous increase soon stocks the country to its utmost capacity to furnish food, but this is no argument against their being everywhere kept; for like other stock which a man may have beyond his ability to feed profitably, he always knows what to do with it.

There never was a time in the history of bee culture, that a good swarm of bees would not bring more than it really cost, for it is difficult to say that their cost is anything more than the hive they are given to work in, so that a profit could always be derived from their sale, even at very low rates. We believe very many who never yet kept a bee, would find it greatly to

their gratification to keep a few hives, learn their habits and how to take care of them, and thus secure to themselves an abundance of honey for their own tables, and have a considerable surplus to dispose of.

Just see the difference; a box is required for every bushels of fruit you send away, and only a little better than a fruit box as a hive, will last a swarm of bees for many years. Your fruit may bring you four or five cents a pound, your honey 20 or 25 cents.

Cherries—Their Value.

Those who are able to pay the very high price of 20 or 25 cents a pound for the best cherries are in ecstasies over the superior quality of this fruit the present season, and it is really superb. There are of course cheaper cherries, some that can be had at ten cents a pound, but who wants them except for cooking purposes, if able to buy the better ones? And why raise these inferior cherries at all, when it is just as easy to grow a tree bearing the best variety as one bearing the poorest.

We have not yet half cherries enough, and there never will be till they are so plentiful that the best can be sold in our market at ten cents a pound; and then even, it will be difficult to say how many more will be required to supply the demand along the railroad lines within good keeping distance from the trees. We hear of two or more parties who are going quite extensively into the growing of cherries, and we believe they will find it a good business, as they are already engaged in their culture to some extent and have studied locality, climate and soil.

While cherries are yet plentiful though high priced, in all our markets, we would again remind those who are desirous of raising cherry stocks, that they can be grown easily in moist soil by cracking the pits and planting them at once; and that with proper care, a growth of ten or fifteen inches can be made before the autumn frosts.

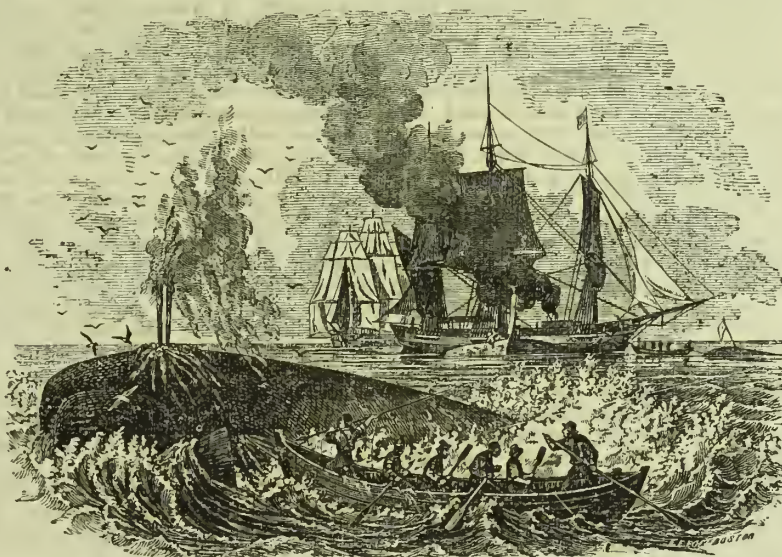
A Fitting Tribute.

We take from the Sacramento Union the following extract of the proceedings of the California Pioneers of Sacramento at their banquet on the 4th of July:

The toast was given, "Our pioneer agriculturists, the true originators of our State's prosperity."

Response of I. N. Hoag.

Mr. President and Gentlemen: The toast just read, and to which, through the partiality of your committee, I have, perhaps very inappropriately, been called upon to respond, is now generally accepted as an undisputed and almost unqualified truth. Indeed it is so plain now that "our pioneer agriculturists are the true originators of our State's prosperity" that it seems almost preposterous for me to detain you on this historic day by any extended comment. So much has been said on the subject of agriculture, so much has been written upon it by the poets, philosophers and statesmen both of ancient and modern times, that one needs the advantages of inspiration to please, interest, and instruct. I do not mean that inspiration that comes from pure California wine, which to some extent we all feel here today, but that inspiration which comes from superior knowledge, from long tarrying and deep drinking at the fountains of Nature; that inspiration which Homer felt when he sang of agriculture to the ancient Greeks; that inspiration which moved and sustained Virgil when he indited that most perfect of all agricultural poems, the Georgics, to divert the minds of his countrymen from the evil practices and idle habits contracted through years of civil war, and instil them with a love of rural life and industrious pastoral pursuits; that inspiration, indeed, that fired the soul and quickened the mind of one of our most distinguished countrymen when he wrote that immortal book "What I Know About Farming." Mr. President, this was originally a mining State, and we are all miners. In the early days of the history of this country we heard of the discovery of gold in California. The news spread on the wings of the wind. The world was electrified. The bravest, the most enterprising and intelligent of all climes and all nations rushed for the Sierra Nevadas of the Pacific Coast. Then came the days of red shirts, heavy boots and slouched hats. Then we drove bull teams, packed mules, and went prospecting. Then we became skilled in the domestic arts. Then we boiled beans, turned flap-jacks and fried bacon. Then we penetrated the mines, sunk our shafts and rocked the cradle. Yet, strange to say, there were then no women or children in the country! We were successful in our efforts. We found and dug the gold; and for years we exported from fifty to sixty millions of dollars worth of bullion annually, and imported all the tools we used, all the food we ate and all the clothes we wore. We revolutionized the monetary systems and commerce of the world, and yet as a people, as a commonwealth, we were poor. Our municipal corporations, our towns and cities, our county and State Governments were all in debt, and annually increasing their indebtedness! Our whole people lived from "hand to mouth." We had no agriculture. We thought our State not adapted to its success. We sent abroad our gold to quicken and maintain the industries of other States, and to support and enrich other people. Such was our mining life and experience—but a repetition of the experience of all other States and communities that have undertaken to live without agriculture. Such a state of things could not last. And, just in time to save us, during the years 1852 and 1853 there appeared upon the stage of action a few men of superior foresight and practical wisdom. They were not men of words but of deeds. They, too, had been miners and generally successful, but they believed that there was gold in the valleys, as well as in the mountains, and they straightway set themselves to work to prove it. Did time permit, we would be happy to give a brief statement of facts connected with some of the first agricultural enterprises in different parts of the State. We will content ourselves, however, by naming some of the men who inaugurated them, and the localities in which they commenced: Geo. C. Yount, J. W. Osborne and S. and W. N. Thompson of Napa; Rev. A. H. Myers, E. L. Beard, John Lewelling, Wilson Flint and Dr. Haile of Alameda; William Wolfskill, the Sainsevain Brothers and B. D. Wilson of Los Angeles; Wm. McPherson Hill and General Vallejo of Sonoma; S. C. Davis of Yolo; John Wolfskill of Solano; Dr. E. S. Holden and J. G. Overhiser of San Joaquin; J. R. Nickerson and Dr. J. R. Crandall of Placer; General John Bidwell of Butte; General Sutter of Sutter county; G. G. Briggs and Beach & Shepard of Yuba; Cary, Peebles, William Daniels and Louis Prevost of Santa Clara. And if we come nearer home we see before us here to-day some whose names rank among the first of our pioneer agriculturists. We may name A. P. Smith, E. F. Aiken and T. K. Stewart. Let us do honor to these men as Pioneers. They opened the road to our State's prosperity. They inaugurated industries that are changing the currents of commerce and bringing our own gold back to our shores. From importers we have come to be exporters of all the great leading agricultural products. In wheat, wool and wine we are taking first rank among the best agricultural States of the world. The value of our agricultural products last year aggregated over sixty millions, and this year it will wear a hundred millions. Therefore we endorse the sentiment: "Our pioneer agriculturists—the true originators of our State's prosperity."



CATCHING THE WHALE.



Make Home Happy.

I was passing a few days in a lovely village. Coming in from a walk I said to a friend, "How many fine residences you have!"

"Yes! but many of them are haunted."

"Indeed! what form does the spirits take?"

"The worst of forms. Those of dissolute, reckless, ruined, or at best, 'fast' sons. There have been a set here that have acted and reacted on each other, and every step seems to have been downward."

"But my boys," said the aged father, "have turned out finely. Would you like to know the secret?"

"I should, very much."

"Come, then," he said, rising, and leaning on the cane, which four score years had made his necessary and inseparable companion, he toiled slowly up the stairs. The good mother, who had passed her three score and ten years, followed after.

"I trust, madam, you are not coming up from courtesy to me!"

"No, oh no, we love to come up here."

"And what do you expect to see?" asked the father.

"Perhaps a bundle of sticks, on the 'spare the rod and spoil the child' principle."

Both laughed outright, that chuckling, crackling laugh, which tells that "Old Time" has broken the voice, but not the heart.

I followed up the stairs to the very end of the long house. Before a plain door the old gentleman turned around:

"You were so good at guessing before, suppose you try again."

"That looks like a closet door, and this must be the end of the house. Did you shut them up to meditate on the dark deeds they had committed, and the darker prospect before them, if they didn't reform?"

Again that cheery, chuckling, warm-hearted, crackling laugh!

The door opened on a long, roof-lighted, plainly finished room, with a stove at one end, and a swing hanging from the rafters, and a ten-pin alley at one side. Scattered around were: a rocking horse, minus a head—a rag baby, minus head and arms—a little doll with cracked face, and a dress as torn as if she had been raspberrying—a wheelbarrow all but the wheel—an elephant who had lost his trunk, a la modern travelers—cotton flannel rabbits, some with one ear, some with one leg, and some with none—a doll's cradle with nmade bed—fighting cocks, who had lost all the feathers they ever had, and whose frames marvelously resembled pumpkin seeds—apple seeds, yeapt mice, but who in all the years had never reached their bag of "meal"—and raisin turtles, whose clove claws did not seem to move them the least along "life's pathway"—broken tea sets—a bow all nstrng. What matter? since no arrow was left rankling in the parents heart!

"Just as the children left them," said the mother, "we often come up here but never touch anything!"

"No," said the father, "I like it as they left it," sitting down in an old-fashioned arm chair inside the door. "This was my chair where I used to come sometimes and sit and see them enjoy themselves. My wife couldn't have the children making a noise, and running over and littering up the house, so I took this back woodshed chamber, and finished it off, and gave it to the children. There were to be no playthings too nice to play with or to break—no punishment for the natural, joyous outburst of exuberant child-life. Their little friends might come up the back stairway and play with them. For children must have companionship and noise is necessary to their happiness, and I love to hear it. No quarrelling, or cheating or falsehood was allowed here. Banishment for a specified time being the punishment."

"Yes," said the mother, "and if you are a naughty child you cannot go to the play-room to-day," was often the only threat necessary. This room stood the children instead of many a whipping, was a great happiness to them, and a great relief to me."

"And last year when the Judge"—"My little curly haired Willie, only such a little

while ago" broke in the mother with a touch of gentle sadness in her voice.

"But now a strong, noble man!" exclaimed the father with an exultant pride in his voice, "but no smarter than Edward and Charles and Frank. But what was I saying—Oh! last year when he was home, he came up here and said, 'I believe this room kept us out of bad company, and made us what we are. Look at A. and B. and C., they were kept so strict at home they had to run off, and then were scolded and whipped, and shut up for having sought amusement and enjoyment, until they hated home and their parents. Who is to blame, if as soon as they could, they found their pleasure and spent their time away from home and home influences. Had my parents been like their parents, I, too, should have been lost in this world and the next.'"

"A noble tribute to his parents!"

"But I don't think our boys were naturally inclined to be vicious."

"Well I don't know, wife, what might have been, but I do know it never did them any harm to have their home the pleasantest place in all the world to them.—*Excelsior Magazine.*"

Women as Horticulturists.

Agitation does good, as thunder storms clear the air. One good from all this fuss about women's rights is to show women that they can earn their bread in other ways than by the needle or by teaching school. Many have turned their attention to gardening and farming in a small way with excellent success. Many more have, I dare say, tried and failed, but usually from a want of resolution and perseverance in the face of difficulties.

A lady in Hartford earned by day's work enough to buy a half acre of land. On this she has set out and cultivates with her own hands twenty apple trees, sixteen cherry trees, eleven pear trees, over a hundred grape vines, besides a variety of small fruit, as strawberries, currants, raspberries, etc. That this lady has lost nothing in refinement of feeling by her outdoor work, we might judge from a note sent by her to an editor, accompanying a gift of beautiful fruit. She mentions the great enjoyment she has felt in her work, and says: "The fruits and flowers, like angel voices, have cheered me on. In their presence I have cultivated a love for the beautiful in all things, and have been happier in loftier, holier thoughts, with clearer views of the brighter world above. I would recommend to all ladies that they give time and attention to horticulture, as it improves both mind and body."

Who will say that such a life is not better than drudging over her needle for a bare pittance, wearing out soul and body both in the struggle to keep off famine?

THE INFLUENCE OF EXAMPLE.—Men's lives are pages of history. Those who read them are stimulated to good deeds thereby, or taught to avoid the mistakes such lives record. There cannot be too much said, or written, to encourage men of wealth to devote their leisure and money toward developing the beautiful in nature, recovering and regenerating waste places, and affording men with less means good opportunity for the study of rural art. The influence of an example of good taste in the adornment of a single place in a neighborhood or town, reaches far into future, and molds, more than most men think, the external features of that neighborhood or town, and affects more ultimately the lives of those whom it influences. If one man plants a tree, his neighbor wants one. If one housewife has a flower parterre, another is not insensible to the enthusiasm with which the first exhibits and praises her floral pets. If one man sees his neighbor clearing out an old swamp, a ravine, or a rough place of any sort, and converting its rude angularities into symmetrical lines of beauty, he ever after looks upon the rough places of his own domain with the possibilities of what it may become in his mind's eye, and realizes, sooner or later, the ideal beauty which the realizations of his neighbors have established.

It is an exquisite and beautiful thing in our nature, that when the heart is touched and softened by some tranquil happiness or affectionate feeling, the memory of the dead comes over it most powerfully and irresistibly. It would almost seem as if our better thoughts and sympathies were charms by virtue of which the soul is enabled to hold some vague and mysterious intercourse with the spirits of those we have dearly saved in life.

Scottish Songs and their Writers.

Persons are apt to take it for granted that all of our best-known Scottish songs are the productions of Scottish writers. But this is far from being a fact. The famous Scotch ballad, "Roy's Wife," was written by Mrs. Grant, an Irish lady of Carron. Everybody is familiar with its perfect rhythm and its peculiar musical accent:

"Roy's wife of Aldivalloch,
Roy's wife of Aldivalloch,
Wot ye, how she cheated me,
As I came o'er the braes of Balloch?"

"Oh! she was a canty qnean,
And weel could dance the Hieland walloch.
How happy I, had she been mine,
Or I been Roy of Aldivalloch!"

Miss Blamire, who wrote, "An' Ye Shall Walk in Silk Attire," was a Cumberland girl; Mrs. Hamilton, who wrote, "My Ain Fireside," was a native of Ireland, and Mrs. John Hunter, the author of "My Mother Bids Me," was a Yorkshire woman. "There's Nao Luck about the House" is often ascribed to Burns; but it was written by Moikle, the translator of Camoens. Burns says of it: "This is one of the most beautiful songs in the Scots or any other language."

THE WORKING-WOMEN'S PROTECTIVE UNION OF NEW YORK has become well established; the good service which it has rendered to the struggling has developed its own strength, and commanded the respect and support of the benevolent. An important feature in its operations is the interest taken in protecting the needy from the cruelty of unscrupulous employers. In one of its recent circulars, the significant statement is made that "the Union has prosecuted to final judgment in the courts fifteen hundred cases of fraud against working-women, and by these legal measures compelled the payment of wages due and withheld, to the amount of six thousand dollars. The Union enlists our hearty sympathy, for we can have little or no patience with men who withhold the earnings of exhausting toil. The operations of this Society are administered by able hands, and we trust that the comparatively small amount required to endow it permanently—less than \$50,000—may be secured."

WE FADE.—As the trials of life thicken, and the dreams of other days fade one by one in the deep vista of disappointed hope, the heart grows weary of the struggle, and we begin to realize our insignificance. Those who have climbed to the pinnacle of fame, or revel in luxury and wealth, go to the grave at last with the poor mendicant who begs by the wayside, and like him are soon forgotten. Generation after generation, says an eloquent writer, have felt as we feel, and their fellows were as active in life as ours are now. They passed away as a vapor, while Nature wore the same aspect of beauty as when the Creator commanded her to be. And so shall it be when we are gone. The heavens will be as bright over our graves as they are now around our paths; the world will have the same attraction for offsprings yet unborn that it had once for ourselves, and that it has now for our children.

WHAT SHE COULD DO.—The editor of the *Portland Transcript*, having asked a lady correspondent, who applied for a situation, "What could she do?" received the following comprehensive reply: "I can keep house or a secret; drive a horse or a bargain; tend a post office, a store, or a baby; make a loaf of bread or shirt; sew on buttons, etc., or so forth; mend stockings, milk a cow, wash, iron, bake, or brew—is that enough for a woman to do? Then I'll decipher the copy that puzzles you, re-write the manuscript plain and true, or even if fortune but play me fair, and my sphere points the way of my duty there, take the editor's scissors, his office and chair. Satisfactory guarantee any day that I can do and have all that I say (and more to)."

DON'T FRET.—"The horse that frets is the horse that sweats," is an old saying of horsemen, and it is just as true of men as of horses. The man who allows himself to get irritated at every little thing that goes amiss in his business, or in the ordinary affairs of life, is a man that, as a rule, will accomplish little and wear out early. He is a man for whom bile and dyspepsia have a particular fondness, and for whom children have a particular aversion. He is a man with a perpetual thorn in his flesh, which pricks and wounds at the slightest movement, a man for whom life has little pleasure and the future small hope.

Young Folks' Column.

Johnny's Opinion of Grandmothers.

Grandmothers are very nice folks;
They beat all the aunts in creation,
They let a chap do as he likes,
And don't worry about education.

I'm sure I can't see it at all,
What a poor fellow ever could do
For apples, and pennies, and cakes,
Without a grandmother or two.

Grandmothers speak, softly to "ma's"
To let a boy have a good time;
Sometimes they will whisper, 'tis true,
T'other way, when a boy wants to climb.

Grandmothers have muffins for tea,
And pies, a whole row, in the cellar,
And there's apt (if they know it in time)
To make chicken pies for a feller."

And if he is bad, now and then,
And makes a great racketing noise,
They only look over their specs,
And say, "Ah those boys will be boys."

"Life is only so short at the best;
Let the children be happy to-day."
Then they look for a while at the sky,
And the hills that are far, far away.

Quite often, as twilight comes on,
Grandmothers sing hymns very low,
To themselves, as they rock by the fire,
About heaven, and when they shall go.

And then, a boy stopping to think,
Will find a hot tear in his eye
To know what will come at the last;
For grandmothers all have to die.

I wish they could stay here and pray;
For a boy needs their prayers every night;
Some boys more than others, I s'pose;
Such as I need a wonderful sight.

Roll-Call in Heaven.

An incident is related by a chaplain who was in the army during one of our hard-fought battles. The hospital tents had been filling up as fast as the wounded men had been brought to the rear. Among the number was a young man mortally wounded, and unable to speak. It was near midnight, any many a loved one from our homes lay sleeping on the battlefield, that sleep that knows no waking until Jesus shall call for them.

The surgeons had been their rounds of duty, and for a moment all was quiet. Suddenly this young man before speechless, calls in a clear, distinct voice, "Here!" The surgeon hastened to his side, and asked what he wished. "Nothing," said he, "they are calling the roll in heaven, and I was answering to my name." He turned his head and was gone—gone to join the great army whose nniform was washed white in the blood of the Lamb. Reader, in the great roll-call of eternity, your name will be heard. Can you answer, "Here!" Are you one of the soldiers of CHRIST, the great Captain of salvation?—*Christian at Work.*

Care for Sparrows.

A little girl, seeing the servant throw the crumbs into the fire, said, "Don't you know that God takes care of the sparrows?"

"If God takes care of them," was the careless reply, "we need not trouble ourselves about them."

"But," said the little girl, "I had rather be like God, and help him take care of the little birds, than scatter or waste the food that He gives us."

So she carefully collected what was left of the crumbs, and threw them out of the window. In a short time several little birds flew eagerly to the spot, and picked up the crumbs she had scattered. After this, she every day collected in a little basket the crumbs and bits of bread that had fallen around the table, and threw them under the window for the little birds; and during all the winter these little creatures came regularly after each meal to partake of the food thus provided for their support. How beautiful it was to see this little girl trying "to help God," as she said, and thus early learning to be kind to the helpless of God's creatures.

STORY OF PRINCE ARTHUR.—Prince Arthur is a sensible, earnest lad, and now we have new proof of it. For the first time in the history of the dynasty a Prince of the blood opened a railroad, the other day, and it was Prince Arthur. After the address, prayers, etc., an ornamental spade was handed the youth, and he was requested to turn the first sod into a silver wheelbarrow, all in a figurative and symbolic way, you know. He pitched in, however, like a gardener, and broke the ornamental spade handle at the first stroke. Nothing daunted, he put his gloved hands into the turf and soon landed a good-sized clod into the barrow.

DOMESTIC ECONOMY.

Are Tin Fruit Cans Injurious.

Much has been said of late with regard to the danger of metallic poisoning from eating fruit (especially very acid fruit) which has been put up in tin cans. A cotemporary says that tin has long been justly regarded as one of the metals from the ordinary uses of which mankind have nothing to fear. But the present age is characterized by its factitious imitations. That which goes by the name of tin foil, is mostly an alloy of tin and lead, and it is charged that many of the caps used for fruit jars, are made of zinc instead of tin. It is well known, also, that lead is used in soldering cans, and that this metal is attacked by certain organic acids which are contained in fruits. The tin of commerce is also by no means pure, and housekeepers will vouch that the tin cans are often attacked by these acids, and eaten through so as to leak their fluid contents. In the case of impurities in the tin used to coat the iron of the tin plates of commerce—when the cans are thus attacked, it may well be doubted whether the cumulated effects of metallic poisoning do not sometimes result from this cause.

So far as the evidence of the senses goes, housekeepers know that cooking tomatoes in tin "ruins the basins" as one good woman said; and another admitted that she commonly used up at least one basin in a season for this purpose. How much injury the partaker receives, we do not know, but so much has been said of the sad effects of metallic poisoning, even in small though long continued doses, that we would like to be assured of safety. Professor Yonmans thinks it a small matter, but many medical authorities disagree with him. One of the latter says: "It ought to be known to housekeepers that acid, fatty, saline and even albuminous substances, may occasion colic, vomiting, etc., after having remained some time in tin vessels."

We see that the inner surface of the tin can is discolored after having been used for fruit, and we find that the flavors of the more delicate fruits are injured when they have been kept in tin cans. Zinc is more readily oxidized than tin, and yet the caps of some of our glass cans are made of that metal.

If the amount of tin that may enter the system, as a result of its domestic use, is not likely to prove injurious, the questions are narrowed down to the purity of the article used, and the actual results of using the various cans prepared for our market.

Professor Edwards of the Woman's Medical College of the N. Y. Infirmary, said that the tin cans, as prepared, are very unsafe, that the acids dissolve the lead solder and sometimes eat through the entire plate, making the cans leak, and also that serious cases of poisoning had occurred from using their contents. If facts like these could be called out from scientific men, they would arrest public attention, and they might suggest to manufacturers of glass cans the desirability of protecting the inner surfaces of their metallic caps in some way. Those with metallic caps work so much more easily than others, that they will long be more or less in demand. Some people line their caps with stiff white paper—a small protection of course.

This subject is of considerable importance in domestic economy of the household, and one which should be more freely and fully discussed by scientific men. Canned fruit has become a matter of almost daily use in many families, and if our families are eating a slow, metallic poison, the public ought to know it, and have the information conveyed by authority competent to judge and advise correctly.

PUT UP YOUR JAM WHILE HOT.—It is said that ordinary jam—fruit and sugar which have been boiled together for some time—keeps better if the pots into which it is poured are tied up while hot. If the paper can act as a strainer, in the same way as cotton wool, it must be as people suppose. If one pot of Jam be allowed to cool before it is tied down, little germs will fall upon it from the air, and they will retain their vitality, because they fall upon a cool substance; they will be shut in by the paper, and will soon fall to work decomposing the fruit. If another pot, perfectly similar, be filled with a boiling hot mixture, and immediately covered over, though, of course, some of the outside air must be shut in, any germs which are floating in it will be scalded, and in all probability destroyed, so that no decomposition can take place.

COOKING EGGS.—Eggs broken in water are the "poached eggs" of the cook book, and a delicate way of preparing for table. Skill is however requisite to bring them unbroken on the platter. Butter your saucepan; then pour in boiling water two inches in depth; add a little salt; break the eggs carefully into a saucer, one at a time, and slip into the water; do not crowd them; five or six at a time are sufficient for an ordinary party. Keep the water just at boiling point. When the whites are nicely set, and the yolks with a light covering that just reveal their richness, remove with a spoon to a platter, on which a few pieces of butter are laid. When all are taken up, a dash of pepper on each, and they are ready for the table.

Okra or Gombo.

Did you ever eat okra or gombo—generally incorrectly spelled *okra* or *gombo*? It is a West Indian plant, but almost universally used throughout the Southern States—and to some extent in the Middle States and in California.

This plant belongs to the order of *malvaceae*, the characteristic quality of which is mucilaginous. It is eaten green, like string-beans, the pod and seed together. The pod is about six inches long, opening into five longitudinal cells, filled with a great number of seeds, which are sometimes roasted when ripe and used for coffee. Its somewhat peculiar taste and excessively mucilaginous nature renders it rather distasteful at first; but an appetite for it is readily acquired. This vegetable is really more valuable for the table than generally supposed; but it must not be spoiled in the cooking.

Its nutritive qualities are quite remarkable, as it contains gum or gluten in large quantities, which if properly administered to invalids and particularly that class suffering from consumption in any of its varied forms, is almost a "sheet anchor of hope," giving strength to the body, light to the eye, and color to the cheeks; which is principally accomplished by its easy digestion and assimilation.

In the South and throughout France, it is grown and used in large quantities, which would, if apart from other excesses, cause them to grow fat. In New Orleans and its vicinity as well as in that of Charleston, S. C., and wherever the French element has become mixed or blended with our native population it is sought for with an avidity truly astonishing.

The Northern people have "huckleberry feasts," catfish suppers, "clam lakes," etc., but they of the South have their okra or "gombo parties," where gombo forms a part and parcel of all the prepared dishes, beside those of it exclusively. Among the rest it is cut fine and cooked with stewed chicken which adds zest to the dish, to be relished by all the partakers. It is used freely when cut fine in vegetable soup, boiled and used with drawn butter, which latter dressing is improved by the addition of a small quantity of sherry or claret wine.

When used separately, by boiling, it is generally eaten whole or cut in two or three pieces; having been boiled from thirty minutes to an hour. When an appetite has been once acquired for it it becomes really a delicious dish. It is much used in vegetable soup with tomatoes, which may have added to it cabbage, potatoes, corn and barley with a sprinkle of parsley, summer savory, and a carrot or two, always using a piece of beef, which is preferred to a knuckle of veal as recommended by some.

It may also be boiled and dressed with butter, pepper and salt, with or without vinegar, or with drawn butter; or cut fine and cooked with stewed chicken, or in fact, any way, or method which suggests itself.

Fresh Vegetables and Sweet Salads.

Those who value fresh vegetables and sweet salads will have none washed in the garden. Neither the one nor the other should be washed until they are just about to be cooked or eaten. Even potatoes lose flavor quickly after being washed; so do carrots and turnips; while water will speedily become tainted in summer in contact with cauliflowers and cabbages, and thus destroy their freshness and flavor. The case is still worse with salads. If washed at all, it should be only before they are dressed, and they should be dried and dressed immediately. Nothing ruins the flavor of vegetables, and renders good salading unobtainable, sooner than water hanging about them. If lettuces are quite clean, they make the best salad unwashed; but if washed the operation should be done quickly, and the water instantly shaken out, and the leaves dried with a clean cloth. But, alas! how often are they cut and washed in the garden in the morning, and pitched into water into the scullery sink until wanted. What French *artiste* would be mad enough to rinse out his salad juice, and then recharge his lettuces and his endives with semi-putrid water?

The best practice is simply to remove all superfluous earth by scraping or rubbing, and all rough tops or leaves by cutting. Enough tender leaves may still be left on cauliflowers and broccoli to overlap the flowers. Salad should be sent in from the garden with most of the outside leaves and main root on. The tender leaves are easily tainted and injured by exposure, and if the chief root is cut off sharp much of the juice oozes out at the wound. Where vegetables and salading have to be bought from a town greengrocer, the conditions are altogether different. Not only washing but soaking often becomes requisite to restore something like pristine crispness.

USE WHITE CHEESE.—The fact has been developed by a chemist at Cornell University, that every specimen of the so-called "best basket annatto," collected from some of the finest cheese factories in Herkimer county, and submitted for analysis by the Little Falls Farmers' Club, contained a large percentage of mineral or inorganic matter. Nearly every sample contained copper; and traces of arsenic, it was thought, were discovered in at least one. The presence of these poisons is certainly not calculated to render cheese "a healthy and nutri-

tious article of food," and we are glad to learn, as we do from Mr. X. A. Willard, dairy editor of the *Rural New Yorker*, that the demand for white or uncolored cheese seems to be steadily increasing. Our authority states that some of the Herkimer "fancy factories" have been making this kind all the season; that the sales have been at the highest rates, and he expresses the opinion that if it were not for the London trade and the requirements of certain English markets, there would be no difficulty in banishing all coloring material from the vats. So far as home consumption of cheese is concerned, our people would soon learn to prefer the uncolored article, and the facts above developed in regard to annatto may help to hasten this desirable consummation.

The Poetry of the Table.

In the first place, a starched and smoothly-ironed table-cloth—which, if neatly folded after every meal, will look well for several days. Then flowers and ferns in flat dishes, baskets, or small vases,—or else a tiny nosegay laid upon every napkin.

The salt must be pure and smooth. The butter should be moulded into criss-crossed diamond, shells, or globes, with the paddles made for this purpose.

A few pretty dishes will make the plainest table glow;—a small bright-colored platter for pickles, horse-radish, or jelly; and butter-plates representing green leaves are also attractive.

A few pennies' worth of parsley or cress, mingled with small scraps of white paper daintily clipped, will cause a plain dish to assume the air of a French *entree*. A platter of hash may be ornamented with an edging of toasted or fried bread cut into points; and a dish of mutton chops is much more impressive with the bones stacked as soldiers stack their guns, forming a pyramid in the center—each bone adorned with a frill of cut paper. A few slices of lemon, mingled with sprigs of parsley and slices of hard-boiled eggs, form a pretty garnish to many dishes; and nothing could be more appetizing than beef, veal, mutton, or lamb made into mince-meat, and pressed into form in a wine-glass, then fried in pork fat, with a sprig of green placed in the top of each little cone. The basket of fruit—peaches, pears, grapes or apples, oranges and grapes—should be tastefully arranged and trimmed with leaves and flowers. The bowl of salad should be ornamented with the scarlet and orange flowers of the tropaeolum,—their piquant flavor adding zest to the lettuce, with which they can be eaten.

Selected Receipts.

BOILED INDIAN PUDDING.—Take sweet milk of sufficient quantity for the pudding desired; salt to the taste, and stir in Indian meal till a little milk will rise on the top by standing. If too thick it will be hard. Fill a pudding crock, and tie a cloth tightly over it. Put into boiling water sufficient to keep it covered, and boil steadily for three hours. Fruit may be added if desired. Serve with sweetened cream. This is an old-fashioned Connecticut pudding.

CORNMEAL PUDDING.—Two quarts of sweet milk, one pint of cornmeal, one-half pint of beef suet or fat pork, chopped fine, three eggs, and a little nutmeg and salt; sweeten to your taste with sugar. Heat the milk, and while hot, stir in the meal; after this, set it where it will cool, and then add the eggs. Bake from three to four hours in a slow oven.

INDIAN MEAL PUDDING.—Into one quart of boiling milk stir one quart of sifted fine meal; then add one quart of cold milk, two well beaten eggs, one-half cup of sugar, one cup of flour, and a little salt and spice. Stir it well and pour it into a buttered dish. Bake two hours, and serve with butter.

RICE WAFFLES.—One cup of boiled rice, one of flour, one quart of milk, one teaspoonful of butter, four eggs, a teaspoon half full of salt. Beat the white of the eggs to a stiff froth, and mix the whole very evenly. Bake in waffle-irons and butter before eaten.

POTATO CAKES.—Take one dozen large potatoes, fresh boiled and mashed very fine, $\frac{1}{4}$ lb. butter, three eggs beaten, and $\frac{1}{4}$ lb. of flour, mix together with a fork (do not handle it), roll into thin cakes, and bake quickly in a hot oven.

LEMON PIE WITH THREE CRUSTS.—A layer of crust, a layer of lemon, sliced fine, a little sugar, a layer of crust again, and sugar and lemon again, then the upper crust, makes a good lemon pie.

Another Way.—One cup of sugar, one cup of sweet milk, one egg, one and a half lemons, the grated peel and juice, one tablespoonful of flour; then, after baking, the white of an egg beaten, sweetened and put on the top, then put in the oven and browned.

TO COLOR SLATE COLOR.—Boil yellow oak bark in an iron kettle till the strength is extracted. Take out the bark, then add a very little copperas, and you have a pretty color with no expense.

TO EXTRACT INK FROM FLOORS.—Ink spots on floors can be removed by scouring them with sand wet in oil of vitriol and water mixed. Rinse them, when the ink is extracted, with strong pearl-ash water.

BRANDY IN BOILING MEAT.—If as soon as meat is skimmed and thoroughly boiling, two spoonfuls of brandy is added to every three pounds of meat, the meat will become tender, though it may have been very tough, and will not retain any taste of the brandy.

MISCELLANEOUS.

Powder River Valley.

The Baker City *Democrat* gives the following description of Powder River valley, Baker county, Oregon:

The valley is some thirty-five or forty miles in length, from north to south, and ranges from five to twenty-five miles in width, from east to west. Beautiful mountain streams meander through the whole length and breadth of the valley, from which irrigating ditches can be taken with but little trouble or expense. In the summer of 1862 the valley and mountain sides was one vast sea of as fine bunch grass as ever grew. At that time a large portion of the valley was swamp and overflowed lands, and the travel passed at or near the foothills. The settlements made by the emigrants of 1862 was the starting point of the present prosperity of the Powder River valley. The settlers were poor and toil-worn—now they are wealthy and comfortable.

A view of the Powder River valley now, presents to the eye a home and civilized appearance, with towns, villages, farms and farm-houses interspersed over its whole extent. The swamp and overflowed lands have, to a great extent, been reclaimed and made to yield bountiful harvests to repay the hardy and industrious pioneer husbandman.

Churches and school-houses now occupy the places where, but a short time since, the war-whoop of the savage was the only indication that a human being had an abiding place in this beautiful valley. We can now stand in our office door and view vast herds of cattle and sheep, feeding upon the rich and luxuriant grasses of the valley and the surrounding foothills—a better range than which, cannot be found on the Pacific Slope, which embraces the best and most extensive grazing lands in the world. The valley is surrounded by mountains, in which are found rich deposits of gold, silver and copper, which is being taken out by hardy and enterprising miners. The mining camps surrounding the valley supply a home market for the surplus produce of our farmers.

A SENSIBLE SUGGESTION.—The St. Louis *Journal of Education* says: "Every teacher should understand how to plant trees and the art of grafting, and should be able to teach children these things. The play grounds of our school-houses should be filled with shade trees, both in the city and country. Every holiday at school should be celebrated by the planting of trees. The highways should be lined with trees, thus planted by the youth of the country. The ravages which the foolish greed of the last and present generations has made in our forests could thus, in time, be repaired. A million hands in this State could be set at this work. It would become a habit of family life to commemorate the events of home, the birth of a child, a wedding, or the anniversary of either or even a death, by these living monuments."

WOMAN'S WIT.—Dr. Abernethy rarely met his match, but on one occasion he fairly owned he had. He was sent for by an inn keeper who had quarreled with his wife, who had scarred his face with her nails, so that the poor man was bleeding and much disfigured. Abernethy thought this an opportunity not to be lost for admonishing the offender, and said:—"Madam, are you not ashamed of yourself to treat your husband thus—the husband who is the head of all—your head, madam, in fact?" "Well, doctor," fiercely returned the virago, "may I not scratch my own head?"

FORESTS are guarded with especial care in Russia. The use of wood fuel on railways is interdicted. At the rate of destruction now going on, California will be destitute of timber in twenty years; and if the predictions of meteorologists be of any account, it will effect a terrible revolution in our climate, that will reduce our farm lands to a low valuation.

A CELEBRATED writer says: "No woman can be a lady who can wound or mortify another. No matter how beautiful, refined, or cultivated she may be, if she is in reality coarse, the innate vulgarity of her nature manifests itself here. Uniformly kind, courteous and polite treatment of all, personifies one mark of a true woman."

COLERIDGE, on being asked what was the use of a certain scientific discovery, replied, "What is the use of a new-horn child?"

California Wines Endorsed.

At the banquet of the California Pioneers of Sacramento, on the 4th of July, I. N. Hoag introduced the following resolution, which was unanimously adopted:

"WHEREAS, The Committee of Arrangements have furnished for use on this occasion pure California wines, to the exclusion of all wines of a foreign brand or manufacture; and whereas, we have tried them and find them not only good but very good, therefore,

Resolved, That we, the California Pioneers of Sacramento and their friends present, unanimously endorse the action of the committee in this respect, and hope that hereafter all foreign wines will be excluded from the banquet tables of the California Pioneers throughout the State."

Farming Club Lecture and Essay.

At the meeting of the Oakland Farming, Horticultural and Industrial Club on Friday evening, July 12th, the President, Prof. E. S. Carr, will give a short lecture on the process of bread-making, with experiments, in the chemical lecture room of the State University. Vice-President, J. V. Webster, of Fruit Vale, will deliver an essay on "California—Its Past and Present;" with special reference to farming matters.

A TREATISE ON RAILWAY CURVES AND LOCATIONS. By E. W. Beane, C. E. Henry Cary Baird, Industrial Publisher, 496 Walnut street, Philadelphia.

The above is the title of a small edition of a work very useful to Railway Engineers, and one which appears to contain considerable matter entirely new, and which will greatly assist the locating engineer, and facilitate his labors. The work is illustrated with numerous diagrams, and contains demonstrations and tables, showing how engineers may save themselves many laborious calculations and much expense for their employers. The last chapter or proposition, is devoted to grading hills and unequal surfaces for turnpikes, plank roads, etc. Price, \$1.50, sent by mail, free of postage, to any part of the United States.

Be Careful.

You cannot be too careful about your farming machinery. Already we have heard of two accidents by which men have lost limbs in threshing machines, and we sound the alarm in time to save others. Table tenders will see that their tables are securely put up; they will not step across the mouth of the cylinder, nor on the cap of an old machine. Pitchers will always leave their forks sticking upright in the stack, or stacked on the ground. The feeder will see that his cylinder teeth are all right, and will not get his hands too far in. The engineer will guard against fire, and always look at his safety valve before starting up. The machine tender will watch his boxes closely that they do not heat, and keep his fingers and clothes out of cog-wheels. But accidents will happen. If you have a fork run into you, put on turpentine; if you have a mash or cut, put it in cold water. If an artery is cut, tie a cord between the wound and the heart as tight as man can make it, and send for a doctor. Keep plenty of water and turpentine always on hand. *Be careful. Napa Register.*

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., July 11.

FLOUR—Market is quiet. We quote prices as follows:

Superfine, \$4.25@4.50; extra, in sacks, of 196 lbs. \$6.12½@6.25; Oregon brands, \$5.50 @ \$6.00 in sacks of 196 lbs.

WHEAT—The market has been dull at declining rates since our last review. The range for new is \$1.55@1.60, and old, \$1.50@1.80 per 100 lbs.

The latest Liverpool market quotations come through at 12s. 2d.@12s.6d. per cental.

BARLEY—Market dull. The range at close is new feed \$1.20@1.25; old feed \$1.50@1.65; old brewing \$1.50@1.65.

OATS—Market has improved. Sales ordinary coast to choice bay, at \$1.65@1.80 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.65@1.80 per 100 lbs. CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs. RYE—Is quiet at \$1.75@1.80 per 100 lbs. STRAW—Quotable at 50¢@60¢ per bale.

BRAN—Is selling at \$17 per ton from the mill.

MIDDINGS—For feed, are \$27.50 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Light sales at a range of \$8@16.25 per ton.

HONEY—New is selling at 12½¢@25 in the comb, and 12¢@16¢ strained; old in comb 8¢@15; do strained 8¢@12½¢ per lb.

POTATOES—The supply of Mission and Half-moon Bay is not very heavy, and prices are fair. Sales of Red at \$1.85@1.90 per 100 lbs.; Peach Blow \$2.00@2.10.

WOOL—The market is still very quiet and prices are nominal.

TALLOW—Good quality of Cal. 8c.

SEEDS—Flax 3c; Canary, 5¢@6c.

PROVISIONS—California Bacon 11¢@12½¢ per lb.; Oregon, 13¢@14¢. Eastern do. 10¢@12 for clear and 14¢@15 for sugar-cured Breakfast; Cal. Hams 12¢@13; Eastern do. 11¢@15¢; California Smoked Beef, 13¢@14c. per lb.

BEANS—The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25@3.50; large \$3.37½@3.50; Bayo, 4.00@4.25; Pink and Red, \$5.25@5.50.

NUTS—California Almonds, 35¢@40c. for hard and 18¢@25 for soft shell; Peanuts, 5¢@8c; Pecan, 25¢ per lb.; Hickory, 12c; Brazil, 15c; Chili Walnuts, 15c; Italian Chestnuts 25c; Eastern Chestnuts, 15¢@20c; French Almonds, 25¢@30c; Princess Almonds, 35¢@40c; Los Angeles Walnuts, 18c; Cocoa-nuts, \$10.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:

BEEF—American, 1st quality, 7¢@8¢ per lb. do. 2d quality 6¢@7¢ per lb.; do. 3d do. 3¢@5c.

VEAL—Quotable at 7¢@10c.

MUTTON—6¢@6½¢ per lb.

LAMB—Easier at 8¢@8½¢.

PORK—Undressed grain-fed is quotable at 6¢@6½¢ dressed, grain-fed, 8½¢@9½¢ per lb.

POULTRY—Live Turkeys, 25¢@27c. per lb.; dressed, 27¢@30¢ per lb.; Hens \$8.50@9.50; Roosters, \$8.50@9.50 per dozen; Spring Chickens, \$3.00@6.00; Ducks, tame, \$6.00@7.00 per doz.; Geese, \$15@18 per dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, may still be quoted at 22½¢@27½¢, with a few choice lots at 30; New firkin is quotable at 25¢@27½¢.

CHEESE—New California, 10¢@14c; Eastern is jobbing at 14¢@15c. per lb.

EGGS—California fresh, are 37½¢@40c. per doz.; Eastern 15¢@20. Oregon, 25¢@26.

LARD—California 12½¢@14; Oregon, none in market. Eastern in cases 14¢@14½¢; do in tins. 11½¢@12c. per lb.

FRUIT.

Tah. Oranges, M.	35	30	40	00	Strawberries	10	4	5
California do.	14	15	15	15	Blackberries	10	15	15
Limes, M.	12	15	15	15	Raspberries	10	15	15
Artichokes, M.	10	15	15	15	Gooseberries	10	15	15
Chili, do M.	10	15	15	15	Cherries	10	15	15
Sicily, do. Bx.	10	15	15	15	Apples	10	15	15
Bananas, Bx.	2	50	50	50	Pears, Bx.	1	50	2.00
Currents	4	50	50	50	Fig. Bx.	8	10	9
Apples, Bx.	1	25	25	25	Peaches	8	10	12½
Pineapples per doz.	6	10	10	10	Plums	5	10	12½

DRIED FRUIT
Apples, Bx. doz. 9¢@10c
Pears, Bx. doz. 9¢@10c
Peaches, Bx. doz. 9¢@10c
Apricots, Bx. doz. 9¢@10c
Plums, Bx. doz. 9¢@10c

VEGETABLES
Cabbage, Bx. doz. 1¢@1½¢
Garlic, Bx. doz. 1¢@1½¢
Rhubarb, Bx. doz. 2¢@3¢
Green Peas, Bx. doz. 2¢@3¢
Sweet Peas, Bx. doz. 2¢@3¢
Green Corn, Bx. doz. 8¢@8½¢
Marrowfat Squash, Bx. doz. 10¢@15¢

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—Prices are as follows: Burlap sacks 18c; Flour sacks 17½¢@10c for qrs. and 14½¢@15¢ for hlfs. Standard Gunnies are jobbing at 20¢@21c; Wool 75¢@80c; Hessians 40 inch goods 14c. per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The demand for lumber in the interior is light; city trade fair. Export trade is light on account of scarcity of vessels and high freights.

Dealers pay for cargoes of Oregon as follows: Rough \$16@17; do surfaced at \$28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @2.75; Shingles \$2.50@2.75. Sugar Pine \$35 @45; Cedar \$27½@37½. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices is continued by the Lumber Dealers' Exchange.

Puget Sound Pine—

Rough, M.	22	50
Fencing and Stepping, M.	35	00
Fencing, second quality, M.	25	00
Laths, M.	3	00
Fencing, M. lineal foot.	9	30
Redwood—		
Rough, M.	22	50
Rough refuse, M.	17	00
Rough Pickets, M.	18	00
Rough Pickets, pointed, M.	20	00
Fancy Pickets, M.	30	00
Siding, M.	25	00
Tongued and Grooved, surfaced, M.	37	50
Do do refuse M.	25	00
Half-inch surfaced, M.	35	00
Rustic M.	40	00
Batten M. lineal foot.	3	00
Shingles M.	3	00
Sugar Pine is jobbing at \$35 for clear and \$45 for second quality.		

COFFEE—Costa Rica 20½¢; Guatemala 18c.

Java 26c; Manilla, 19½; Rio 19½@20;

Ground Coffee in cases 30c; Chicory, 12½.

SPICES—Allspice 14¢@15c. Cloves 16¢@17c.

Cassia 35¢@30c. Nutmegs \$1.00@1.10. Whole

Pepper 20c. Ground Spices—Allspice \$1.00 per

doz.; Cassia \$1.50; Cloves \$1.12½; Mustard

\$1.50; Ginger and Pepper, each \$1.00@1.12 per

doz.; Mace \$1.50 per lb.; Ginger 15¢ per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½¢@5½¢, Salmon in bbls. \$6.00@7.00,

hf do. \$3.50@4.50; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85c per box; Mackerel, No. 1 hf bbls, \$8.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.15; do No. 2, \$1.50@1.62½. Smoked Salmon, 7¢@7½¢ per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 per ream.

PAINTS—White Lead 8¢@12½¢; Whitening, 2½¢; Chalk 2c; Paris White 3c; Ochre and Venetian Red each 3½; Red lead and Litharge each 10½¢@11c. per lb.

RICE—Sales of China No. 1 at 7¢@7½¢, and No. 2 at 6½¢@6¾¢ per lb; Siam, quotable at 5½¢@6½¢ in mats; Carolina Table, 10¢@11; Hawaiian, 9¢@10c per lb.

SUGAR—We quote Cal. Cube at 13½¢; Circle A Crushed, 13c, and Granulated 12½¢; Golden C. 11c; Hawaiian 8¢@10½¢, as extremes per lb.

SYRUP—Prices may be given as follows: 57½¢ in bbls, 60 in hf bbls, and 65c in kegs.

SALT—California Bay sells at \$6@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5¢@10c, and Castile, 13¢@13½¢ per lb.

TEA—Sales as below, less duty, which was taken off on the 1st inst. We quote Young Hyson at 70¢@1.15; Gunpowder, 85¢@1.15; Imperial, 85¢@1.25; Oolong in bulk 40¢@1.00, in ½ lb. papers 37½¢@1.10; English Breakfast 45¢@1.00; English Breakfast Congou, 50¢@55c; Basket 50¢@55c. per lb.

THURSDAY NOON, July 11, 1872.

MISCELLANEOUS.

Butter, Cal. fr. B.	25	35	35	35	Flour, ex. q. r.	10	11
do Oregon, B.	25	35	35	35	do do	10	11
Honey, B.	25	35	35	35	Potato G. Y. Bags	20	21
Cheese, B.	25	35	35	35	Second-hand do	12	16
Eggs, per doz.	15	20	20	20	Deer Skins, B.	15	22
Lard, B.	15	20	20	20	Sheepskins, B.	15	22
Sugar, cr. 7 lb.	10	13	13	13	Goat skins, plain	12	25
Brown, do. 7 lb.	9	13	13	13	Dry Cal. Hides	18	25
Beet, do.	12	15	15	15	Salted do.	17	25
Sugar, Map.	15	20	20	20	Salted do.	17	25
Plums, dried, B.	15	20	20	20	Codfish, dry, B.	10	12
Peaches, dried, B.	20	25	25	25	Live Oak Wood	10	10
Wool Sacks, new	82	85	85	85	Tallow	8	10
Second-hand do	82	85	85	85			
Wheat-eks, 22x35	15	15	15	15			

PRODUCE, ETC.

Flour, ex. Bbl.	6	65	65	65	Barley, cwt.	1	50
Superfine, do.	6	65	65	65	Beans, cwt.	1	60
Corn Meal, 100 lb. B.	6	65	65	65	Dry Lima Beans	2	5
Wheat, 100 lb. B.	6	65	65	65	Hay, cwt.	17	20
Oats, 100 lb. B.	6	65	65	65	Potatoes, B.	75	100

FRUITS, VEGETABLES, ETC.

Apples, B.	15	15	15	15	Celery, B. doz.	75	80
Pine Apples, B.	15	15	15	15	Cucumbers, B.	25	25
Bananas, B. bunch	50	50	50	50	Tomatoes, B. doz.	4	25
Cantaloupes, B.	25	50	50	50	Cress, B. doz.	20	25
Watermelons, B.	25	50	50	50	Dried Herbs, B. lb	25	50
Cal. Walnuts, B.	15	20	20	20	Garlic, B. doz.	5	5
Cranberries, B.	10	10	10	10	Green Peas, B. B.	5	5
Strawberries, B.	12	12	12	12	Green Corn, doz.	25	25
Raspberries, B.	20	25	25	25	Lettuce, B. doz.	12	25
Cranberries, B.	10	15	15	15	Mushrooms, B. B.	10	20
Gooseberries, B.	10	15	15	15	Sardines, B. B.	10	20
Cherries, B.	15	30	30	30	Okra, dried, B.	50	50
Oranges, 1000.20	50	50	50	50	Pumpkins, B. B.	3	4
Lemons, 100.50	50	50	50	50	Parasips, bunches	20	25
Limes, per 100.20	50	50	50	50	Farsley, B.	5	5
Pears, fresh, B. B.	12	12	12	12	Pickles, B. gal.	10	10
Asparagus, wh.	12	12	12	12	Rhubarb, B. B.	5	5
Artichokes, doz.	50	50	50	50	Radishes, B. bunch	10	15
Brussels sprouts, B.	10	12	12	12	Summer Squash	5	5
Beets, B. doz.	25	25	25	25	Marrowfat, do.	5	5
Chicory, New B.	2	2	2	2	Hotels, B. B.	6	8
Potatoes, sweet, B.	10	10	10	10	Dry Lima, B.	6	8
Broccoli, B. doz.	15	15	15	15	Spinage, B. bkt.	25	50
Cauliflower, B.	10	10	10	10	Salsify, B. bunch	12	25
Cabbage, B. doz.	10	10	10	10	Turnips, B. doz.	15	20
Carrots, B. doz.	15	15	15	15			

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, B. piece	60	60	60	60	Choice D. field	—	25
Turkeys, B. B.	25	25	25	25	Johnsons Or.	—	25
Ducks, wild, B. p	10	10	10	10	Flounder, B.	15	18
Tame, do.	10	10	10	10	Salmon, B.	8	10
Teal, B. doz.	20	20	20	20	Smoked, new	12	15
Geese, wild, pair	20	20	20	20	Perch, B. water, B.	10	12
Tame, pair	20	20	20	20	Fresh water, B.	10	15
Hens, each	75	75	75	75	Lake Big Trout	—	25
Snipe, B. doz.	10	10	10	10	Pickles, B. B.	8	12

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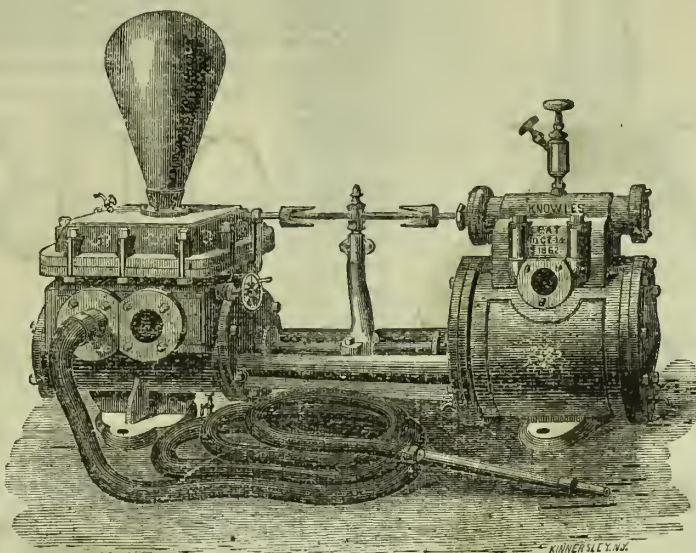
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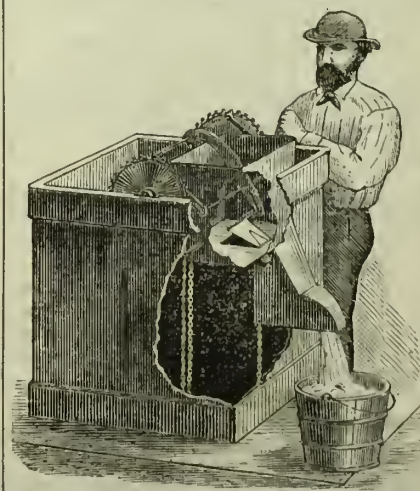
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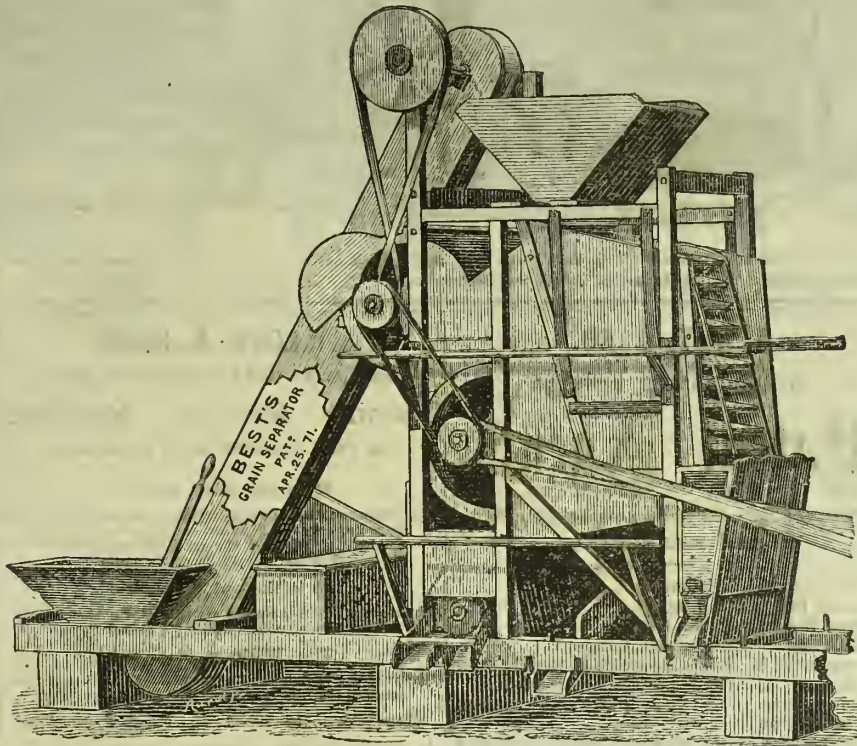
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(14v3-2am)

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15v3awbp3m

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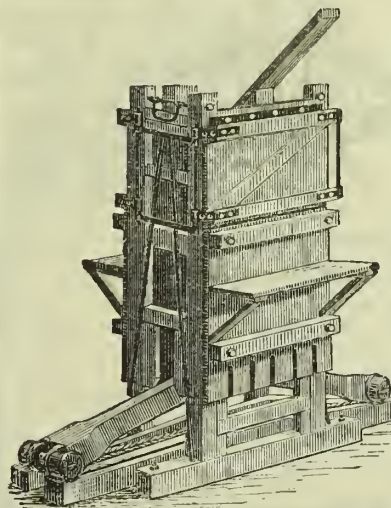
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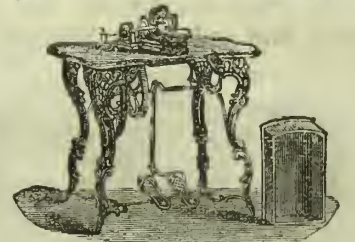
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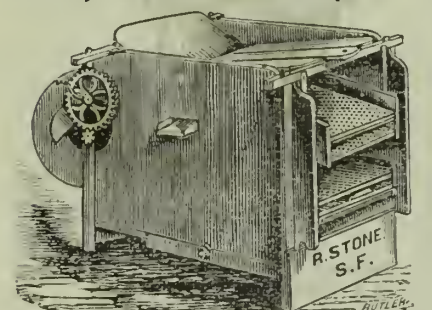
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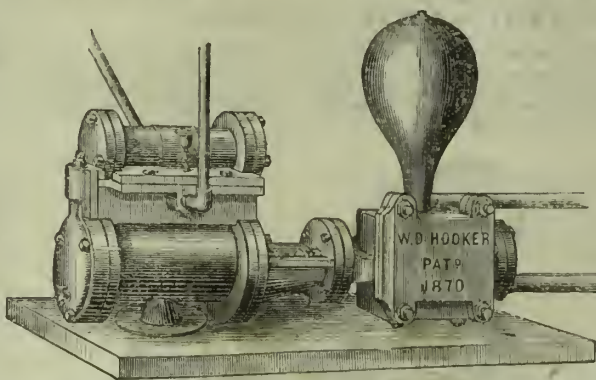
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Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

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Its Work Received the First Premium

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13v3-1f WAUKEGAN, ILL.

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LAST AS LONG AGAIN AS ANY OTHER KIND.

VINE GROWERS, ATTENTION.

There will be a meeting of the California Vine Growers and Wine and Brandy Manufacturers Association at Sacramento on Thursday, the 18th of July, inst., at 3 o'clock P. M., for the transaction of business of importance connected with the Association and the Wine and Brandy interest generally.

All parties interested are invited to attend.
By order of the Board,
jul6-tt I. N. HOAG, Secretary.





Volume IV.]

SAN FRANCISCO, SATURDAY, JULY 20, 1872.

[Number 3.]

Irrigation vs. Pulverization.

During the last few years, much has been said and written on the subject of irrigation, and generally setting forth the advantages to be derived therefrom, when judiciously applied. It has been a favorite theory with a few, that all that California soils need, to render them fully productive during our long summers of uninterrupted drouth, is deep and thorough tillage and a perfect pulverization of the surface.

Now this is all very well as applied to vegetable, grape-vine and fruit-tree culture to a certain extent and upon certain soils; and yet every year we see the largest and finest specimens of fruit exhibited at our fairs, to be the products of irrigated grounds.

When season after season had shown this fact to be undisputed, then the advocates of pulverization vs. irrigation partially changed their tactics, declaring that winter irrigation was all that was needed; a thorough soaking of the soil in winter, a thorough pulverization of the surface without irrigation during the summer, constituted a full guaranty of success, and was all that could be hoped for, from the best elaborated system of irrigation that could be devised.

Irrigating Grass Lands.

But admitting that fruits can be grown good enough, without irrigation by keeping the surface of the soil finely pulverized, how are we to do this, even if desirable, upon grass and clover lands, that year by year pay better than any fruit or grain lands? Now here is where summer irrigation comes in as a system undisputed as to its beneficial effects.

If—with perhaps the single exception of alfalfa—one good crop of clover, timothy or other of the cultivated grasses, is all that can be grown from the natural or artificial irrigation of winter, and then the season is entirely too dry for a second crop, summer irrigation supplies us with the means of producing a second and even a third crop, instead of letting the land lie idle two thirds of the season.

Here is a large percentage in favor of irrigated lands, and is all the proof needed in support of the system. One acre can by summer irrigation be made to produce as much grass or hay as three acres without it; whilst the cost, simply the turning on of the water for a few days, is but nominal.

Even to double the produce of the lands devoted to the growing of grass and hay in California, would warrant a large expenditure in general systems of irrigation, that shall be available at all times, summer and winter, and until we do have something approaching it, we shall never learn the full value of the soils and climates of California over other less favored lands.

The Wool Market.

We are in receipt of Walter Brown & Son's monthly wool circular for July, from which we extract as follows:

During the month of June the wool market continued to exhibit the same dull characteristics which have been the prevailing feature for the past three months. Towards the close, however, some animation was imparted to trade by reason of an improved demand and the known exigencies of many manufacturers whose supplies are fast giving out.

California wools are without improvement. The offerings are considerable, and holders seem disposed to meet the views of consumers even at a heavy loss to themselves.

California Tulip.

We herewith present the readers of the *RURAL* with an engraving from Nature of one of the most beautiful wild flowers of San Joaquin Valley and other parts of California. It belongs to the tulip family, and is properly called the California tulip, as its species are natives of our State.

The species engraved here is of a light yellow,

with a purple powder. It also has a large purple spot near the base of each petal, on the inside, resembling in shape and appearance the eye of a peacock's feather. A third kind, which is found only in the mountain districts, is of a light purple or lilac color, having a darker spot or eye, on the inner surface of each flower-leaf, like the species just described. These tulips when open measure from one to two inches across the mouth of the flower. Each plant



A CALIFORNIA TULIP—CYCLOBOTHTRA PUCHELLA.

or straw color. Though reminding one at first glance of the California poppy, it can be readily distinguished from the latter by the fact that it has but three flower leaves or petals, while poppy has four. Another means by which those at all acquainted with botanical terms can distinguish them is, the tulip has only six stamens and one pistil, the latter three-cloft, but the poppy has more than twenty stamens. Again, the tulip is bulbous, the poppy not. The yellow tulip grows on the hard, knolly land of the valley, and also in the foothills of the Sierras.

Two species besides the yellow are found in the same localities, differing chiefly in color. In one, the flower leaves are of a greenish white, most of the inner surface sprinkled as if

sends up from a bulb a single stem one or two feet high, producing from one to four flowers. The leaves are few and short, forming sheaths around the base of the flower-stems, as represented in the engraving.

The Latin, or systematic names of the three species mentioned above, are *Cyclobothra puchella*, the yellow kind—*puchella* meaning beautiful; *C. alba*, the white; and *C. purpurea*, the purple tulip. A fourth kind belonging to California, but which the writer has not yet found in San Joaquin Valley, is *C. monophylla*, or one-leaved tulip, which is described by botanists as having bright yellow flowers, three in number, a single leaf, and a stem less than a foot high.

The name *Cyclibothra* means *circular pit*, from

the Greek *kuklos*, a circle, and *bothros*, a pit, and was given to this flower by Robert Sweet, an English Botanist, in allusion to the round hollow formed by the lower portion of the flower. By an examination of this pit in any perfect flower of the kind, one will see that it is almost an exact hemisphere.

The upper edge of this pit in each species is heavily bearded. A common name among children in the mountains for these flowers is *cat's ears*, alluding to the shape of each flower-eaf.

Beautiful as the California tulip is in its wild state, it could no doubt be much improved by culture, and is well worthy of a place in our ornamental flower gardens.

And what would you think, children, were any one to tell you, that if you had been living a good many years ago, and could have introduced our California tulip into Europe, you might have made thousands of dollars by it. Strange as it may seem, it is even so. For a long time ago in Holland, there was such a rage to have beautiful tulips, that rich men gave thousands and thousands of dollars just to get some new kind, such as nobody else had. This rage went so far and lasted so long, that people were thought to be crazy about it, and it was called the tulip mania. Now when the tulip mania was at its height, you would have had a chance to make a handsome fortune just by carrying to Holland the four kinds of tulip that are natives of California, for they would have been entirely new in Europe. Some old nabobs might have given you five thousand dollars or more for one kind. Some neighbor of his, just from a spirit of rivalry, might have out-bid him a few thousand more for the next, and so on, until you might have made \$40,000 or \$50,000 by the investment. Don't you wish you could have tried it? Do some of you say you would like to try it now? It is too late. The tulip mania is over. Though people value beautiful flowers now, they will pay only what is reasonable for them. They prefer to spend their money in more useful ways. And then, you know, if you made money as easily as we were talking of, you would not value it. You would be apt to spend it quite as fast as you made it. After all, far the best way to make money and do well in life, is by studying hard and forming good habits while young, that you may be industrious, and prudent, and saving as you grow older. And while we strive to attend properly to all the duties of life, let us always admire and love flowers, as among the most beautiful gifts that God has bestowed upon man.

RALPH RAMBLER.

We learn that Mr. Neuman of San José, who was to demonstrate to the satisfaction of every one, the entire practicability of silkworm culture in California, and a large profit attending the same, has not been as successful as could have been wished. The report is, that his annuals, or what are known as the common French annual, nearly all died before maturity, or so many of them as to constitute a failure rather than a success. If it is not so, we wish Mr. Neuman would report his success and profit attending it.

We want to see the production of cocoons and raw silk a success, for the manufacture of silk goods in our country is rapidly on the increase. An exhibit recently made before the Committee of Ways and Means, shows the amount of capital actually invested in the manufacture of silk goods to be \$25,000,000. That there are 16,000 operatives employed, who receive as wages annually, \$7,200,000.

The raw silk consumed costs millions of dollars, nearly all of which is imported.

CORRESPONDENCE.

Figs—Inquiry About.

EDITORS RURAL PRESS:—A lady in Florida writes to me as follows: "A friend in Boston sent me some California figs which he said were dried without sugar. They were very nice and sell well. We thought if they really were dried without sugar, we might be able to do something with our abundance. Can you tell me anything about them, or the process of preparing?"

Can you answer that question through the Press? Something about the fig, as a market fruit, the best variety, and the process of drying and packing would be very acceptable to many of your readers in this section.

We shall start orchards here of all kinds quite largely in the fall. Our soil is a rich sandy loam, some light, some heavy, with water only five or six feet below the surface. The intense heat recently has curled the corn, and some doubts are felt as to its maturing without irrigation. But the great success of the artesian wells which have been bored makes us feel independent for the future. These wells give strong streams through seven inch pipe at from seventy to eighty feet deep, the last one only sixty-four feet. One of these runs a good stream of water $\frac{3}{4}$ of a mile through sandy loam. We have organized a company among ourselves to buy tools, and sink our own wells, and they will be sunk as rapidly as the tools can be moved. A well will cost about \$150, and it is estimated that one good well will answer for 40 acres.

R. S.

Westminster colony, near Anaheim.

No sugar is required in preparing the figs of commerce. Figs for drying should be "dead ripe" when picked. They should be handled with care, not bruised in the least degree; carefully spread them upon mats or boards, as closely as possible, without piling them on each other. Carefully turn them from day to day, we say carefully, because they will become very soft on exposure to the sun, and must not be broken in handling. Cover them at night from the dew if there is any, and never let a drop of rain touch them.

When they are dried so that they become somewhat tough, and can be handled without breaking, and apparently but little juice remains in them, they should be packed in boxes and set away in a moderately dry place for three or four months; during which time a greater part of the pulp of the fig will be converted into grape sugar or a sweet mucilaginous substance, that penetrates alike the whole body of the fig even to the outside. While this process is going on, much of the unpleasant taste which some find in the undried fruit entirely disappears.

As the subject of fig drying and packing is assuming increased importance in California, we will take this opportunity to give a more elaborate method of manipulating the fig in the process of drying, hoping thereby to elicit experiment from our fig growers until our figs as an article of export shall equal any of the imported.

The best Smyrna figs are prepared as follows: Procure wooden frames of suitable strength, and nail upon them, coarse wire gauze, having meshes of about one inch square; set the frames on any convenient support two or more feet from the ground. Prepare a lye by burning the trimmings or other dried limbs of the fig tree itself, and throwing the same in considerable quantities into a kettle of hot water, and make a quick lye of decided strength. When settled, draw off the clear lye, and when just scalding hot or a little below the boiling point, dip the thoroughly ripe figs into the scalding lye for about a quarter of a minute; then place them in the meshes of the gauze frames as closely as possible without hitting each other, with their stems downwards.

The reason for this method is, that large fat figs, in lying flat upon boards will sometimes burst and lose a portion of their juice which is the most valuable part of

the fig, and by setting them on end in the gauze frames it prevents their bursting and saves all the trouble of turning them from day to day. When dry enough to prevent the inside from running out if handled, which is usually in ten or twelve days, they can be removed to, and laid upon boards to complete the drying.

Figs under a very hot sun are sometimes "burned" in drying, and more particularly during the latter part of the process, and it is found preferable where the wind is dry and hot, to do the last half of the drying under the shade of trees or canvass. There is not a doubt but that figs will be very rapidly dried by some one of the inventions now in use for the artificial drying of fruits.

Inquiry About Alfalfa.

EDITORS PRESS:—My subscription expired the 1st of July, but I must have the Press can't do without it; will have the money as soon as I can sell my little crop of wheat. It is not yet cut, a portion of it not ripe, because I irrigated it and it kept green 3 or 4 weeks longer than that I was unable to irrigate. I am determined to have the Press if I have to borrow the money. I am going to try to make up a club as soon as the people sell their grain. The farmers in this portion of the San Joaquin valley are neglecting shade and fruit trees, good stock, etc. I think the Press would induce some to improve their stock and beautify their homes.

We are trying alfalfa and it grows well. I was unable to sow any last spring. The ground was put in wheat and the wheat will be cut next week. Tell me if I can sow the alfalfa in July or August or in the fall with success. I have water to irrigate with; I want to sow two acres; do not want to wait until next spring.

W. F. CLARK.

Gilroy, July 11th.

We would like to hear from our correspondent in regard to the irrigated wheat; the size of the straw, whether the grain was plump, time of sowing, time of ripening, etc., and his opinion of the practicability of its application on an extended scale.

We think his head is sound on the question of the RURAL; and his efforts to get up a club will be appreciated; and to do it effectually—when ready for the effort—send for a few copies to canvass with, which will be sent free. There are 23,744 farmers in California, and of these about 10,000 more than we now have as subscribers, would be benefitted by taking the RURAL, and they would do so, if a copy could be put in their hands for perusal.

If the land can be irrigated, alfalfa can be sown at any time in summer when it can be properly plowed. First irrigate thoroughly, then allow it to dry sufficiently to plow it deep enough to cover the stubble and weeds. Harrow down smooth, sow the seed 15 pounds to the acre and harrow thoroughly both ways with a light harrow. If the seed is good it will come up and will make its second and third set of leaves before the land will be too dry for a continued growth, when the water can be again turned on to advantage, if it seems to need it.

Silk in the Mountains.

EDITORS PACIFIC RURAL PRESS:—As many of your readers are interested in the silk-growing business, it may be of interest to them to know that Mr. Henry Keunzley, of Gold Run, in this county, (although a native of Zurich, Switzerland,) has had considerable experience, and is now experimenting in its culture with very satisfactory results. He thinks that we have here the best climate in the world for the business, as he says it requires a continuous dry weather not too hot or cold, as rain-storms retard and interfere with the active operation of the worms; and prefers this section to one much further up the mountains where it is colder or, below Auburn, where it is much warmer. He intends to send some of his cocoons to the State Fair, and will then be more fully able to report thereon.

In Switzerland, although all of the raw silk is imported, he says there are more silk goods manufactured than in any country in the world, England not excepted.

I. A. H.

Colfax, July 15th, 1862.

POULTRY NOTES.

What an Alabama Lady Knows about Chickens.

Mrs. Mary C. West, gives the readers of the *Mobile Register*, some excellent hints on the treatment of fowls, drawn from her own experience, and Prof. Stelle, the able agricultural editor, makes valuable comments on some points, which we also reproduce. The *Register* is fortunate in its correspondent and doubly fortunate in its accomplished and careful agricultural editor:

I have made up my mind to write you a chapter on chickens; but that does not imply that I am going to tell you all about what manner of creatures chickens are, and how they are produced, for I am writing to editors who must understand something about these things, and for farmers' wives and daughters who know a thing or two as well as I do myself. I don't want to write for anybody else—don't intend to do it—and therefore I may confine myself to a few practical hints, which I consider new, and which I hope to make of service to that class of readers for whom they are intended.

LAYING.—Hens lay more regularly all through the year in the far South than they do in the North. The greatest fall is in the spring, (January and February,) just about the time the hens North commence their season's laying. Eggs are not very plentiful with us at this writing. We never feed our hens much with a view to increasing their laying qualities, as people do in other sections—it might be better if we did.

SETTING.—I always find it best to set hens under shelter and on the ground. If the last is not practicable I have a green sod taken up thin and placed under the nest. This is very important, for the earth contains heat enough to keep the eggs in good condition while the hen is off in quest of food, something which boards or mere litter under the nest, would not be sure to do. I make my nests of straw pounded or bruised finely with the poll of an ax, usually laying it on a smoothly-cut stump of a tree to pound it.

TESTING EGGS.—On the evening of the sixth day after setting the hen, I go to the nest with a lighted candle, and holding the eggs up between it and my eyes, carefully observe their appearance. If they look clear and red, I know they are sterile, and so take them from the nest; they will not yet have been spoiled by the hen's setting upon them. The fertile eggs containing birds, will appear dark; that is, they will show no light through them. It is great folly to let a hen sit all through her term on sterile eggs, finally converting them into "rotten eggs," when they may be easily detected by this simple process.

ASSISTING NATURE.—About a week before the time for hatching, in dry summer weather, I go to the nest when the hen is off, and sprinkle the eggs pretty thoroughly with a little warm water. I find this a great aid to nature in the process of hatching, as it has a tendency to soften the shells. It applies equally well to all kinds of poultry.

ROOSTING.—I find that young chickens should have a clean and well-ventilated roosting place. It is best for them to sit on the bare ground. The ground of their house should be thoroughly cleaned at least once a week, by scraping it out to the depth of, say, two inches, and supplying the place with fresh, loose earth. The loose earth acts as an absorbent, and keeps the house pure and the chicks in a healthy condition. [And the loose earth removed once a week from a large flock of chickens is worth almost as much as the poultry, for it is one of the most excellent fertilizers that could be applied to plants. It should be well stirred together and carefully hoisted until the time for using it is at hand. If convenient, to cover it closely in boxes or barrels, all the better. We have tested quite a variety of fertilizers this season, but none with results better than those shown by the scrapings of our chicken-house.—Ed.]

FEEDING.—Very young chickens will have to be fed regularly until they are able to run about in quest of food. In their case most persons in this section use corn-meal slightly wetted, but experience has taught me to believe that corn "grits," given dry is best suited to their wants. I feed my young chickens regularly four

times each day. [In regions further North and less favored for poultry-growing, it is usual to feed young birds regularly but sparingly about every two hours throughout the day; that is, where persons make poultry-growing a business. Adult poultry is fed twice a day—morning and evening—and corn, wheat, oats and barley, with various garden vegetables, finely chopped, generally make up the feed. In our experience we have found them to do as well as could be desired on boiled sweet potato mashed and mixed with a small proportion of corn meal—about one part of the latter or four or five of the former. Irish potatoes, carrots, turnips, pumpkins, squashes, apples or peaches treated in the same way will be found to answer every purpose.—Ed.]

DOCTORING.—My chickens are never sick, consequently I have no doctoring to do. I think sickness among fowls is more the result of bad management than anything else; and that doctoring does more harm than good. Remove the cause and the effect will remove itself. I have, on several occasions, when chicken cholera was bad in my neighborhood, given, mixed in the food of my fowls, small proportions of powdered charcoal, oxide of iron and flour of sulphur. Never had a true case of cholera, but do not pretend to hold that the drugs administered should have credit for it. Rather think that keeping the houses clean and their floors well covered with fresh earth has been the medicine that saved my chickens.

THE APIARY.

Bee Keeping in the South.

An intelligent apiarist, Mr. S. W. Cole, of Andrew Chapel, Tennessee, writes to the *Southern Field and Factory* as follows:

My attention was first called to the subject of bee-culture through articles from the pen of General Adair, of Kentucky. I always had a fondness for bees, and the idea of having an occupation that would give me a good income, without so much drudgery and exposure to bad weather, and would allow me to stay at home in my own yard, where I could always be on hand to help my "better half" in her work, was so fascinating to me that I at once availed myself of all the attainable sources of information, such as books, periodicals, etc., on the subject, and went to work in earnest to master the mysteries of bee keeping. I soon provided myself with all the modern improvements in bee keeping, including movable comb hives, honey extractors, Italian bees, etc.; and although I had been keeping bees for years, learned more about them in one year, in using movable comb hives than I had in all my life before. I learned that colonies of bees could be kept strong in numbers and if so, would always protect themselves from the moth. That the number of colonies could be diminished or increased at will, artificially. I commenced with the belief that I could clear ten dollars from every good stock of bees wintered. My experience of five years, with improved modes, has convinced me that I can do better than that, for I have this year averaged nearly twenty dollars per hive for all colonies commenced with in the spring. I expected to have a long felt wish gratified next spring, in seeing one hundred colonies of Italian bees in my yard, and I should not be willing to pay a very high premium to be insured an income of one thousand dollars from them from the sale of honey alone. I have on my table now, offers from two large honey dealers North, to buy, each ten thousand pounds of extracted honey from me next season.

Often have I thought, on quite Sabbath mornings, in the bright summer time, when I have had leisure to recline on the grass in the shade near our hives, and listen to the low, gentle murmur of the bees, in their ceaseless labor, that if there was one spot on earth nearer to Heaven than another, it was here, and on warm days now, when I hear the first music of their gentle humming—so suggestive of the coming spring time, with all its glorious promises and think of the myriads of flowers soon to bloom in the sunny South, holding each their tiny cup of nectar, to be evaporated and lost, and of the tons of honey on every farm that is thus going to waste every year for want of bees to gather it, it constrains me to make some effort to induce others to engage in this most delightful and remunerative, but much neglected pursuit.

MECHANICAL & SCIENTIFIC.

The Nature of Comets.

We condense the following from the review of Zöllner's work on the nature of comets in the *June Am. Jour. Science*. This volume contains some contributions to the theory of comets, which are so novel and remarkable as to merit more than a passing notice, and a brief abstract of the more prominent points of the discussion is given.

Starting from the well known fact that water, mercury and many other substances, even in the solid state, give off vapor of a certain amount, though of very low tension, and inferring from the characteristic odors of metals that they too, even at very low temperatures, are constantly giving off vapor, it follows that a mass of matter in space will ultimately surround itself with its own vapor, and the tension of the latter will depend upon the mass of the body, that is, upon its gravitative energy, and the temperature. If the mass of the body is so small that its attractive force is insufficient to give to the enveloping vapor its maximum tension for the existing temperature, the evolution of vapor will be continuous until the whole mass is converted into it.

The discussion leads to the result that, in empty and unlimited space, a finite mass of gas is in a condition of unstable equilibrium, and must become dissipated by continual expansion and consequent decrease of density. A necessary consequence of this result is that the celestial spaces, at least within the limits of the stellar universe, must be filled with matter in the form of gas, pre-eminently that of the terrestrial atmosphere.

The author then proceeds to discuss the density of atmospheric air upon the surfaces of the celestial bodies and in space. Assuming for the purposes of calculation, and in accordance with the above mentioned considerations, that the space occupied by the stellar system is everywhere filled with atmospheric air, and taking the temperature as that of melting ice, he finds the lower limit of density so small that there could be no appreciable effect either upon the rays of light or upon the motion of bodies in space. The limit becomes still less in value if the temperature is taken at 60° C., with Fourier, or at 142° C. with Pouillet.

Any solid body in space must, by virtue of its gravitative energy, condense the gas to form an atmosphere upon its surface, and the density of this gaseous envelope can readily be calculated when the size and mass of the body are known. For the moon the value is found to be a vanishing quantity, and are completely in accord with the fact that no trace of a lunar atmosphere has ever been detected. For the larger planets, on the other hand, the value becomes very great, so great that the high density of their atmospheres must occasion perceptible effects, by absorption, upon the light reflected from them, and the result lends a new interest to the peculiar spectra of Uranus and Neptune, as well as of Jupiter, which appear to exhibit lines resulting from atmospheric influences.

If a fluid mass, a meteoroid for instance, should exist at a distance from the sun or any body capable of radiating heat to it, its temperature would be that of the surrounding space, and, if its mass were not too great, a slow evaporation would gradually convert it into a sphere of vapor. Should the fluid mass, however, approach the sun, the solar heat would cause it to evaporize much more rapidly, the smaller the mass, the more rapid the evaporation. The smaller comets, which have often the appearance of spherical masses of vapor, are examples of bodies of such a nature. Prof. Zöllner thinks there is no improbability of the existence of such fluid masses in space, consisting of water or of liquid hydro-carbons, and the spectra of some of the nebulae and smaller comets confirm the idea very strongly.

The peculiarities already mentioned are readily explained by reference to the general properties of fluid substances. The comets offer others which are the result of their causes, namely, their *Self-Luminosity* and the formation of a *train*, with a special relation of the latter, in its position and direction to the sun.

As to the former, only two causes are known through which a vaporous or gaseous mass can become self-luminous;—elevation of temperature, as by combustion; and electrical excitement. The first the author rejects as insufficient and unsatisfactory, assuming the second. Granting that electricity may be developed by the action of solar heat, as it can be produced by similar processes within the limits of our experience, we have a cause sufficient to account for both the self-luminosity of comets and their train-formation. The spectrum of the vaporous envelope of a comet thus illuminated must necessarily be that produced by the passage of an electrical discharge through vapor identical in substance with a portion at least of the cometic nucleus, from which the envelope is derived; that is, water and liquid hydro-carbons. Thus the resemblance and partial coincidence of the observed cometic spectra with those of gaseous hydro-carbons is explained.

The form and direction of the train indicate the action of a repulsive force. After citing the confirmatory opinions of Olbers and Halley

on this point, Prof. Zöllner asserts that the assumption of an electrical action of the sun upon the bodies of the solar system is necessary and sufficient to account for all the essential and characteristic phenomena of the vaporous envelope and the train.

When a body is at the same time under the influence of both the gravitative and the electrical forces, with an increase of mass there results a preponderance of gravitation over electricity, with a sufficient decrease in the mass the contrary. Hence the nuclei of comets, as masses, are subject to gravitation, while the vapors developed from them yield to the action of the free electricity of the sun. Investigations and researches lead to the remarkable result that, supposing the free electricity of the sun to be no greater than that repeatedly observed upon the earth's surface, and to be uniformly distributed, it would give a sphere, 11 millimeters in diameter and 1-100 milligram in weight, a velocity of 408.4 geographical miles per second, or 70,540,000 geographical miles in two days, in which time the comet of 1680, when near its perihelion, developed a train of 60,000,000 miles. These are magnitudes of the same order and show that it is sufficient to attribute to the sun electrical energy not greater than that observed on the earth's surface to account satisfactorily for the appearances presented by cometic trains.

Furthermore, comets have appeared with trains directed towards the sun, and such a direction is easily explained by the supposition of opposite instead of like electrical characters, which accords perfectly with the phenomena observed in the development of electricity by vapor-streams in the hydro-electric machine. The theory acquires an additional interest and strong confirmation from Schiaparelli's discovery of the identity of the paths of certain comets with great meteor-streams.

The Future of American Iron.

The opinion lately expressed in an article on the probable future of iron manufacture in this and other countries, that the iron industries of Great Britain were rapidly and inevitably receding from the limit of their greatest possible expansion, finds ample confirmation in the present condition of the British iron market, and fully agrees with the views of those best able to forecast the future of the trade. A comparison of prices current in the English market, with the quotations of eighteen months ago, shows that, during this brief period, the value of iron in its various forms has increased from 50 to 80, and, in some instances, 100 per cent., and there is every warrant for the belief that prices are not yet so high as to threaten a break in the market by causing an appreciable falling off in the consumptive demand. Even at the present high prices, the demand is so active that the British iron masters could sell the products of their furnaces and mills for many months in advance if they were willing to do so, but the necessity of depending upon foreign sources of supply for ores to supplement the failing production of the British mines, renders the future of iron manufacture in that country so uncertain that contracts for future delivery are only accepted conditionally, and with extreme caution in some instances, and in others refused altogether.—*Age*.

POWER OF A LOCOMOTIVE.—The driving wheels of a locomotive revolving with a velocity of twenty-eight hundred feet per minute at point of contact with the rail, and the traction of all combined being equal to six tons, the apparent effect will be this weight multiplied into the stated velocity, representing the power exerted by the locomotive. The number of foot pounds thus determined would be over thirty-three millions, or an equivalent for about one thousand horse-power—over five times the power a locomotive of such dimensions is capable of exerting.—*Leffel's News*.

To the above the *Manufacturer and Builder* adds: "We believe it has been thoroughly demonstrated that but little difference is made in the power of traction, either by speed or by increasing the surface of contact, results usually showing that the most that can be depended on is about one-fifth of the weight of the moving vehicle."

STONE TURNING APPARATUS.—Mr. J. B. Drunion, says the *Iron Age*, has invented an apparatus for turning and polishing granite and other stone, which promises to become of much practical utility. It is said that this machine will do as much turning in a day as a mason can accomplish in a week, and the mason's tool marks being avoided, the work comes out with a smoother surface—so much so that the first process of polishing is almost saved. The present machine is capable of working stones of 16 inches diameter and under, but arrangements are in progress for extending its applications to work of larger dimensions. Balusters, vases, pedestals, and all sorts of circular molded work are done very satisfactorily.

INDUSTRIAL SCHOOLS are now in successful operation in Europe, and especially in Germany, where children and youth, for five hours a day, attend educational institutions similar to our public schools, and in addition are required to spend two or three hours in practical schools, where a thorough knowledge is imparted of drawing, designing, modeling, spinning, weaving, dyeing, mixing of colors, and the use of tools and machinery.

THE SHEEP FOLD.

Sheep Husbandry.

[Written for the Press.]

The unprecedented success which has attended sheep-farming in California, renders this pursuit worthy of more attention from the farmers than it has hitherto received. The yield of wool in this State has increased from 4,600,000 pounds, in 1861, to 22,181,000 pounds in 1871, and this result, it must be remembered, has been achieved in the face of various difficulties, with many of which the farmer has not to contend. The price of wool during the last decade, has often been down to eighteen or twenty cents per pound; while at the present time it is about thirty-five cents per pound, and is unlikely to fall again to the prices that ruled in 1865 and 1866. In the first place, there is since 1867, on imported wool, a duty equal to twelve or fifteen cents per pound. This circumstance alone materially increases the price. Again while the quantity of wool and mutton required in the United States is becoming every year greater, the range on which sheep can be pastured for nothing is continually becoming more circumscribed. The owners of large flocks have to employ shepherds at a cost of three or four hundred dollars for every thousand sheep. The farmer, on the other hand, must have his land fenced, and, consequently, a small flock of sheep would cost him nothing in the way of herding. Being continually under his own eye, any diseases to which the flock are subject, would be more readily perceived and eradicated than if the sheep were in charge of a mercenary shepherd. Indeed, since some of the greatest scourges to which sheep are subject, are contagious, a flock in an enclosed pasture are not at all so liable to contract disease as if they were allowed to roam at large. Having only a small flock, the farmer can easily perceive the merits and defects of each individual animal, and by a judicious system of crossing, improve his flock to such an extent that, not only will the yield of wool and mutton be increased, but these articles themselves will be of better quality. One of the greatest disadvantages under which large sheep-owners labor, is the great droughts and consequent scarcity of grass that occasionally occur. The death of a large portion of their flocks is not the only result; the wool of the living sheep becomes deteriorated. Every time the sheep suffers from a scarcity of food, a weak spot appears in the wool; and when the supply of food is diminished to such an extent as it often is during our very dry seasons, the wool, on applying the slightest pressure, breaks across as cleanly and as readily as if cut with a knife. This is the principal reason that California wool does not bring so high a price in the Eastern markets as wool sent from other parts of the United States. All other things being equal, long wool will bring a much higher price than short wool; yet, notwithstanding this, we raise very little long wool in California; as, on account of this weakness, it is never allowed to attain its full growth, but clipped twice a year. The farmer can easily supply his small flock with food at all times, and that without encroaching to any extent on the provisions set apart for his other live stock. It is not too much to say that at the present time the farmer, for every acre of wheat he raises, burns as much straw as would be required for the maintenance of a sheep the greater part of the year. In many instances, the wheat itself would be benefitted considerably by causing sheep to feed upon it in spring. Their droppings enrich the ground, and wherever the crop is too thin, nothing is more effectual in causing it to stool than the feeding of sheep on it. The best farmers in the world adopt this plan, and even California farmers, who have no sheep of their own, recognize it to such an extent as to borrow a flock of sheep occasionally for that purpose. Sheep, too, will derive a great deal of their support on a farm from obnoxious weeds that other animals will not touch, and that will prove an injury to the farm unless destroyed. Many of these weeds spring up before the crop is planted. This is especially the case, with regard to late crops, such as corn and flax. In assisting the farmer to clean the ground preparatory to the cultivation of these crops, sheep are a positive gain, without at all taking into consideration the value of their wool and mutton. The large sheep owner sells his sheep for two or three dollars each, but the farmer when he buys a sheep in the shape of mutton, has to pay ten or twelve dollars to the butcher. Every farmer, instead of living so much on salt pork, should raise sheep enough to supply himself and family with fresh meat whenever a change in their food becomes desirable. Even if he has to sell his sheep to the butcher, he can command a better price for them than the large sheep owners can for similar animals. The large sheep owner, usually lives a long distance from market, and his sheep have to travel many

a mile before they reach the place where they are consumed. In this journey they lose flesh to a large amount, and therefore are not so valuable as when they left the pasture. They are sold in large flocks, and the butcher must purchase grass for them, often at an immense cost, until he finds it convenient to kill them. Sometimes the butcher is compelled to keep them in his yard for several days. There they suffer for the want of food and water, they grow lighter in flesh, and those that remain grow poorer in quality. With the farmer all this is different. He lives within a small distance of some town, and generally visits it once a week. Having previously come to an understanding with the butcher, he can take a few sheep with him in his wagon, and deliver them in the best condition. The butcher, seeing the sheep fresh from the pasture and when he is ready to kill them, can afford to pay a better price than if he labored under the disadvantages enumerated in purchasing from the large sheep owners. But the strongest reason that the farmer should keep more sheep arises from the fact, that under his present system of farming, the soil is rapidly losing its power of production. We will not say that he must raise less grain, on the contrary, we want him to raise more. In order to do this, however, he must reserve a smaller portion of his land for grain, and try to keep this portion up to its original fertility. Land that, in many instances, produced thirty sacks of wheat to the acre when first cultivated, now, owing to the exhaustion of the soil, does not produce fifteen sacks. The difference between the cost of cultivating and sending to market a crop of fifteen sacks of wheat to the acre, and that of a crop of thirty sacks of wheat to the acre, does not amount to more than five or six dollars, while the difference in the receipts would amount to about twenty-five dollars. Instead of trying to raise grain on his worn-out soil, let the farmer sow barley, rye, beets, etc., and have them eaten green on the ground by a flock of sheep. A crop consumed in this manner pays for itself in wool and mutton, and in addition the ground, by the process, becomes so fertilized as to produce again those immense yields which have made California the wonder and admiration of the world. JOHN HAYES.

The Sheep Dog.

Buffon thus eloquently describes the sheep-dog, and compares his sagacity and value to man, with other races.—"This animal, faithful to man, will always preserve a portion of his empire and a degree of superiority over other beings. He reigns at the head of his flock, and makes himself better understood than the voice of the shepherd. Safety, order and discipline are the fruits of his vigilance and instinct. They are a people submitted to his management, whom he conducts and protects, and against whom he never applies force but for the preservation of good order. * * * If we consider that this animal, notwithstanding his ugliness, and his wild and melancholy look, is superior in instinct to all others; that he has a decided character in which education has comparatively little share; that he is the only animal born perfectly trained for the service of others; that, guided by natural powers alone, he applies himself to the care of our flocks, a duty which he executes with singular assiduity, vigilance, and fidelity, that he conducts them with an admirable intelligence, which is a part and portion of himself; that his sagacity astonishes at the same time that it gives repose to his master, while it requires great time and trouble to instruct other dogs for the purposes to which they are destined; if we reflect on these facts, we shall be confirmed in the opinion that the shepherd's dog is the true dog of Nature, the stock and model of the whole species."

FINE VS. COARSE WOOLED SHEEP.—Probably no particular breed of sheep will suit all localities; and the kind that would prove most profitable in one place, would not in another. Where the climate is mild, the range extensive, and mutton in little demand, the Merino or fine woolled will be found the most profitable. Where the soil is rich, the pasture luxuriant, and proper shelter and winter food available, the Leicester breed and its grades will be found the best paying.

WEANING LAMBS.—The *Canada Farmer* gives the following suggestions in regard to weaning lambs: "When separated from the ewes, lambs should be placed in a field as distant as possible from them, so as to be out of reach of their bleating, and will become contented and thriving. The pasture where the lambs are, ought to be somewhat better than that to which they have been accustomed, yet not too luxuriant, and if the ewes and lambs can be turned into it together for a week, and then taken away, the lambs will not fret so much, as would be the case were they removed to a field that is strange to them."

FARMERS IN COUNCIL.

The Oakland Farming, Horticultural and Industrial Club.

The Oakland Farming, Horticultural and Industrial Club held a very interesting meeting Friday Eve., July 12th, with a very large attendance of ladies and gentlemen. Professor Carr presided. After the reading of the minutes of the previous meeting, Mr. John Kelsey was elected a member of the Club; names were also handed in for membership at the close of the meeting. After the meeting had been regularly opened Professor Carr announced the programme of the evening to be an essay by Mr. J. V. Webster, of Fruit Vale, and some remarks by himself on the subject of bread-making. As Mr. Webster had not yet arrived the Club decided to hear their President first. Dr. Carr thereupon mounted the platform and delivered one of the most interesting practical lectures (illustrated with chemical experiments) that he has yet delivered before the Club. We regret not being able to report the lecture in full, but will give the following well condensed report from the *Bulletin*:

Process of Bread-Making.

"The Doctor first called the attention of his auditors to the consumption of the various ingredients used in making different kinds of bread. Fine flour is formed of water 16 per cent., gluten 10 per cent., fat 2 per cent., starch and other substances 72 per cent. The per cent. of these properties in bran, oatmeal, cornmeal and rice were also shown, and the proportions of each that go to make flesh, fat, etc., were given. The Doctor showed some starch and gluten in separate vessels, which he had prepared during the day to assist him in illustrating his remarks. He had placed a few pounds of wheat flour in a bag, tied the neck and immersed it in a dish of water, frequently compressing the bag with his hands. The starch in the flour had thus become separated from the gluten. The toughness and consistency of the gluten was explained. The process of 'raising' bread was then discussed. The agent almost universally for this purpose is carbonic acid gas, which is generated under a variety of circumstances. The best way, however, is to generate it by fermentation. Several interesting experiments were made with chemicals, showing how the gas is made. Objections are urged by some against the use of cream of tartar, which contains an excess of soda and potash. Their action injures the coating of the stomach and impairs the digestion. The injurious results following the eating of warm bread come in part from eating the bread warm when its consistency is less favorable to digestion, and in part from the soda and potash. A healthy person might go on eating warm bread for years before his digestive organ would become impaired; and when the penalty came he might not connect it with the true cause. But there is nothing more true than that Nature's laws are imperative, and a violation of the physical as well as the moral is sure to be followed by a penalty. A person who knew how to cook food so that indigestion would not follow the eating of it was as much to be honored as the professor of a university who talked about it. Indeed, he understood that the head cook of a certain hotel in Paris receives a larger salary than any of the professors of Harvard College. The Doctor explained the necessity of there being bone-making material. A large proportion of phosphate of lime is near the outside of the kernel of wheat. This the flour does not contain. If we can supply a yeast powder that makes up this deficiency we shall have one that supplies all the wants and that instead of being injurious, will have positively beneficial effects. Light bread cannot be made from all kinds of grain. The gluten in rye is more tenacious and tough than in corn. You may make raised bread with it by putting in something to make it tough. When the gluten in wheat is affected by rain or other cause, the bakers use alum to toughen it. The alum also makes the bread whiter. Sometimes sulphate of copper, or, as it is more commonly called, bluestone, is used in very minute quantity. Perhaps the least objectionable is lime water.

The Doctor continued his remarks at some length, and concluded with the heartiest expressions of appreciation from the audience.

As the hour was getting late, Vice-President, J. V. Webster, who had come in during the lecture, decided to withhold his essay until another meeting. The Club, by vote, gave him a hearty invitation to deliver it at the next meeting, which he promised to do without fail.

Scale Insects Again.

According to promise, several members had brought some scale insects to exhibit. J. Hunt had a rose bush covered with the nuisance. A. D. Pryal exhibited an orange sprig upon which were numerous insects. He also produced from his pocket a six-legged black spider, confined in a bottle, which he said abounded on the insects. He would describe the little fellow and his influences after some further operations.

Appreciation of the Public Press.

Mr. Webster presented the following preamble and resolution, which was adopted:

WHEREAS, The PACIFIC RURAL PRESS, of San Francisco, and the OAKLAND DAILY NEWS have, unsought and unsolicited, published the proceedings of this Club al-

most verbatim from its organization, without undue criticism of the defects we feel conscious they possess, thereby publishing much that could be of but little interest except to those engaged in pursuits similar to our own; therefore be it

RESOLVED, That we, the members of the Oakland Farming, Horticultural and Industrial Club, do commend the energy and enterprise of said newspapers in this matter, and acknowledge the courtesy thus paid to this Club, and we do hereby cheerfully recommend them to the support and patronage of the agricultural, horticultural and industrial classes of this State, and more especially to those of Alameda county.

The local and agricultural press of this State have done much by their free publication of notice of meetings to be held, and liberal reports of their proceedings to encourage and support the Farmers' Clubs, which are still increasing in numbers and good results. The publication of the discussions no doubt enlighten a hundred fold more minds than attend the meetings.

On motion of Mr. Pryal, Wm. Gagan and O. L. C. Fairchild of the *Oakland News*, and W. S. Harlow, reporter for the *News* and S. F. *Bulletin* were elected honorary members of the Club.

A vote of thanks was also extended to Dr. Carr for his lecture.

Mr. Pryal said that in connection with Dr. Gibbons' remarks on scale insects, at some future meeting he would give a recipe for killing the insects.

Dr. Carr exhibited several specimens of silk worms making their cocoons, after examining which the Club adjourned till next regular meeting, Friday evening, July 26th.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The Club met as usual, President Cassey in the Chair.

The Question adopted for discussion at next meeting: "Can the Cultivation and Manufacture of Silk be made profitable in California."

Fifteen minutes being allowed to any one desiring to deliver an essay, or talk on whatever subject he may choose, Mr. Jesse Hobson discussed

The Finance Question.

He did not believe in our present financial system, he never had believed in it. We got along tolerably well while all were miners, but even then the miners would have profited by a good paper currency. The difference of exchange would have been in his favor, and let the currency be ever so good gold will always be at a slight premium.

Interest is always higher where gold circulates as money, and men can't compete in manufacturing where they have to pay high rates of interest, with a community where they have the national currency, and low rates of interest. The bankers may like and profit by our gold currency, but the common people lose heavily by it. There are many men of large means who stand ready to come to our State, and establish manufacturing, but our gold currency and high rates of interest deter them. If we want a rapid increase of population and wealth, and a reduction of taxes, we must change our financial system.

Merits of the Different Breed of Horses.

Mr. Chipman is greatly interested in the Horse Question. He likes good horses and always keeps a good team. He proposed the question desiring to learn the views of the Club. Farmers need the best of horses, and he thinks he knows a good farm horse. Can tell from build and general appearance, without regard to breed. Big farmers may need big horses, but he prefers ten to twelve cwt. to 14 cwt., for the weight of a horse. Good travellers are what we want. Slow teams lose time and time is valuable, he can not afford to keep a slow team.

Mr. Burghland said every man who keeps a Stud Horse says his is

The Best Breed.

The breed don't matter much if the build is good. Horses of the Canadian pony build are the most durable and useful. America is full of beautiful large horses, but they cannot endure. The trouble is, they are fed too high. The hardest men and horses are raised on plain food. Mr. Erskson wants a medium-sized horse, one that can walk well—walk with a load, or hitched to a plow. Walking is the principal gait for farmers. Hard-worked teams are never so sprightly or fast as if they are worked but little. The common crossed with the thoroughbred in the most serviceable. Pampering and over-feeding spoils the horse. The Arab lets his horse pick grass and gives it but a small cake of ground barley sometimes cooked.

Mr. Caldwell said heavy feeding destroys the durability of horses. In southern Illinois and Indiana, where colts are brought up in the cornfields, and fattened like hogs, they never can stand short feed and heavy work. They import most of their durable horses from some place where their food is not so plentiful. Vermont has much better horses. He said the Morgan and Messenger were good horses.

In support of what the last speaker said, Mr. Erskson referred to the serviceable Canadian horse as being brought up in hardship. Mr. Chipman says a horse can be driven sprightly and worked hard at the same time. He has a team that he has worked hard and can drive fast without a whip; there are few men who can hold them and give them one cut each with the whip. He always puts his teams to hard work to fit them for the market. Care and judgment are what are needed in the management of

horses; there are plenty of valuable horses but their owners fail to see it. A man of good judgment can make money in buying horses and bringing out their good qualities and selling again.

Mr. Holloway Jr. thinks oxen and mules should be used on the farm and not horses. It was the custom in Texas and other Southern States. Perhaps it may be called old-foggyish but it is the most independent.

Mr. Hobson thought Agricultural Societies should give prizes to walkers and not to runners and trotters, then we might gain something by it. He had seen mules and horses thoroughly tested, while in the iron trade in the South. The horse can stand as much hard work as the mule. Horses perhaps need more care, mules can stand more abuse—perhaps that is why they used them in the South in a community of slaves. Mr. Burghland said colts should be broke while sucking; like boys they need work, not overwork—to develop their muscles, and increase their capabilities. Boys who do nothing till they are grown, waste a year or two in developing their muscles.

Chipman said Wilke's has the Messenger as a cross between the thoroughbred and a small French horse. A lazy horse he would not have. There is no need of lazy horses if they are not over worked, especially while breaking. Some horses can't work without grain, yet when properly fed are just as profitable as those that can work on hay.

He would not recommend thoroughbreds on a farm. Never raise mules if you desire to be neighborly. He tried mules; they can climb like boys, and are sure to get into your neighbors' fields.

Mr. O. Cottle offered a resolution, which lies over, "That hereafter we adopt no subject for discussion unless it relates directly to agriculture without a two thirds vote of the members present." Adjourned.

Sacramento Farmers' Club.

The club met on Saturday at the usual time and place, President Baker in the chair.

After the reading and approval of the minutes of last meeting, Robert Williamson, in behalf of the committee to obtain subscriptions for the city market, reported progress and were granted further time.

Irrigation.

This subject being under consideration was discussed by Haynie, Williamson and Kendall at some length. All agree that in this State, notwithstanding the soil can be made, by good cultivation, to produce without irrigation large yields of cereals—of vegetables, of fruit, and indeed of most everything that grows from the ground—by judicious irrigation this yield can be greatly increased, even in the most favorable seasons. That by irrigation all uncertainty can be removed and farming made the most certain and profitable of occupations. All agreed that, owing to the peculiarity of our climate, irrigation must of necessity be resorted to to keep up the fertility of the soil under a system of constant cultivation and cropping. All agreed that we have in the great rivers and their tributaries ample means for the irrigation of the great central valleys of the State, and that the Sierra Nevada and coast ranges of mountains, with their numerous creeks and mountain streams, and their facilities for vast reservoirs, furnish the means of irrigating the vast area of table lands adjoining them and rendering these lands as valuable as the richest and most prolific river bottoms.

Captain Haynie spoke in the highest terms of the enterprise and sagacity of those capitalists who, seeing and appreciating these facts, had projected and were executing plans for the irrigation of the great valley of the San Joaquin, and expressed a hope that before many years equally comprehensive plans would be adopted for the irrigation of the Sacramento valley, and that the capital would be found for carrying out such plans.

Co-operative Grocery.

W. Hoyt called up the subject of a farmers' co-operative grocery store, and establishment for the sale and distribution of the products of the farm. He thought well of the idea, and believed such an establishment can be so managed as to result in great benefit to all who should join in the enterprise. He suggested that the better way would be to commence on a small scale, and add to the business as experience should dictate. If two hundred farmers should put in \$20 each it would make a capital that would do to start with, and in a little while each stockholder would find that his family groceries and expenses of living would be considerably decreased.

Aiken had thought of this subject a good deal, and was well satisfied that the plan may be adopted by which the cost of living to the farmer can be materially reduced, and the farmer can dispose of his products at much better and more satisfactory prices. As things now stand the farmer is at the mercy of the trader, both as to the price of wheat he buys for himself and family and what he raises to sell. It is high time the farmers should realize their strength, and prepare to use it for their own benefit. When men can come into the city without a dollar, rent a store and set up in the commission business to sell fruit, and in the course of two years accumulate from \$15,000 to \$20,000, and make this amount all from a few fruit-growers, it is time for those whose fruit have afforded this profit to the commission merchant, and but little to themselves, to open their eyes to the real situation of things. He was ready to

join with a few or any number of his fellow-farmers to make a change in this thing—to try to see if the producer can not make some of the money instead of the middle man taking all. The fact is, the fruit costs the consumer more than it should—so much that he can afford to buy and use but little, and yet the producer does not receive a living price. The trouble is in the system of doing the business between the producer and the consumer—there are too many profits—too much handling, too much waste, too much fruit thrown away and charged to the loss of the producers, so as to keep up prices.

Murphy was glad this subject was up for consideration. He had been talking it up outside for the last three months—had once proposed it in the Club, but did not then meet with much favor, and had consequently taken it up outside—thinks the first thing to be considered is the establishment of an agency for the sale and shipping of the fruit. As the fruit season is close upon us let us look after and establish this part of the co-operative system first, and add the grocery and other departments after. The fact is, we have no fruit commission merchants in the city—they are all speculators. When they can sell fruits so as to make anything, they will buy it, and thus they are all the time placing themselves in competition with those whose fruit they receive to sell on commission. They do worse than this; but I need not state what I know to those who know it by experience as well as I do. The fact is, we are swindled, and if we have not the spirit to protect ourselves we deserve to be swindled.

The subject was further discussed by Haynie, Hoyt, Beck and Kendall, all of whom favored the idea of union for mutual protection and advantage, but the discussion elicited a considerable difference of opinion as to the manner in which the object should be attained.

Finally, on motion of Kendall, the Chair was called upon to appoint a committee to consider the subject of establishing an agency for the sale and shipment of fruit, with power to act in their own discretion. Chair appointed as such committee, E. F. Aiken, P. H. Murphy, A. S. Greenlaw and James Holland.

The subject of establishing a co-operative farmers' grocery store was laid over for consideration at the next meeting, on next Saturday, and a general invitation to all who feel an interest in such an enterprise and who would like to join it, is extended.

The Club adjourned for one week.

Santa Cruz Farmers' Club.

Held its semi-monthly meeting at the Court House last Saturday afternoon, and decided to hold its next Fair on the 10th, 11th and 12th of next October. Great preparations will be made to make it surpass anything of the kind ever held in this part of the country. The Executive Committee will soon hold a meeting, when all the necessary arrangements will be made and invitations issued to all farmers and citizens generally to participate with the Club in making the Fair a credit to the county. F. Adams, Esq., from the committee appointed to investigate the proposition sent from the Sacramento Farmers' Club, as to the effect which the heavy rains last winter had upon grain and fruit, read a very interesting report. It stated that the effect of the heavy rains had been such as to materially effect the yield of grain. 1st—By draining low spots which were not drained before, and where the water stood on the surface. 2nd—By fouling the ground by growths of fine grasses forming a sod. 3d—By producing foreign matters, such as cheat, cockle, smut, and other foreign smut, and 4th, by preventing the farmers from getting in their late crops in time to ensure a full yield. In respect to the fruit crop, the report stated that it never was better, except peaches, which had been somewhat injured by late frosts. The report also stated that some few fruit trees had been injured by water standing around the roots, thereby decaying the smaller fibers. The Committee recommended thorough drainage as the best preventive against loss of fruit trees or their injury by heavy rains and long wet winters.

HAZEL NUTS IN CALIFORNIA.—The regular "down East" hazel nut is only found in a few localities on the Pacific Coast; they have been cultivated to some extent and with fair success—but the bushes do not yield as well as in the Eastern States—the leaves of the first year's growth are small and scattering, but the second year come out as large and profusely as the Eastern stock. The hazel nut is found in the northern valleys of Humboldt county and in Nevada county. The Grass Valley Union says: "The indigenous nut is now ripe, and juvenile America is inecacies over the treat. The bushes are loaded down with nuts. Gunny-sacks and old gloves are in active demand by Young America and the wooda are alive with the infantile gatherers. Many a treat of nuts is in store for them during the coming long winter evenings. Beware of 'poison oak,' for it abounds on all sides, and woe to the handler thereof. The treat of the nuts is well worth the risk, however, is the verdict of hot-headed youths of both persuasions."

TOADS are said to be a regular article of trade in the English market, selling readily at twenty-five cents a piece, for service in the gardens where their usefulness as insect destroyers is appreciated.

AGRICULTURAL NOTES.

BUTTE.

Appeal, July 11: GRAIN.—But little grain is being hauled to town as yet. Farmers are busy harvesting and they will not be in a hurry to haul grain at ruling prices, even if the work of harvesting was ended. At the present ruling but little grain will be marketed for some time. Farmers will sell enough to meet expenses and hold the remainder for an advance. Whether they are wise in so doing remains to be seen, but certain it is that few feel inclined to sell their grain at the prices now offered.

FRUIT.—J. G. Briggs will have about 1,200 boxes of early peaches from his young orchard this season. He is shipping rapidly now, getting the benefit of high prices. Yesterday, Cumberson shipped 122 boxes, and the day previous 119 boxes from this orchard, of very fine peaches, equal to any shipped from this city. By the time the ordinary peach becomes ready for market these early peaches will have all been cleared off at good prices.

CONTRA COSTA COUNTY.

Gazette, July 13: THE HARVEST.—The slow ripening of the grain with the prevailing cool weather, is highly favorable to the farmers who find it impossible to obtain sufficient help to prosecute their harvest labors with dispatch, if undertaken all at once. By taking the grain as it ripens most of our farmers in this portion of the county are managing to secure the harvesting of their crops with less waste than if they were suffered to stand for the chance of gathering them with a large force at one operation. The grain in the Diablo and Pacheco Valleys is nearly, if not quite, all now ready and most of it has been cut, and promises a good yield. Wheat has been threshed in Ignatio Valley which has turned off 25 sacks to the acre, where calculation was not made on more than 18; and one piece of volunteer, intended for hay, has turned out between 13 and 14 sacks, on an expectation of 6 or 8. San Ramon, and the adjacent valleys will yield well, but a considerable portion of the wheat there is yet a week or more from maturing.

FRESNO.

Expositor, July 10: From the bluff above Witt's on the San Joaquin river to Fresno, a distance of fifteen miles, the land is as level as a floor, and the soil a dark, sandy loam, occasionally of an alluvial nature, the very sandiest of which is not more so than the soil in the town of Millerton, but better from the fact of its being free from gravel, and by far superior to land in what is known as the "Paradise Country," of which so much has been said. South and west of Fresno the same character of country stretches away for miles, while eastward toward Centerville the finest grain lands of the county are found. Within four and a half miles of Fresno is the immense farm of Mr. A. Y. Easterby planted, and conducted by Mr. Chas. S. Lohse. Mr. Russell Fleming hitched up a fast team at Fresno and drove us up to this big enterprise. We were shown over the place by Mr. Lohse, and if anything in the world will overcome the incredulous minds of those who are determined upon swearing that our plains is but an immense sand desert, this certainly would. Here stretching away in every direction as far as the eye can reach is one grand field of grain. Three headers, and a steam thresher and upwards of fifty hands have been at work for several weeks in harvesting the crop, and there is still some three weeks work left on hand. Forty tons of wheat per day is being shipped to San Francisco, by rail, from Fresno—the product of this farm, and 1,000 tons are to be shipped between now and the 1st of August. On the ranch is about twelve acres of corn which stands fully ten feet in height, while melon and pumpkin vines loaded with their products are to be seen in abundance. This piece of "desert" compares favorably with the balance of the "sand heap," which stretches over a scope of country of about thirty miles one way and fifty the other. It is certainly not so good as a large area of country in the vicinity is. A branch of the Fresno Irrigation Company's ditch extends through the farm, and if turned loose would flow into the town of Fresno in two hours time. One hundred and fifty acres of corn will be planted by Mr. Lohse, so soon as the wheat crop is harvested. This gentleman informs us that there is but one drawback to the successful farming of the land of that vicinity, and that is the freight to market. This evil we think will be remedied by next year. If the railroad company will reduce the price per car load to \$40, Mr. L. will put in 5,000 acres

of grain this next winter, while other parties in the vicinity will put in from 35,000 to 40,000 acres more. Fresno is bound to be a town of importance. It will always be the point through which three-fourths of the county will communicate with the outer world. During the present summer and coming fall, from two to three hundred settlers who have applied for pre-emption claims will settle within ten miles of Fresno and cultivate the soil. Mr. Daulton expressed himself as agreeably surprised with what he saw, and was more than astonished at the remarkable misrepresentations which have been made by parties who "know all about the country." We were fully repaid for our visit, and more than ever convinced that there is no place in the State of California that offers better inducements to farmers than Fresno county, and that it is, as we have always contended an agricultural county, and better fitted for that purpose than for cattle raising.

MARIPOSA.

Gazette, July 12: THE WEATHER.—A succession of oppressively warm days has characterized the meteorological record of the present week—not ranging as high by the thermometer as is frequently experienced, but calm, sultry, and prostrating, with unusually warm nights. Wednesday was for the greater portion of the day cloudy—distant thunder further up in the mountains—a very feeble and scattering attempt at a shower, followed by a magnificent rainbow and a sunset defying the most gorgeous word-painting to describe.

MONTEREY.

Argus, July 13: WAREHOUSE.—We learn that Friedlander, the "Grain King," will shortly commence the erection of an extensive warehouse on the depot grounds at this place.

HEAVY FREIGHTING.—Vast quantities of new wheat, barley, hay, mustard seed, and other produce, are constantly passing through our streets, destined for shipment via Moss' Landing. Lumber of every kind is also being hauled through town to the interior every day. Who says that Castroville is not the gate to the great Salinas Valley.

NAPA.

Register, July 13: NEW WHEAT.—The first wheat of the season arrived from Berryessa Valley, July 3d, to Sheehy's Warehouse. Since that several lots have arrived—some to Sheehy's, and some to the Banner Warehouse. It is quoted in San Francisco at \$1.55 @ \$1.65 per cental.

SACRAMENTO.

Folsom Telegraph, July 13: GOOD YIELD. John Taylor has seventy acres of land in wheat, in Brighton, that has yielded 2,100 bushels this season. This is the ordinary yield, year by year, on the red land in the upper part of Brighton Township.

The grain in this vicinity has mostly all been harvested and threshed, and the crop hereabouts will average about thirty bushels to the acre on the red lands in and bordering the foothills. We can beat the average valley lands.

SHERIDAN, at his garden in Ashland, has an orange tree four feet in height, four years old, laden with fruit. He also has a young chestnut tree, of three years growth, laden with burrs.

HEAVY YIELD.—D. L. Williamson, whose ranch is located near Salsbury's station in this county, says the *Folsom Telegraph*, last year obtained a new kind of wheat from the East, called the Soft Siberian. He sowed a half pound, which yielded two hundred and forty pounds. This season he put in five acres, which it is believed will not produce less than seventy bushels to the acre. This is an enormous yield, and the new wheat is creating quite an excitement among the farmers in the vicinity. The yield of ordinary wheat on the same land is about thirty bushels to the acre.

SAN JOAQUIN.

Republican, July 11: WAREHOUSE AT MOSTO.—Our townsman, J. D. Peters, is building a large wheat warehouse at Mosto. The work is under the management of J. S. Davis. The building will be two hundred feet long by seventy-five wide.

HOME MADE PAPER.—The *Republican's* mailing clerk is now using for wrappers, paper made at Lane's paper mill on Weber Avenue. Yesterday the mill turned out a large quantity of brown paper, and it will be kept running until the amount on hand is counted by the ton.

WHEAT ARRIVING.—The wheat is beginning to come in. Immense quantities are piled up on both sides of the Stockton Channel.

WHEAT SHIPMENT.—J. D. Peters, yesterday loaded the barge Farmer with 100 tons

of wheat. To-day he loaded the sloop Allison, with 85 tons. Both lots go to Oakland wharf.

ARRIVED.—The steamer Fresno with barge Paradise arrived from Grayson today. She brings down a cargo of 3,000 sacks of wheat, which is consigned to Kalisher & Roseman for storage.

STORED.—Yesterday afternoon four thousand sacks of wheat were taken from the steamer Clara Crow, and stored in the Eureka warehouse.

SAN LUIS OBISPO.

Tribune, July 13: At the Cambria Cheese Factory may be seen as fine a looking lot of cheese as can be found in the State. About 5,000 pounds of milk is consumed from which nearly 700 pounds of cheese is manufactured daily, a much less yield, we believe, than at any previous part of the summer,—the season being now advanced.

SOLANO.

Chronicle, July 13: ADVANCES ON GRAIN.—The Land and Improvement Association are distributing circulars among the farming population to the effect that they are prepared to store grain at South Vallejo at 25 cents per ton, and will make advances thereupon to two-thirds its value at one per cent. per month. This will be an accommodation to farmers who are embarrassed to secure money to harvest and move their crops.

TULARE.

Delta, July 11: YALCO Valley crops are good. The grain is all cut and waiting for the thresher.

It is thought the grain crop of Tulare this year will be greater than ever before.

A FIELD on Lewis Creek of 440 acres yielded 15,080 bushels of grain. The field had no fence, and the grain was not irrigated.

FARMERS are very busy now haying and harvesting; haying is mostly completed, and harvesting just commenced. Crops are generally very good; some are light in consequence of scarcity of late rains, and late sowing. Farmers are just awakening to the importance of sowing early in the mountains, as well as on the plains.

YOLO.

Mail, July 11: THE ARMY WORM.—These pests have unexpectedly ceased to torment. They closed their career somewhat in the manner of a wart,—in an hour unknown. The destruction which followed in their course was pretty effectual, and we are happy to record—*requiescat in pace*.

THE ARTESIAN WELL.—The boring at the well has ceased for a few days in order to procure piping from the city. The depth now reached is 642 feet, and from this time the work of boring will probably be under the proprietorship of another gentleman. Mr. Peck is determined that if there is any water anywhere in that direction, he will find it.

DULL, DULL!—Woodland has been extremely dull for several days. With the exception of a little life on the 4th, this month has been terribly hard on progressive nerves. But the harvest is under full headway. Every farmer is hard at work, and the past few days has ripened the wheat so fast that the cutting is general. We ought to be thankful that no withering, threshing north winds have appeared so far to help the machines. We notice that many are stacking their wheat in order to take their time to thresh it out. A scarcity of help makes it necessary.

OREGON.

Oregonian, July 13: Farmers from various parts of Yamhill county report crops flourishing finely since the rains.

A stock show was held at Roseburg on the 4th of July, when some really fine cattle were exhibited.

Recent rains in Jackson county, it is said, will save the crops, which, otherwise would have been a total failure.

Our Hillsboro correspondent says: "It is wonderful how fields of wheat and oats have come out since the heavy rain. Most all farmers say that they expect a full yield."

A young apple tree in a garden near Walla Walla has indulged in a remarkable freak this spring. A few weeks ago it blossomed as usual, and is now covered with apples the size of a hickory nut.

Speaking of the crops and the late rains, the *Farmer* says: "The grain crops are safe and the hay much improved, and gardens are as promising as could be desired. There is one thing learned from this season, and that is the necessity of sowing fall grain. Most fall grain is very good, and always is in Oregon. Much of the spring grain is moderate. Oats a fair crop."

CHEESE FACTORY.—Mrs. Hannah M. Smith, who resides in this city and owns a

splendid farm on the Columbia river, near the mouth of Sandy, has laid us under obligations for a large piece of cheese of the best quality. Mrs. S. has been engaged in manufacturing cheese for some time, and succeeds in producing an article which, for quality, is pronounced by good judges to be fully equal to any made in the State. Some of it was on exhibition at the State Fair at Salem last fall, and was looked upon as being a superior article, though as to whether it received a premium we are not informed, but we know that the specimen sent us yesterday deserves a premium for richness, good flavor and freshness, in all of which qualities it is excellent.

Napa County.

The following Resolutions were adopted by the Napa County Farmers' Club, at its meeting on the 13th inst.

WHEREAS, It is notorious that the farming interests of the State have suffered, and are now suffering serious damage from monopolies or "rings" which take in hand and control the prices of our produce, and increase the cost to us of putting the same in market; and

WHEREAS, The farmers of this State are peculiarly exposed to extortion by being so far removed from competing markets; therefore, be it

Resolved, That we deem it expedient and necessary for the farmers throughout the State to organize a system of County, District and State clubs, with representative delegates from county clubs to district clubs, and from district clubs to a State club, with the sole objects in view of self-protection.

Resolved, That we invite the respectful attention of other county clubs to the foregoing proposition and urge them by correspondence to bring about a meeting of delegates for the furtherance of the object sought to be attained.

Endorsed, W. A. FISHER, President.
G. W. HENNING, Secretary.

We are not surprised at the movements now in progress, to enable our farmers to secure to themselves a fair portion of the profits upon their industry. It is time that such a movement be made; for under the present system the producer is made wholly secondary.

A succession of unpropitious seasons and light crops, in which the producer barely covers his expenses of production are of no manner of account to the middle-man, the grain broker; his commissions and percentages must be paid, whether producer makes expenses or not; and we see fortunes made by "grain kings," who are but the handlers of the wealth of others; fortunes that should have been held back by a proper concert of action and made to do good service where it more properly belongs. We hope every farmers' club in the State will push forward the movement.

Santa Clara Valley.

EDITORS PRESS:—In passing through various parts of the

Santa Clara Valley,

It has been a real pleasure to note the general aspect of prosperity and thrift among the farmers. It is true that the heated term of three weeks since has, in some fields, caused a premature ripening of the grain crop; but, as a general thing the crop will be good, and the grain of good quality. The failures of the past two seasons have been severely felt by many in this valley, as elsewhere, but the expression of hope and cheerfulness which is to be noted in every countenance you meet, is indicative of the change. Another change is to be noted in this valley, which may be considered a matter of congratulation, that is the improvement in social relations. On the

Fourth of July

There congregated at Cook's grove a very large number of people; farmers, merchants, mechanics and professional men, from far and wide, to enjoy the literary exercises of the occasion, and a picnic. Among these were representatives from almost every State in the Union, whose cold looks and severe exclusiveness of a few years past, were now replaced by a cordiality and friendliness which seemed remarkable, and was certainly most notable. It is very creditable to the people of this valley that the differences of the past seem to have engendered no permanent feeling of hostility.

Thos. H. Lane, Esq. delivered an oration, which was worthy of the high encomiums it received, and gave entire satisfaction to all sects and classes.

Santa Clara, July 15, 1872.

PROF. GEO. VILLE's "complete chemical fertilizer"—for a rotation of wheat, beets, barley, and peas—consists of 488 pounds nitrate of soda, 132 pounds quicklime, 352 pounds of carbonate of potash, 352 pounds phosphate of lime.

SOME men are called sagacious because they are avaricious; whereas a child can clench its fist the moment it is born.

HOME AND FARM.

HAIR BALL FROM A HOG'S STOMACH.—The *Country Gentleman* lately received from a correspondent a package containing a ball similar to the "hair balls" sometimes found in the stomachs of cattle, but which was found in a yard where no animals except hogs had been for many months, with the request for an explanation of what it was. That paper reports as follows:—Examination of this curious ball, which is about 5 inches long and 2½ in its shorter diameter, led us to suppose that it was a specimen of the hair balls sometimes found in the stomachs of cattle and swine. But as it differed from anything of the kind we had seen, we consulted on the subject with Profs. Peck and Lintner of this city, who proved satisfactorily that the hairs with which it is coated and which form a large part of the substance of the mass were hog's bristles, and who subsequently found in the collection at the State Geological Hall, a hair ball of almost exactly the same size and shape, that was actually taken from the stomach of a hog.

FARMING AS A BUSINESS.—A man who is not smart enough to run a store is not smart enough to run a farm. Farmers are not to be made out of what is left after lawyers, doctors, ministers and merchants are sorted and picked out. And if a man fails on a farm he is not likely to succeed in a store, for it requires more talent to be a thriving farmer than an average merchant. The one great failure is the disproportion between a man's farm and his capital. A farmer's capital is skill, labor and his money. If he has little cash, he must have no more land than he can thoroughly manage by his personal labor. Every acre beyond that is an incumbrance. One acre well worked is more profitable than twenty acres skimmed over. It is this greed of land by farmers that have not the capital to work it that keeps so many poor. Small farms are better than large ones, simply because they are better suited to the capital of common farmers. —*American Artisan.*

FAMILIAR SCIENCE.—A scientific paper in a recent notice of a floral exhibition, concluded as follows:—"The specimens of the *sarracenia drummondii*, of the *imantopyllium miniatum*, of the *cyanophyllum magnificens* and the *sphacrogynia latifolia* call for a distinct notice;" whereat a cotemporary quotes the following verse from Barry Cornwall's weaver's song:

"Come show us the rose with its hundred dyes.
The lily with a blot,
The violet, deep as your true love's eyes,
And the little forget-me-not."

It then parodies the same in the following fashion:

The Rose deschenhaultiana come show us,
The Lilium sepalisalis white,
With the Viola ranunculifolia endow us,
And the wee Myosotis palustris height.

TO GET RID OF FLEAS.—Mr. Ely said at a late meeting of the New York Farmers' Club that there are two or three substances that are obnoxious to the flea—he does not like the smell of them, or they remind him of something he does not like to think about—these are carbolic acid and sulphur. If you want a barn thoroughly purged of weevil, or lice, or fleas, the best way is to fumigate it with sulphur. But if you whitewash all around the stables and posts of the yard with a whitewash made by adding carbolic acid to the lime, it will drive most of these pests away. Washing an animal thus infested with carbolic soap-suds will give relief.

SELECTING CALVES FOR MILKERS.—A writer in one of our exchanges says: "The points that indicate the good cow are discernable in the calf, and why not? This may stagger some dairymen, but that is just what we wish to do. This wholesale slaughter of calves in the spring is wrong. A calf will show a good milk-mirror, as well as a cow, and a rich cream colored udder as well as a cow, a healthy, thrifty looking and strong loin as well as a cow. And these points make up the cow every time. Let the breed be what it may, this is our experience in the matter. A calf that is worth ten or fifteen dollars should not be killed for its mere hide, for the lack of judgment in selecting."

He that gives good advice builds with one hand; he that gives good counsel and example builds with both; but he that gives good admonition and bad example builds with one hand and pulls down with the other.

Animalculæ in the Mouth.

Some of our readers may not be aware that the teeth and gums, when not properly cared for, are subject to the presence of innumerable forms of animalculæ. Dirt and filth and decay always breed animalculæ, and not unfrequently larger and more disgusting forms of animal life. Probably all of our readers are aware of this fact; but that neglect of the mouth is followed by such results perhaps has never occurred to many; yet such is the fact.

Every time we eat, more or less of our food adheres to the teeth or is deposited between them, or upon the gums. Now if this matter is not removed, at least once a day, by thoroughly brushing or cleansing the teeth and gums, it sours by the heat of the mouth, and furnishes a favorable breeding place for innumerable microscopic animals, the germs of which we inhale with our breath or take into the mouth with our food. These animalculæ, when placed under a powerful glass, appear in great numbers and in almost all imaginable forms, resembling snakes, worms, snails, etc. Upwards of thirty different species of these curious little forms are quite faithfully represented in the accompanying illustration, many of which are disgusting enough when magnified so that we can get a fair idea of what they are, and their habits. Scrape off a little of the tartar or other matter which adheres strongly to the teeth, and which has been for some time subjected to the natural heat of the system, and place a small piece, not larger than the head of a pin, under a powerful microscope and you will never feel like eating until you have first cleaned your teeth and thoroughly rinsed your mouth. If these minute organ-



MICROSCOPIC FORMS OF LIFE IN THE HUMAN MOUTH.

isms are suffered to remain for any considerable time, they commence feeding upon the gums, which soon turn red, become sore and bleed at the slightest touch. Even the enamel or smooth ivory surface of the teeth not unfrequently become corroded, is broken, and the teeth decay and ache, to the great annoyance and suffering of the possessor.

We trust that all our readers who are not already doing so, will, after reading this, get into the habit of regularly and thoroughly cleansing their teeth and mouths after eating, using soap freely. If they have no brush, use a small rag, or if that cannot be had, use the finger, and afterward thoroughly rinse the mouth. By so doing you will add greatly to your general health, be repaid by sweet breath, clean, healthy, good looking teeth and gums, and the microscopist will search in vain for the disgusting forms of animal life which we have depicted above.

ALFALFA.—Lux & Miller, who are among the largest cattle-raisers in the State, for beef, own extensive ranges of land on the San Joaquin and its tributaries. Of late they have seeded large tracts of land with alfalfa, which flourishes to such an extent as to make one acre of land supply as much food for cattle as was formerly yielded by twenty acres. More than this, the alfalfa land supplies food for cattle the year round, whereas hitherto the same land furnished grazing only five or six months in the year. The general introduction of alfalfa into grazing regions will not only improve the quality, but increase the quantity of beef, and besides enable the graziers to dispense with the use of three-fourths of the land now occupied by them. —*Merced Tribune.*

PRESERVED MEATS.—Australian meats are arriving in England at the rate of 28,000 cases a month—a great increase over last year. New Zealand is also increasing its meat trade. This meat seems to take so well in Great Britain, that we expect an effort will be made to introduce it in this market.

THE DAIRY.

Points of a Good Dairy Cow.

In buying or rearing dairy cows, always try and have them of some good breed. Grades of the Ayrshire, Alderney or Short Horns are the best; she should be of medium size; fine head; very broad between the eyes; eye of a mild and pleasant expression; small horns of a waxy color preferred; rather a long neck, which must be thin but may be deep, particularly where it springs from the breast; light fore-quarters; shanks, from the knee down, short and fine; barrel round, and ribs arching well from the back; body long; back straight; hips broad—can scarcely be too much so; tail falling at right angles with the back, and should be long and fine; hind-quarters rather long and thin; udder well developed, particularly the forward part of it; teats standing well apart, of medium size, and pointing forward; the coat should be of a medium length, fine, and of a silky feel; the skin should be loose and mellow, and of a yellowish tinge.

Experience has taught us that a cow combining the greatest number of the above points is the most profitable for the dairyman to keep. Such a cow will give a greater quantity and a better quality of milk than a larger and coarser animal. Our experience in different breeds has been confined almost entirely to the native, but we believe that judicious crossing with milking families of thoroughbreds, would result in immense advantage to the dairy farmer. We would not advise any one to stock a farm with pure-bred stock of any

Selection, Breeding and Care of Cattle.

A writer in the *Boston Cultivator* gives the following as his convictions, derived from observation:

1. Stock, to be profitable, must be adapted to the locality, and the particular branch of business to be pursued. Many farms in New England cannot keep with profit the large Short-horn stock, however excellent they may be. For the production of milk, the Jersey stock is most desirable; for the manufacture of butter, the Ayrshire stock is not the best; and for the production of either, no kind of stock is profitable if not well fed and cared for.

2. It is important that in every neighborhood there should be kept a good stock of thoroughbred cattle, such as will be adapted to the feeding capacities of that neighborhood, and the particular branch of business pursued, whether of milk, butter or cheese.

3. In every case the base (I don't know that this is the best term) of all herds for profit should be the best of our native stock, taking into consideration endurance, adaptation to climate, etc.

4. All stock must be kept in good condition—well housed, and well and regularly fed—care being taken to give as much Indian meal as will keep the cows in good order. No cow will last long that is only fed with reference to a great flow of milk, to the entire neglect of fat-producing food.

5. Variety is essential to a healthy appetite, and this should be determined by circumstances, as to time of year, the use made of the milk, etc.

6. It should be known that, considering the economy of feed, the cow fed on oil-meal, whether from cotton seed or linseed, will eat about the same quantity of hay as though they were not fed with it; but the cows fed on cornmeal eat less hay—some say pound for pound; that is, one ton of meal will save one of hay.

COST OF A SMALL CHEESE FACTORY.—As there are doubtless many of our readers interested in this branch of farm industry, we take from a cotemporary the following estimate of the cost of a small cheese factory, such as a farmer might erect alone, or such as might be established by several together, forming a joint-stock company—the patrons furnishing the milk taking most of the stock:

For 100 cows, a building 60 by 26 feet, with 16 feet posts, making it two stories, would be required. Take 24 feet from the lower story for a "make-room" leaving the remainder and the upper story for "curing-rooms." The upper story should be partitioned the same as the lower. The 24-foot room over the "make-room" should be plastered and furnished with stoves suitable for curing early and late cheese. The cost depends upon the price of lumber and labor, which differs in localities. A rough, substantial building, which will answer in every respect in most localities, would cost \$1,000. If finished with paint, etc., \$1,300. It could be furnished with vat, tank, presses, hoops, scales, etc., for \$300, making in all \$1,300 for rough building, and \$1,600 for the finished one. For 200 cows, the same sized building would answer. For vat and fixtures, \$500, making in all \$1,500 for rough, and \$1,800 for finished building. This is the size of many that were built in this State this season.

MILKING WITH DRY HANDS.—I believe that much of the milk gets tainted with noxious or bad odors before it reaches the pail. Some persons, and hired help especially, have a habit of wetting their fingers with the milk every once in a while, and then wetting the cows teats, as they say to make them milk easier. Now this wetting process causes much foul stuff to drop from their hands or teats in the pail while milking. This is all wrong—cows can be milked as easy with dry hands as wet ones. I have been in the habit of milking cows; and although I have met with hard milkers that require their teats to be softened in order to draw the milk, I have generally found it easier and pleasanter to milk with dry hands. If the teats are dirty, the udder should be washed with tepid water and allowed to dry before milking; and if the teats are very hard and tough to draw, the cow had better be turned into beef, or kept to raise calves from. —*Practical Farmer.*

Mr. Jno. M. C. Reed, of Georgia, writes to the *Plantation* that his Ayrshire cow "Fancy" has yielded him in milk at home-market prices (63½ cts. per gallon on an average) \$4,712.40 in ten years time, besides raising quite a herd of fine valuable stock. He says that she has averaged two gallons per day all the time.

USEFUL INFORMATION.

The Mississippi and Niagara Rivers.

It is well known to geologists that the upper lake regions, embracing, Lakes Superior, Michigan and Erie, are very old—that they existed long before the Allegheny mountains were lifted above the ocean. The same may also be said of the region through which the upper St. Lawrence flows. Many millions of years is the length of time assigned, by geological evidence, for the existence of the lake system, and yet those same geologists are agreed that two or three hundred thousand years, at most, is the period that can be assigned for the flow of the Niagara river, through which those lakes are now drained.

How then are we to account for their drainage through the millions of years not registered in the channel of the Niagara?

Careful surveys have shown that the Niagara, at the head of the rapids, is only thirty feet higher than the waters of Lake Michigan; consequently a barrier, a little more than thirty feet high across the Niagara plateau, would throw the waters of Lakes Erie and Huron back into Lake Michigan. Other surveys have shown that the waters of the Chicago river, where they reach Lake Michigan, are but five or six feet higher than the waters of the nearest tributary of the Illinois river, which flows southward into the Mississippi. The Chicago river, in fact, has long been little better than a mere slough, its waters almost stationary, and very filthy from stagnation, so much so, that, if we are correctly informed, its upper bed has recently been deepened, for sanitary reasons, and a communication opened with the Illinois river, so that the waters of Lake Michigan are now actually flowing both ways—eastward to the St. Lawrence and westward to the Mississippi.

An old river bed, of large dimensions, has long been known to exist, through which it is supposed all the waters of Lake Michigan formerly found their way into the Mississippi; while there is a plainly defined barrier across the Niagara river, just above the rapids, which must, at sometime in the past, have prevented the waters of the upper lakes from flowing eastward.

Further evidence that these suppositions are correct is found in the fact that the enormous extent of flat country in Louisiana, Mississippi, etc., must have been made from the drift of an ancient river of much larger magnitude than the present Mississippi. There could have been no other source for such a flow of water except from the region of country drained by the Great Lakes, which is fully equal, if not greater in extent, than the area drained by the Missouri.

But what is stronger still, this mighty stream of early geologic age, once emptied its waters at a point some three or four hundred feet below its present level, as is fully shown by artesian borings, which bring up vegetable remains and chips from huge trees from that distance below the existing surface. It was by the mighty rush of the waters of this huge river, laden with mud, sand, floating and tangled trees, etc., that the thousands of square miles of the best cotton and sugar land on the Continent have been made all along the north western coast of the Gulf of Mexico. It is said that unmistakable evidences of the once rough and rugged bottom and shores of this stream are still to be seen along some of the upper portions of the present bed of the Mississippi. The gradual subsidence of the land near the Gulf must account for the apparent elevation of its waters from the level of their earlier deposits.

Putting Grindstones in Order.

It is impossible for any one to grind a tool properly on a stone that wobbles like a drunken carriage-wheel. In order to grind the basil of a chisel or plane-iron true, the periphery of the grindstone must revolve as true as a millstone. The first step toward putting a stone in proper order is to measure from the center or the eye to the periphery, on four sides, for the purpose of determining whether the stone has been worn off more on one side than on the other. When a stone is driven by a treadle, a large part of the grinding is done on one side of the stone when the treadle is going down. In such a case, the stone should be rehung with the journal nearer one side of the eye than the center of it. After it has been hung as true as practicable, screw down the caps of the bearing-boxes so that the journal will have no play; then, with the end of an old file turn a small groove near each edge of the periphery, after which dress off each side with a sharp cold-chisel an inch or more from the grinding surface. Now fix a solid rest close to each side of the stone, turn a small groove in each side of the stone, and dress off the prominent parts with a sharp cold-chisel. Always cut horizontally toward the middle of the stone from each side, and thus avoid splitting away large chips from the side of the periphery. Always use a light hammer or mallet and a small half-inch chisel. With a heavy hammer and large chisel, there will be great danger of chipping off a large piece of the stone beyond the mark. With a light hammer and a small, sharp chisel, one can fit up the periphery of a wobbling grindstone, in a brief space of time, so that it will revolve satisfactorily true. *The Industrial Monthly.*

What Oils will Ignite Spontaneously.

That certain drying oils, as linseed, for example, absorb oxygen, thereby raising the temperature of the article on which they may be spread, is well known, or ought to be, and this increase of temperature may be carried to the extent of causing combustion. That oiled rags, etc., do take fire, and the fire is from them often communicated to woodwork, must be admitted. Hence, the origin of certain fires that cannot be accounted for otherwise.

The recent burning of the monster balloon at Chelsea, Mass., is a case of spontaneous combustion, the linseed oil and varnish with which it was coated taking fire by the absorption of oxygen and raising the temperature to the extent of setting the cotton cloth, of which the balloon was made, on fire.

But these drying oils are vegetable products, the chief one used being the linseed referred to. It does not follow that animal or mineral oils will produce any such effect, for they are not drying oils and therefore absorbers of oxygen. Yet the mistake is possibly made and the idea is certainly entertained that rags and sawdust saturated with lubricating oils will take fire spontaneously. We do not understand the matter. The fire at Faber's pencil factory in New York, lately, has been attributed to sawdust saturated with machinery oil, taking fire spontaneously, but with how much reason.

Quite likely the common mistake is made that because certain things moistened with certain oils take fire, these same certain things will or may take fire if wet with any oils. Some go so far as to say that oil heated by friction in machinery bearings if allowed to fall on cotton rags, waste, sawdust, and the like, will generate sufficient heat to take fire, but of that we want proof. It is an important matter, and it is to be hoped those who possess facilities will investigate the subject further.—*Cabinet Maker.*

THE NARROW GAUGE CONVENTION which recently met in St. Louis, was expected to be attended by every manager of such an interest in the country, and to develop certain facts concerning which many railroad men are now in doubt. The friends of the narrow gauge system assert that their road can be built and equipped at a cost not exceeding one-half that of the broad gauge; that they earn as much per mile as the latter; that they are equally rapid in transporting and far more secure. So far there does not seem to be any question regarding the practicability of narrow-gauge for the business to which it has been applied.

GRAFTING WAX.—A recipe for making grafting-wax, from a practical nurseryman of great experience; is—resin, six pounds; beeswax, one pound; tallow, one pound; melt and work until cold. This is to be used warm, when working in the house. For outdoor work, Mr. J. J. Thomas recommends the same formula, except using linseed oil, one pint, in place of the tallow. For outdoor work a good wax is made by using one to two pounds less of resin, one-half to one more pound of beeswax, and one and one-half pints of linseed oil; to be melted, made in a mass, and applied by hand.

TEST FOR JAPAN.—Pour out a few drops of Japan on a stone or a piece of glass, and add two or three drops of raw linseed oil. Stir the two together, and if the oil readily combines with the Japan, the dryer is of a quality safe to be used on carriage work. If the Japan repels the oil and the end of the stick becomes gummy, the Japan is worthless. We have the above from a varnish and Japan maker of large experience.

TAN COLOR.—The best way to make this shade is to get a pail of ground bark from the tannery; but if that can't be done, make hemlock bark as fine as possible, soak or beat it until you think the color is out; make your goods as soft as possible by washing them in strong soap suds, and immerse; if not dark enough, add more bark. Don't color in iron, it will make drab; if you want drab, add a little copperas.

MILDEW IN BOAT SAILS.—A safe plan is said to be to dry the sails thoroughly, in the open air if practicable, and to sweep them well on both sides with a strong hair brush, having sprinkled it beforehand with water in which a little ammonia has been dissolved. Do not roll the sails up wet, as it is damp which has produced the mildew. To disinfect sails, or prevent infection, carbolic acid is good.

THE tendency of steam is to fly to the coldest place to impart its heat. If, for instance, a ball of ice be suspended at the ceiling of a room, and some water thrown upon a hot stove in the room, the steam thus generated will go continually to the ice until it is melted. Thus as an equalizer of heat steam has no equal.

ENGRAVING EXTRAORDINARY.—Claude Mellen engraved in 1700, a full head of Christ with one unbroken line. This line commenced at the apex of the nose, and wound out and out like a watch-spring, until it ended in the border of the picture.

MISERY assails riches, as lightning does the highest towers. Or as a tree that is heavily laden with fruit breaks its own boughs, so do riches destroy the virtue of their possessor.

GOOD HEALTH.

Increasing Longevity of Human Life.

A cotemporary says that physiologists tell us that with a greater prevalence of knowledge of the laws of health the world may expect an increase of the average duration of human life. Perhaps this time is already dawning. At any rate here are a few "health considerations" for those above sixty. Von Moltke, comparatively juvenile at seventy, plans and executes such a campaign as modern times never witnessed; Emperor William, tough as oak at seventy-four, roughs it on the field as jauntily as a young lieutenant. Von Roon, the Prussian War Minister, older than either General or Emperor, directs from Berlin the marshaling of hosts and gathering of supplies.

Nor were these wonders of longevity by any means confined to the German side of the contest. Thiers, at seventy-five, was seen at the end of the contest flitting with the vivacity of a boy from one camp to the other, as a negotiator of peace, and as the executive head of the French Government has since shown a power of intellect and application to business that would be considered wonderful in any man even in the prime of life. Of his associates, Dufaure, the Minister of Justice, is seventy-three, and Guizot, King Louis Philippe's ex-Minister, though past eighty, writes books with as much force as when he occupied a professor's chair. In England, where men are reckoned young till they are past fifty, splendid examples of vigorous old age are plentiful. Palmerston, Lyndhurst and Brougham, octogenarians all of them, led public opinion of Great Britain to the end of their days, and in harness. It is said of the first of the three, that after a field-night in the House, he would be seen at daylight walking home at a pace which a young man might envy. Thomas Carlyle, over seventy, abates nothing of his intellectual vigor; while Lord John Russell, though creeping towards eighty, still attends the Upper House of Parliament.

MERCURY IN THE HUMAN SYSTEM.—A tablespoonful of quicksilver was lately found in an old grave in York county Pennsylvania. It is supposed to have been buried there in the shape of calomel within the patient.—*Ex.*

In old times the doctors sometimes administered pure mercury as a medicine; a more common form of mercurial administration was the blue mass. Either of these prescriptions would account for the presence of quicksilver; but dosing with calomel would not.—*Scientific American.*

We have known globules of mercury to be abstracted from the systems of persons who had never taken it in any form but that of calomel. Calomel being a chloride of mercury formed by heat and a pulverizing process, the mercury can be precipitated or restored by the use of acids. Why will not the acids of the stomach, which will not act upon the mercury itself, deprive it of its chloride vehicle and leave it pure. If the American does not believe that dosing with calomel will account for the presence of quicksilver, it can be satisfied of the fact by submitting a calomel dosed patient to an electric bath.—*Am. Manufacturer.*

NECESSITY OF CAREFULNESS IN OLD AGE.—An old man is like an old wagon; with light loading and careful usage it will last for years; but one heavy load or sudden strain will break it, and ruin it forever. So many people reach the age of fifty, sixty, or even seventy, measurably free from most of the pains and infirmities of age, cheery in heart and sound in health, ripe in wisdom and experience, with sympathies meliorated by age, and with reasonable prospects and opportunities for continued usefulness in the world for a considerable time. Let such persons be thankful, but let them also be careful. An old constitution is like an old bone; broken with ease, mended with difficulty. A young tree bends to the gale, an old one snaps and falls before the blast. A single hard lift; an hour of heating work; an evening of exposure to rain or damp; a severe chill; an excess of food; the unusual indulgence of any appetite or passion; a sudden fit of anger; an improper dose of medicine;—any of these, or other similar things, may cut off a valuable life in an hour, and leave the fair hopes of usefulness and enjoyment but a shapeless wreck.

DRUGGING.—A writer in the London Standard described a "most successful mode of drugging" in use over the American continent, which produces loss of strength and torpor, and which, in the case of death resulting, defies the most acute medical analysis. He was himself once a victim to this drugging. He drank one mouthful of so-called brandy, and in ten minutes after he became giddy, lost the use of his limbs, and then consciousness, and did not recover for some seven hours sufficiently to enable him to walk. He subsequently got acquainted with a man who had been employed at a New York vault to enact the part of a druggist, and this respectable, and no doubt reliable individual, explained the drugging process. Part of a bottle of any liquid is decanted and the space filled up by tobacco smoke, expelled from a clay pipe, well impregnated with nicotine. The bottle is then well shaken and filled up again with the portion before taken out. It is then left to stand for a week or so; but if left standing for a fortnight death will be the result of drinking.

PHYSIOLOGICAL ACTION OF QUININE.—The physiological action of quinine has lately been the subject of detailed experiment by Binz, who found it to have extraordinary power in arresting the process of fermentation and putrefaction, and to be a powerful poison for low organisms, or, in other words, for all moving bodies consisting of protoplasm. It appears to kill fungi and bacteria, which accompany fermentation and putrefaction, and puts a stop to these processes. It arrests the motion of the white blood corpuscles, and thus prevents them from making their exit from the blood-vessels. It therefore diminishes or arrests the formation of pus in inflammation, pus consisting in great measure of an accumulation of white corpuscles which have issued from the vessels. It also destroys the power of certain substances to produce ozone. The red blood corpuscles have this power, and, by depriving them of it, quinine, when present in the blood, must diminish the change of tissue in the body, and thereby lessen the production of heat.

It is also found that quinine lessens oxidation in the blood; other substances, such as snake poison, increasing it. When putrid fluids are injected into the circulation of an animal, its temperature rises; but if these are previously mixed with quinine, this rise is arrested, or very much diminished. According to Zuntz, the use of quinine has a marked influence upon the excretion of urea, the amount diminishing very greatly.—*Harper's Monthly.*

ANCIENT DENTISTRY.—Among the ancients great success was obtained in this art. Cassellus was a dentist in the reign of the Roman emperor, and gold was used in the filling. But nearly 500 B. C. gold was thus used, and gold wire was employed to hold artificial teeth in position, and it does not seem to have been a new art. A fragment of the tenth of the Roman tables, 450 B. C., has reference to preventing the burial of any gold with the dead except that bound around the teeth. Herodotus declares that the Egyptians had a knowledge of the diseases of teeth and their treatment 2,000 B. C. In Martial, Cassellus is mentioned as either filling or extracting teeth, but he specified that he would not polish false teeth with powder. These facts cover a period of 600 years.

FATIGUE.—In order to understand, says Leibig, the influence of an irregular expenditure of force, we need only to remember that when greatly fatigued we lose our appetite, and that when the stomach is in full activity the limbs are indisposed for performing hard work. Insufficient nourishment and fatiguing work, during the period of growth, stop the corporeal development of the individual. The amount of daily exercise necessary for health depends upon the kind of exercise, and varies considerably with different persons and with the same persons at different times. A safe rule to go by is to exercise until slightly fatigued. It should not be continued so long that half an hour of perfect rest will not entirely remove all feeling of fatigue.

MORBID FEARS.—The fixed idea of having heart-disease is a very common one. We know an Indian officer who indulged in it for twenty years, to the great annoyance and terror of his wife and his friends, and who died at a good old age, with a perfectly "sound heart," physically speaking. By auscultation, doctors can very easily tell you whether the heart is right, just as you can hear whether a clock is right as to its tickings and beatings. There are other very sure symptoms well known to the profession. Many persons also fear they have cancer in the stomach or liver; or a tape worm, or some other dreadful malady; but generally these fears are the result of a disordered imagination, and groundless.—*Herald of Health.*

MICROCOCCI IN MEASLES AND SCARLET FEVER.—Dr. Hallier, well known by his researches upon the fungi as supposed agents or concomitants of disease, states in a recent paper that measles and scarlet fever are both occasioned by the presence of certain fungi in the blood, which can be seen by the microscope in the form of minute cell-like spores, called micrococci. In the course of treatment of persons affected with the above diseases care was taken to collect the perspiration obtained from the patients under these circumstances, which, on being submitted to Dr. Hallier for examination, was found to contain the micrococcus in abundance.

TOOTHACHE.—A correspondent of the *English Magazine* gives the following curious remedy: Put a piece of quick-lime as big as a walnut in a pint of water, in a bottle. Clean the teeth with it, every morning, rinsing the mouth with clean water afterwards. If the teeth are good, it will preserve them and keep away toothache; if the teeth are gone, it will harden the gums, so that they will masticate crusts and all.

IN India, where stinging insects and several crawling reptiles are often wounding people, they apply chloroform on lint, which speedily allays irritation and perhaps neutralizes the poison. Why not try it here.

OIL OF PEPPERMINT.—A writer in the *American Journal of Pharmacy* asserts that commercial oil of peppermint is adulterated to the extent of thirty to forty per cent., with castor oil and alcohol.

TAKE CARE OF YOUR HEALTH.—A man too busy to take care of his health is like a mechanic too busy to take care of his tools.



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SAN FRANCISCO:

Saturday, July 20, 1872.

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State Fair.

The officers of the State Society are wide awake making preparations for the approaching State Fair. At a meeting of the Board on the 9th inst., a full speed premium was adopted, and will soon be published. The price of admission to the Park was reduced to 50 cents, and the price for a seat in the grand stand was fixed at 50 cents for gentlemen—Ladies' seats free.

The Superintendent of the Park was authorized to make all necessary arrangements for additional stalls at the Park so as to accommodate a much larger number of stock of all kinds than ever before. The Visiting Committee reported that the prospects are good for one of the largest exhibitions ever held on the Pacific Coast.

Everybody seemed to be making arrangements to attend. All the district and county fairs are working in harmony with the State Society. Taken all in all the Fair of 1872 bids fair to exceed all its predecessors, and present a creditable exposition of the industries and resources of the State.

REFUSED.—The advertisement (with cash) from W. H. Chidester, New York. Reason. We think our readers are better off without reading, and certainly without answering his advertisement.

ON FILE.—From J. M. S., Hopeton. From G. D. C., Riverside. Farm House Chat.

Editorial Notes Among the Farmers.

It is so uncommon to have poor crops in Sonoma county that every farmer we met seemed to feel called upon to apologize, not only for the appearance of his own grain but for that of the general grain crop of the county. As we have before remarked, the coast counties are generally favored with a good complement of rain each winter, and the fogs of the summer ensure a good crop of the cereals. The past winter, however, brought so much and so constant rain during the usual time of sowing, that all farming operations were suspended until very late in the season. The consequence was that the grain was generally sown late and the ground was not in very good condition. The usual late rains failing and the accustomed fogs being suspended this season, the cereals and grass are unusually light. But no other people of the State are in a better condition to meet the consequences of light crops than those of Sonoma county. And while they apologize they do not complain. In fact they seem as well satisfied with their lot and location as any people we have met in the State.

Petaluma.

This town is, of course, to some extent, feeling in advance the effects of a comparative failure of crops in the county, but a more gallant, enterprising, generous-hearted people, we have not met in all our travels, than the people of Petaluma. Nor have we met anywhere a more wide-awake and determined set of men controlling the business and destinies of a District Agricultural Society than those composing the management of the Sonoma and Marin Society, located at this place. Already are they busy in making preparations for the annual fair, to come off in September. Already are many of the stalls at the fair ground occupied with young horses in training for the trials of speed to be had at the fair.

Seneca Daniels,

That successful stock breeder, both in the line of horned cattle and horses, has fifteen colts, all the get of his celebrated stallion McLellan, on the grounds speeding for the District and State Fairs.

Mr. Daniels has now seventy colts between one and six years old, sired by this favorite horse, and if we are not mistaken, some of them will make a record worthy of their sire. He has six thoroughbred mares, the dams of a number of his most promising colts.

Devon Cattle.

At the residence of Mr. D., we had the pleasure of seeing his herd of beautiful Devon cattle. This herd consists of twenty-five head of cows and calves—all one color—a deep bright, red. For easy keeping qualities symmetry of form and desirableness of color, this breed of cattle are not excelled by any other. In Mr. Daniel's opinion they are for general purposes superior to all others. Mr. D. had just sold his two last bulls—one a three-year old and one a yearling. He will import others this summer to supply their places. He has also a number of very fine bull calves.

Hennery.

While walking over the rolling hills of which, in part, Mr. D's, valuable home farm consists, we came upon one of the most extensive and best planned and managed henneries it has ever been our lot to behold in California or any other State. It might very appropriately be termed a chicken village. It was located in a ravine through which was a small stream running, supported by living water. The surrounding hills protect it from the prevailing winds. The village consisted of some three or four small board houses about 12 by 14 feet square. In one end of each of these houses were the nests and in the other the roosts for the large fens. These houses were situated at a considerable distance, say twenty rods apart. One house of about the same size was the store room for the chicken-feed and a work-shop for the poultry master. Scattered over a space of four or five acres, and extending up the sides of the hills were one hundred and fifty coops, each one containing a hen, the mother of a brood of chickens or turkeys.

The prettiest sight of all were the young chickens and turkeys, from 1,500 to 2,000, all the way from a quarter to half grown, running in droves all over the country for a mile and a half in circumference, to the very summits of the surrounding hills, catching the unlucky flies and grasshoppers that happened to come that way. Mr. D. says this chicken business is the

best paying enterprise he has engaged in. He started it to supply his table with meat and eggs, but it had grown away beyond the requirements of his own table and now makes no small figure in the annual income of his farm. The chickens, old and young are all healthy and in a thriving condition, and by careful management, keeping the coops at a good distance apart and clean, and supplied with plenty of fresh water and good food they are kept so from year to year.

Among the Wine Growers.

Sonoma Valley is one of the first localities in the State in which the vine was planted, and is justly celebrated the world over, for the superior quality of its wines and brandies. To visit this valley, its vineyards and wine cellars, was therefore one of the principal objects of the visiting committee in their travels through this portion of the State. This fact was no sooner known to the Board of Directors of the Sonoma and Marin Agricultural Society than provision was made for our conveyance to the desired locality, and Treasurer F. W. Longee, and citizen G. Warner, volunteered to accompany us. A pleasant ride of about three hours in an easy carriage over a spur of the Coast Range, that divides the Petaluma from the Sonoma valley, and at the same time serves as a barrier to the coast fogs found us at the palatial residence of J. R. Snyder. This residence is situated on the east of the valley, on the brow of an oval hill at an elevation which commands a delightful view of the rich flatlands of the valley below. The ever present light-green of the vineyards through which you ride, and which here everywhere abound, the cropping out of volcanic ledges here and there as you wind your way up the elevation, the massive walls of the wine cellar seen through the dark green foliage of the live oak, and the lofty broken peaks of the Coast Range in the back ground, give to the location an air of Alpine beauty and grandeur. As you approach the residence, you seem almost to hear within its massive walls the Major's voice as he sings:

"The ruby dew that 'stills
Upon Val d'Arno's hills,
Touching the sense with odor so divine
That not the violet,
Its lips with morning wet,
Utters such sweetness from her little shrine.
When I drink of it I rise
O'er the hill that makes all poets wise;
And in my voice and in my song
Grow so sweet and grow so strong,
I challenge Phoebus with his Delphic eyes!
Give me then from a golden measure
The ruby that is my treasure, my treasure!"

We were temporarily disappointed in finding that the Major was not at home. But a few minutes elapsed, however, when he and his daughter drove up and extended to us a cordial reception, in that easy and hospitable manner for which the old California pioneers are so eminently distinguished, and which places one so completely at ease. A walk through the vineyard shows that the location has been selected with admirable judgment. The soil is of the best for wine purposes—being, to a great extent composed of the wash and debris of the surrounding hills, thrown up evidently by volcanic eruptions. Being sheltered from the fogs of the coast, and yet so near the sea, the climate is equable and well calculated for ripening the grape in the best possible manner to make a light and delicate wine. We next were shown the cellar and invited to sample the wines themselves. Here we found samples of each year's vintage since 1866. We will not attempt here to give an opinion as to their quality. Suffice it so say that the Major intends placing samples on exhibition at the Wine Growers' Association, to be held in connection with the State Fair, and we think he may do so without fear of an unfavorable result. The Major is wide awake to whatever may benefit this great industry—to whatever may improve our wines and introduce them into general use instead of the alcoholic and poisonous mixtures heretofore so extensively imported to this country. He is now engaged in testing the wines of the different vineyards in Sonoma county, to ascertain their percentage of alcohol. His cellar contains from 35,000 to 40,000 gallons of wine, mostly of the vintage of 1870 and 1871. We spent here a most agreeable night, and after breakfast next morning the Major's carriage was at the door ready to give us a turn through the valley. The first place we visited was the

Buena Vista Viniculturist Association.

Learning that by the rules of this association the Superintendent could not admit anyone into the cellar without permit from the President, Judge O. H. Pratt, we had taken the precaution to be fully armed and equipped with the necessary papers. We were politely met by Messrs. Grotham and Kitz the cellar master and champagne maker in charge, and shown the entire establishment, but as the RURAL has lately given a full and very correct description of the same, we shall omit particulars. The Association has on their place 540 acres of bearing vines. They have sold nearly all their wine except the vintage of 1871—samples only of previous vintages since 1866 having been retained. In 1871 they made 142,000 gallons of wine and 5,000 gallons of brandy. They turn out about 5,000 bottles of champagne each month. There are at this time about 30,000 bottles in the racks. Each bottle is jarred by hand each day while in the rack, and the average time of setting is two and a half months. We went through the entire establishment and were very politely shown every process, and listened to a full description of the same by Mr. Kitz. Our traveling companion, Col. Younger, being more of a cattle than wine man, and having been told that it

was almost impossible for one to go through so extensive an establishment and come out perfectly straight, faltered on the way and awaited our return in the outer room. We noticed, however, when the sparkling champagne was brought on he seemed to appreciate good wine as well as any one. So much so that the Major could not forbear relating the anecdote of the Piker who, having indulged on a similar occasion, confidentially remarked to a friend, "this is the best way to eat grapes I ever knew, you get so much grapes in so small a compass."

O. W. Craig.

We next visited this gentleman's place; he has a vineyard of about 28,000 vines; buys grapes from neighbors and makes on an average from 25,000 to 30,000 gallons of wine a year. Has on hand samples of wines since 1867. Is also extensively engaged in making brandy. Uses Schleifer's patent still and thinks it has many advantages over other kinds. From the quality of the brandy tasted we conclude that either the still is good or Mr. Craig understands his business—perhaps both—also that the material from which it is made must be superior. We were next driven to the farm of our old Sacramento friend,

Leonard Goss,

Who with his amiable lady gave us a cordial greeting, and did not forget the wants of the inner man. Mr. Goss has a beautiful and valuable farm of 320 acres, is engaged in generally farming, including vine growing and wine making. Has 75 acres in vines just coming into bearing; made his first wine in 1871—10,000 gallons; takes to country life naturally and says he is happy and contented.

On up the valley we went, Mr. Goss increasing our party, to the place of

William McPherson Hill,

One of the pioneer horticulturists and farmers of Sonoma valley and the State. Mr. Hill was to Sonoma what A. P. Smith was to Sacramento. As early as 1852, he imported fruit trees of various kinds and set out an orchard. In 1866 his peach trees bore quite freely and sold peaches at \$9 per dozen, in quantities. From 200 peach trees planted in 1862, he gathered in 1867, 37,000 lbs. of peaches which he sold as high as \$1.25 per lb. From the two cherry trees planted in 1852 he realized in 1855 \$80 per tree for cherries sold, of these two trees one died this season and the other is still alive. Mr. Hill is also engaged in the same business. He has 75 acres in vines mostly of valuable foreign varieties—prizes the Zinfandel very highly for wine—has samples of wine on hand of each year since 1867—winter of 1871—10,000 gallons. On our trip through the valley we passed many other valuable places and regret we had not time to call. We shall long remember our trip through Marin and Sonoma counties. We found the RURAL everywhere and consequently felt at home everywhere.

Artesian Wells in Idaho.

We see by the Idaho Press, that artesian wells are to be resorted to in that Territory, for irrigation purposes, and supply of water for the towns. The valleys and plains of that Territory are well suited to agricultural purposes in every respect except a supply of water—the spring rains and melting of the snows are all they have to depend upon for the season. With water, the plains would "blossom like the rose," and the soil produce an abundance of grain, grass and vegetables. The soil of the large valleys that are so destitute during the hot summer months is really better than that of Utah—which is so well adapted to agriculture when properly irrigated. The Idaho basins with plenty of water would yield fine fruits, and produce the best varieties, and in great abundance. Some experiments have been made by enterprising parties who have located small farms where they could supply themselves with water from a river or large springs—and the result has been satisfactory.

The citizens of Boise City have been devoting their attention within a few weeks to this artesian well system—they have experienced some trouble and drawbacks from employing incompetent men, and put to considerable unnecessary expense. The Standard gives the citizens a piece of advice to this effect: "Try it again and succeed, and thus get back the money now apparently thrown away. It is your only chance to get even."

The Queen river valley and all the valleys north of Snake river, are rich in soil and climate, and with plenty of water would make fine farming lands, and afford pleasant homes to the agricultural citizens of Idaho. Several wells have been dug in all these valleys and water is usually obtained at 20 or 30 feet below the surface.

The Artesian Well company now operating at Boise do not seem to understand the process of drilling, whereat the press of that city advise them "not to get the cart before the horse so often." No doubt the successful sinking of the wells and a bountiful supply of water will yet reward the labors that are now being made under difficulties.

An Hour Among the Flowers.

In all this beautiful world, San Francisco is undoubtedly the one only Eden of flowers. Our climate is so genial that summer and winter, winter and summer, they are seen in such prodigal profusion, variety and beauty as to excite the admiration of every resident, lover of the beautiful and the envy of the stranger.

Upon the altar of prayer, on the desk of the banker, the counter of the merchant, in the lady's boudoir, in the parlor of the rich and in the dwelling of the humblest poor, these emblems of purity pour out their rich fragrance and gladden our hearts with their sparkling beauty; and we have often wondered where all these charming flowers came from.

Attracted by a gorgeous bouquet and pots of strikingly elegant flowers in the window of the business house of E. E. Moore, seedsman, nurseryman and florist, 425 Washington street we were induced to step in and see if we could solve the mystery of their place of growth and rare development. We found them to be entirely the growth of his own grounds, and he invited us at once to take a ride with him to the corner of Jones and Chestnut streets and see what he was doing in his line of business.

We accepted the invitation and in a few moments were at the place indicated. Here, so near North Beach it seemed to us the ocean air must be too harsh for the growth of such delicate beauties, we found a perfect exuberance of vegetation, in a soil evidently well adapted to the growth and habits of a vast variety of plants, that in green houses and open grounds were everywhere flourishing in the full strength of a perfect development.

In one portion of the grounds, are the propagating borders, where the choicest plants the world produces, gathered in from England, France, Italy, China, Japan and Australia are reproduced from seeds, suckers, slips, cuttings and divisions of roots and bulbs, and grown to a condition of flowering perfection.

In another quarter are seen great masses of beautiful flowers, from which bushels are daily cut and sold to the regular bouquet dealers, whose business is specially to arrange them in bouquet form for market, a business wholly distinct from their propagation; and it is simply astonishing to see the immense quantities of flowers that these grounds daily supply, not only to bouquet dealers but to others who may send in their orders.

Not only flowers, but here also are grown all the choicest varieties of elegant plants, elegant in form of leaf and coloring and so many species as to be beyond enumeration here, were we to attempt it. Nor is this all, but the most rare, useful and ornamental among deciduous and evergreen trees, here find a genial soil, and show a growth that tells of a scientific culture. And thus and there we found one of the sources from whence comes so many beautiful flowers.

WHO HAS LOST A BRIDLE?—A Minnesota wood-chopper hewed down a tall tree the other day and upon splitting up the trunk with an axe and wedge, found embedded in the wood at the point where the trunk diverged into branches, a leather bridle of antique pattern, with bit and buckles attached, and all in a remarkable state of preservation. It was found fully thirty feet from the ground and its presence there can only be accounted for by the supposition that some passing horseman had used the crotch of a sapling as a rest for his bridle, and, led from the place in pursuit of his straying horse, had been unable to find it again, and abandoned the bridle to be carried up and entombed by the slow growth of the tree. It is believed that the tree must have been fifty years in hiding its treasure.

We clip the above item from the *Morning Call*; but hope it is not claimed as original, for who does not know, that there is no elongation or lifting up of the trunk of a tree or its "crotch," if it have one, from the height at which it is first formed, though it live a thousand years.

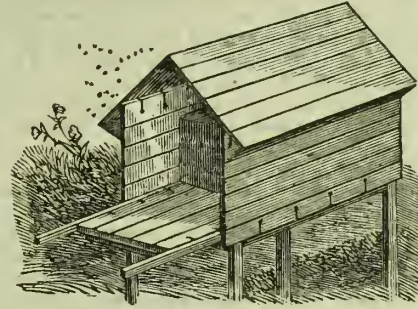
SURPLUS MELONS.—Instead of allowing the surplus melons of the farm to go to waste toward the close of the season, send to the office of the *RURAL PRESS* for Wadsworth's work on Melon Sugar Making. Price, fifty cents in coin, or sixty cents in currency or postage stamps.

OUR PATENT ELASTIC FILE-HOLDERS.—We have sold many of these, and never heard but one verdict concerning them—and that highly in their favor. Price \$1.50 post paid. Will last many years and preserve thousands of papers.

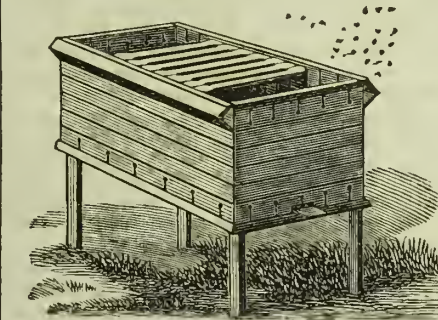
Petersen's Patent Bee Hive.

In the *RURAL* of April 27th we gave a short description of Petersen's patent bee hive, with a cut illustrative of its form as a whole, and being one of the two that we here present; but the other cut which had not then been received from the engraver, gives a clearer illustration of the interior of the hive, the form and arrangement of the frames for the support of honey and breeding comb.

The advantages claimed for this new hive over many of those in common use are the facility it affords of examining at all times the stores of the bees, and the taking away of any surplus, or supplying whatever may be wanting. Also the presence and state of health of the queen bee, in fact of the whole hive. It enables the keeper to interfere in all sorts of emergencies; increasing the number of bees by artificially creating young swarms; and what is of especial importance to the progress of bee science, can be thoroughly examined with reference to the behavior and habits of the different bees, queens, drones and workers, although there is no glass used in its construction.



Persons familiar with the habits of bees know that one of their most necessary and frequent employments is the expulsion of the overheated and foul air from the hive. To do this, the bees station themselves at or near the opening in the hive, turning their heads inward, take hold with their feet and move their wings with such rapidity as to cause a considerable current of air, frequently causing a draft strong enough to be perceptibly felt outside the hive. The improvements in this hive consist in providing it with suitable openings both above and below by means of which the necessary ventilation can be secured and regulated. One hive has a gable roof, and at intervals in the upper edge of the side walls saw cuts or



kerfs are provided which will be sufficiently wide to afford a passage for the air. A strip is secured between the projecting eaves and side of the hive so as to leave a triangular space extending from end to end of the hive, and thus provide a passage for the air. By stopping up the ends of this passage, the ventilation is shut off. Near the bottom of the hive is a false bottom, the side edges of which are also provided with saw cuts or kerfs. At short intervals and in the lower edge of the sides of the hives other kerfs are cut so as to break joints with the first mentioned. The frames are made in the usual manner, except that the upper corners are rounded and project slightly, so that they will fit into a groove in the upper part of the hive and be suspended there, and they can be turned slightly so as to come out easily. There is sufficient space over them to admit the hand so as to remove them when necessary. A flat piece of wood covering two frames is laid over the tops so as to prevent the bees from building above. When these loose pieces are taken out the frames may be removed. There is a door at each end of the hive which may be opened so as to get at the honey from either end. A portion of the hive may be partitioned off when convenient by a piece of board which fits into it. The other hive is similar in construction, the only difference being the flat roof, making it cheaper. Two kinds of hives are made. The better

sort are sold at \$6.00, and the others at \$5.00. The swarm carrier, which is necessary in order to place a swarm into the hives, will cost fifty cents.

This hive has been patented through the *SCIENTIFIC PRESS* Patent Agency by P. O. Petersen who can be addressed care of W. H. Raymond, corner of Twelfth and Clay streets, Oakland, Alameda Co.

State and County Rights for sale by Wiester & Co., 17 New Montgomery street, San Francisco.

Salt as a Fertilizer.

In all countries where salt can be obtained at cheap rates, it can be used profitably on all light lands as a direct and quick fertilizer. It has long been known that certain root crops, and especially the mangel wurzel are very greatly benefitted by using salt as a fertilizer. All the grasses and clovers are increased in quantity and quality; giving to the stalk or haulm more of strength and maturity; and particularly is its effect apparent upon dry land in a dry season; and as this condition of soil and climate pertains to much of California, it is believed that salt will eventually become with us a staple fertilizer.

It is said by Liebig, that its effect upon cereals and particularly wheat and barley, is on accounts of its power to dissolve the silica of the soil, which goes to strengthen the straw, and to the production of a large portion of the heads of wheat exclusive of the grain. It has been found that upon land said to be too rich for wheat, and on which the straw was too weak, and consequently "lodged," the application of salt always remedies the evil.

Salt Increases the Product.

Well conducted experiments prove that the application of 200 pounds of salt, as a top dressing for wheat in early spring, strengthens the straw, without increasing its growth, and adds materially to the weight of the grain per acre, without increasing the quantity by measure.

The same quantity per acre will increase the quantity and quality of grasses upon closely fed pasture grounds, which is probably owing in part to its deliquescent or power of attracting moisture from the atmosphere. The same effect is noticeable where plaster—gypsum—is sown broadcast in spring upon any of the clovers; not only the quality but the quantity is largely increased, whether the land is in reality made more fertile or not.

Lands have been rendered more fertile by simply irrigating with the waters of salt springs in numerous localities, but it is easy to do too much where the supply of salt is abundant and cheap.

Water as a Fertilizer.

A correspondent asks the following question: "Is it ever claimed, that pure spring or river water, is in any respect a fertilizer of lands, beyond the furnishing of a sufficiency of moisture to arid soils, that without it would not be made productive?"

We do not consider the question fairly put, because we know of no pure spring or river water. If ordinary spring or river water is meant, no matter how clear of impurities it may appear to the eye, then we say emphatically, yes! and for the following reasons: We have seen a hillside of an Eastern New York farm, that had for many years produced little more than the common daisy and a small running vine called five-finger, completely renovated and made to produce luxuriant crops of nutritious grasses, by the simple turning on of the water of a large spring brought to the place a third of a mile through a leaden pipe, and the mere harrowing in upon the surface the necessary grass seeds.

This field continued steadily to increase in productiveness for years, in fact till it had attained its apparent maximum of production, without the addition of any manure whatever. We have seen numerous instances of increased and continued productiveness in soils by flooding at intervals with clear river water. Such lands are capable of yielding indefinitely large yields of grass and hay without deterioration, which could not be, but for the fertilizing effect of the waters of irrigation.

The rationale of its operation we conceive to be this—there is hardly a spring of water to be found, however pure it may appear to the eye, that does not contain more or less of the very salts—in solution—that form the constituents of plants, and in the best possible condition

for instant elaboration into the juices of the vegetation acted upon.

The fertilizing effect of the apparently pure waters of rivers is due to the same cause. That all fresh water rivers contain these salts in considerable quantities, though not noticeable without analysis, is proven in the one undeniable fact, that all lakes or bodies of water that receive large fresh water rivers, and have no outlet, are always salt.

Salt alone is a powerful fertilizer when judiciously applied, and this, and the salts of iron—another powerful vegetable stimulant if not a direct manure—are doubtless the two principle mineral fertilizing agents conveyed to the roots of plants by the waters of irrigation.

Soils—Causes of Sterility.

Though California possesses a great variety of soils of unsurpassed fertility, they are not so fertile but they can be speedily exhausted by injudicious cropping. A variety of causes are operating here, tending more speedily than in other countries and climates, to the impoverishment of cultivated lands. One of these is found in the high value attached to crops of grasses and clovers for hay-making, for the supply of the cities and the immense number of working animals in all parts of the State, and among all industries.

This produces a direct drain upon the fertility of the land because no attention is given to a return of fertilizers to make good the loss, as but a small part if any is ever fed out upon the land. Barn-yard manure is here almost unknown, for, as compared with other countries we have no barns or barn-yards.

The Straw is Burned.

Even the straw from our grain fields not actually sold off the farm for hay, is in too many instances a total loss, so far as its value as a manure to the farm is concerned, being consumed in immense piles, and no care taken to return the ashes to the soil from whence it came. This return of only the ashes of the burned straw, may seem but a poor return for the quantity of straw removed.

We have ample demonstration, however, in proof that this is all that is needed. We see the very tops of our hills kept fertile in the highest degree by the annual burning of the grasses and straw of the wild-oat; but as it is labor to return, spread and burn the straw upon the fields from whence taken, it is seldom done and never without danger from the fire.

Plowing in the Straw.

Even now before our lands are worn quite out, we might profit by the experience of the past, or by what we have seen and practiced in the older states, and by a generous return of vegetable growth or its ashes, to the soil, save our lands from that process of deterioration, that has rendered so many districts of older countries almost unfit or unremunerative for cultivation.

It is an axiom with most culturists, that a crop, be it what it may, exhausts the soil of properties peculiar to itself, and that, therefore, an annual recurrence of the same crop on the same field is attended with a corresponding loss of those properties necessary to the fullest development of such crop. If this be true, and the truth of the proposition is difficult of refutation, what more appropriate application for the purposes of manure could or can be made, than the return of the entire haulm or straw, as food for the succeeding crop.

Not Mere Theory.

We are not introducing theory alone, nor is there anything new in our proposition to enrich the soil by the application of vegetable growth, for we have all seen land greatly enriched by the plowing in of both green and dried crops as manure. Everybody has seen or heard of it; it is old as scientific agriculture itself, and is the means by which the worn-out lands of the East are being renovated and brought back to their original productiveness.

But in California the same system will not answer, or as completely as it does in other countries. We have seen straw turned under a five-inch depth of furrow, and two years afterwards, found on examination, entirely unrotted and nearly as bright as when first covered. The reason for this is found in the fact that the winters are so continuously wet and cold, without freezing, however, as to entirely prevent the straw from rotting, whilst the summers are so constantly hot and dry that, then it cannot rot; and the same to a great extent is the case with all "long" or coarse manures.

Thus the burning of the straw upon the land, may be found after all to be the most practicable way of disposing of it, giving preference of course to any plan by which it can be fed to animals and the manure returned to the soil.



"Papa."

What is so sweet as the baby's voice,
"Papa, Papa?"
If of all music I had my choice,
I'd choose the pure, little, ringing voice,
Calling, cooing,
Tenderly wooing,
Papa, Papa?

You wrong it by saying its like a bird,
Papa, papa?
No soaring lark that you ever heard,
Or robin, or thrush, or bob-o-link,
Not even a nightingale, I think,
Has a note so tender, so soft and true,
A voice that so thrills one through and through,
Calling, cooing,
Tenderly wooing,
Papa, papa?

Life has its sorrows, they'er not to be missed,
Losses and pain;
But when baby put up her dear face to be kissed
There's always a balance of joy in the scale
When I hear her sweet voice my heart cannot
fail,
Calling, cooing,
Tenderly wooing,
Papa, papa?

No Interest in their Work.

Light and trifling minds do not succeed
in life, for the reason that they take no in-
terest in their work. What they do is
done mechanically, without thought or
care, so that they "kill" so much time and
get paid for it. If they talk or tattle, it is
about that which has no sense in it, show-
ing clearly smallness of calibre and vacu-
ancy of thought. If girls or young men,
they are or would be constantly on the
"go," and chatter about every little some-
things or absolute nothings.

An hour in such company is enough. If
it be young men of the same class, the
weightiest discussions are on "how to
make the hair grow" on their feminine
faces, or about somebody's fast horse,
fighting dogs, or the late runaway match
of two silly youths. One seldom hears
from them any reference to the real duties
of life, or to the work by which they are
to get a living. If a target company or a
band of street minstrels passes the pre-
mises where they "work," all these "light-
weights" rush to the doors and windows,
leaving their duties, it may be, in confu-
sion. Without exhibiting interest in their
work, without application, without energy
or perseverance, and with no economy as
to the way in which they spend their time,
is it surprising that their "efforts" are not
appreciated by their hard-hearted em-
ployer? These eye-servants, these giddy
human soap-bubbles, are now "fixing
things" for life. They are sowing the
wind, and will reap the whirlwind. Hav-
ing "no interest in their work," they will
come to naught, and perhaps assist in fill-
ing the poor-houses, asylums, hospitals
and prisons.

REMEDY.—"What you find to do, do it
with your might." Be diligent in busi-
ness; do one thing at a time, and finish
what you begin. Let nothing divert your
study of the interests of your employer.
Make his interest your interest; he will, in
time, if not at first, appreciate and reward
your efforts. Be prompt, temperate,
industrious; never "in the drag" always
up to time, or a little ahead. Think more
than you can talk. Read such books as
throw light on your pursuit, that you may
become thoroughly posted on all matters
connected therewith. Attention to these
things will call out your faculties, develop
your mind, and secure to you a good
measure of success in life.—*Jour. of Com-
merce, Indianapolis.*

COLLEGIATE HONORS.—At the opening of
the Cornell University recently two young
ladies, taking advantage of the recent res-
olution of the trustees to admit young
women on the same terms as young men,
presented themselves for examination.
Their names are Miss Emma S. Eastman,
of Worcester, Mass., a former student
of Vassar College, and Miss Sophie B.
Fleming, of Ithaca, New York. It is said
that they passed the examinations in a
manner highly creditable both to them-
selves and to the University. Both of
them entered the Junior class registering
themselves for an elective course which is
nearly identical with the course in letters.

Knocked About in the World.

It is a good thing for a young man to be
"knocked about in the world," though his
soft-hearted parents may not think so. All
youths, or, if not all, certainly nineteen-
twentieths of the sum total, enter life with
a surplussage of self-conceit. If, in meas-
uring themselves with wiser and older men
than they are, they discover that it is un-
warranted, and get rid of it gracefully, of
their own accord, well and good; if not, it
is desirable, for their own sakes, that it be
knocked out of them.

A boy who is sent to a large school soon
finds his level. His will may have been
paramount at home; but school boys are
democratic in their ideas, and, if arrogant,
are sure to be thrashed into a recognition
of the golden rule. The world is a great
public school, and it soon teaches a new
pupil his proper place. If he has the at-
tributes that belong to a leader, he will be
installed in the position of a leader; if not,
whatever his own opinion of his abilities
may be, he will be compelled to fall in
with the rank and file. If not destined to
greatness, the next best thing to which he
can aspire is respectability; but no man
can either be truly great or respectable
who is vain, pompous, and overbearing.

By the time the novice has found his le-
gitimate social position, be the same high
or low the probability is that the disagre-
able traits of his character will be softened
down or worn away. Most likely the pro-
cess of abrasion will be rough, perhaps
very rough; but when it is all over, and he
begins to see himself as others see him,
and not reflected in the mirror of self-con-
ceit, he will be thankful that he has run
the gauntlet, and arrived, though by a
rough road, at self knowledge. Upon the
whole, whatever loving mothers may
think to the contrary, it is a good thing
for youths to be knocked about in the
world—it makes men of them.

About Babies.

Too much caressing, fondling, toying
and handling takes the sprightliness out
of a kitten. Is not the same true of babies?

Do not mothers who tend baby all day,
walking the house, reeking, trotting or
jumping the little precious bundle to quiet
its cries, pursue a wrong course of treat-
ment for the good of the child?

Many a woman thinks it would be hard-
hearted and neglectful to put her baby to
bed, then go out and shut the door and
let it quietly go to sleep as other people
do, instead of rocking, singing, and coo-
ing for an hour or two to induce sleep to
close the little eye-lids, but it makes a bet-
ter natured and healthier child.

"My baby would scream itself to death
if I should do so," says one of the fussy,
soothing-syrup, paragonic, hot drops, and
other dosing kind of mothers. It all de-
pends upon how you begin with your
child. If you wish to be a slave, there is
no surer way than to let a baby go hap-
pily, and get the upper hands in bad
habits.

Human nature from its earliest infancy
is so much the subject of habit, that the
greatest care should be taken to commence
right with the baby.—*Elm Orlov.*

Who are the Young?

The feelings which are conventionally as-
sumed to be the accompaniments of age
are not its especial consequences. We
meet with old men and women who have
not, according to common parlance,
reached their prime. The beauty of youth
has faded in them, or been crushed out of
them. The candle of life though not half
burned down to the socket, seems already
to emit that "smoke where vanishes the
flame." Sometimes suffering, sometimes
sin, and not unfrequently both—the one
the consequence of the other—produce the
ordinary effects of age prematurely; while,
on the other hand, we occasionally meet
with the freshness and elasticity of youth
in people who have long passed the grand
climacteric. But in this "fast" era elderly
youths are more common than youthful
veterans. No man can walk the streets
without admitting that fact. Men who live
rationally, moderately, in accordance
with the true purposes of life, are gener-
ally young in spirits to the last; but the
sordid, the sensual, the unsympathizing,
whose hearts are wholly set upon mate-
rial things, always grow old before their
time, and find, in the end, that the idols
they have worshiped, at the expense of all
that is good and noble in human nature,
can give them neither help nor solace.

MUSIC is an invisible dance as dancing
is a silent music.

A Cheerful Home.

A single bitter word may disquiet an en-
tire family for a whole day. One surly
glance casts a gloom over the household;
while a smile, like a gleam of sunshine,
may light up the darkest and weariest
hours. Like unexpected flowers which
spring up along our path, full of freshness,
fragrance and beauty, so the kind words,
and gentle acts, and sweet dispositions
make glad the home where peace and
blessing dwell. No matter how humble
the abode, if it be thus garnished with
grace, and sweetened with kindness and
smiles, the heart will turn longingly to-
wards it from all the turmoils of the world,
and home, if it be ever so homely, will be
the dearest spot beneath the circle of the
sun.

And the influences of home perpetuate
themselves. The gentle grace of the
mother lives in her daughters long after
her head is pillowed in the dust of death;
and fatherly kindness finds its echo in the
nobility and courtesy of sons who come to
wear his mantle, and to fill his place; while
on the other hand, from all unhappy, mis-
governed homes, go forth persons who
shall make other homes miserable, and
perpetuate the sourness and sadness, the
contentions, and strifes, and railings,
which have made their own early lives so
wretched and distorted.

Toward the cheerful home the children
gather "as clouds, and as doves to their
window;" while from the home which is
the abode of discontent and strife and
trouble, they fly forth as vultures to rend
their prey. The class of men that disturb
and disorder and distress the world are not
those born and nurtured amid the hallowed
influences of Christian homes; but rather
those whose early life has been a scene of
trouble and vexation, who have started
wrong in the pilgrimage, and whose
course is one of disaster to themselves and
of trouble to those around them.

Powder versus Hair-dye.

It is inconsistent for a man to dye his
hair and whiskers and then condemn a
woman for using powder to improve her
complexion. The latter is not as silly a
weakness as the former, for a greasy face
is not desirable, while grey hairs are beau-
tiful. It is not only grey hair that has to
endure the stages of coloring from the nat-
ural shade through bluish, purplish,
Dolly Varden variegations, to the looked-
for brown or black, but red hair, whiskers
or mustache are often in penance and dis-
gust under the barber's dye-brush and fan.

Either powder or hair-dye are to be
avoided, for powder injures the skin, and
if a woman once commences its use, some-
thing makes it hard to discontinue.

That something has often been called,
the clean, cool feeling powder imparts to
the skin, but as cold water answers that
purpose better and is not injurious, ob-
viously there is a hidden reason beyond.

Honesty reveals the secret, which is the
certainty that powder temporarily im-
proves the looks. Every woman will look
pretty if she can, so if the use of powder
becomes a habit, it is as difficult to stop it,
as by moral saulsion to effect a reform in an
old smoker, even if he knows his pipes
and cigars make him as thin as a shad.

However, for consistency's sake, let a
man who uses hair-dye forever hold his
peace about the vanities of women.—*Elm Orlov.*

COUNTRY LIFE PREFERABLE.—Oh, this
constant, never-ceasing whirl in the cur-
rent of city life! Will it always be so!
Will the whirl, and bustle, and confusion
always have such an attraction? As long
as moths flutter around a candle, human
moths will doubtless flutter around the
light that the city extends. And yet how
much sweeter and more attractive life in
the country is! Especially is it to woman.
In the country, whatever her circum-
stances of fortune, woman finds that which
is an imperative want of her nature—a re-
fined home. In the city, if poor, she can-
not escape or shield her children from the
noisy, vulgar life swarming around her;
the tenement lodging or the second-rate
lodging-house only remain to her. But
under a pure sky, in a balmy atmosphere,
the humblest cottage nestling at the foot
of the mountain, one under the shadow of
one of our majestic elms, can be the fitted
home, we will not say of a lady—the word
is associated with vulgar pretensions—but
of gentle-women.

ARGUMENT in company is generally the
worst sort of conversation, and in books
the worst sort of reading.

YOUNG FOLKS' COLUMN.

The Old Grove School House.

BY ALBERT A. WARE—Aged 14 Years.

In a cozy corner, where the two roads met,
Near the old grove woods that sloped to the sun,
There, in the shade did the school house set,
Where my earliest tasks in books began.

My seat looked out on the grove woods' slope,
Where the kingbirds nestled like flocks of gold;
And the breath of the old grove trees awoke
A dream of romance, like tales of old.

The robins sang and I gazed unchecked,
Where they build their nests and rear their young
And at noon, I climbed the boughs bedecked
By the swinging nests which the robins hung.

I'd go to the pond, not far from the door,
Sometimes to swim, fish and sometimes to skate;
The old bell would tinkle, "Recess is o'er,"
And I'd run to school, lest I should be late.

I learned lessons, and conned my tasks,
And dreamed many a day dream serene;
"Where is the old school house now?" some one asks,
I shall never see it again, I ween.

Among our Juvenile Exchanges.

Here is the "Little Corporal," bright as
a new dollar. For all he has traveled all
the way from Chicago, Corporal is all
smiles, and seems to be ready for a good
visit with any young lady or gentleman
not over fourteen years of age. Corporal
is a gentleman, a refined little fellow, with
a heart as big as it can be, and a merry,
pleasant face for all his friends.

Little "Bright Side," traveling compan-
ion of Corporal's, is as attractive as ever—
its happy face and pleasant stories are as
welcome as ever. Corporal and Bright
Side both come from Chicago; they seem
to have had a good time on the overland
route, for they arrived as neat and clean
as if they had left Chicago the same day.

Nursery, from Boston, has come, too,
with all the latest and prettiest pictures
she could find for the month—and she is
ready to show them to all of her little Cal-
ifornia friends, and will also take great de-
light in explaining to them. Nursery has
had a longer journey than Bright Side, but
seems to be as cheerful as any of her com-
panions. "Boys and Girls," and "Child-
ren's Hour," have some of the prettiest
stories to tell you ever heard or read; it
will be a pleasant pastime to meet them,
and hear what delightful things they have
to tell.

Here is the "Schoolmate!" and who does
not welcome so pleasant and beloved a
Schoolmate? Little poems, histories, and
puzzles fill its pages, and we do not be-
lieve there is a school-girl or boy in the
United States who would not welcome the
coming of this pleasant paper.

As we look over this large pile of juvenile
books and papers, we think of the children
living in the Territories, far from cities
and towns, who do not see a child's paper
for months at a time, perhaps not at all;
how eagerly they would read them if they
could only see them. It shows our little
readers how grateful they should be for
the privilege of seeing and reading these
pretty books, while bright-eyed children
far off in Montana, Wyoming, and Utah,
seldom see them, and do not know what
beautiful pictures and stories are prepared
for little readers every week and month.

Age of Animals.

A bear rarely exceeds twenty years; a
dog lives twenty years; a wolf twenty; a
fox sixteen. Lions are long-lived; the
celebrated Pompey lived to the age of
seventy. The average of cats is fifteen; a
squirrel or hare, seven or eight; rabbits
seven; elephants have been known to live
to the age of four hundred years.

When Alexander the Great had conquered
Persia, King of India, he took a large ele-
phant which had fought valiantly for the
king, and naming him Ajax, dedicated him
to the sun, with the inscription: "Alexan-
der, the son of Jupiter, has dedicated Ajax
to the sun." He was found with this in-
scription three hundred and fifty years
afterward. Pigs have been known to live
to the age of thirty years; the rhinoceros
to twenty. A horse has been known to live
to the age of sixty-five, but the average is
twenty-five to thirty. Camels sometimes
live to the age of one hundred. Stags are
long-lived. Sheep seldom exceed the age
of ten, and cows live about fifteen years.

Currier thinks it probable that whales
sometimes live a thousand years. An
eminent naturalist has the skeleton of a
swan that attained the age of two hundred.
Pelicans are long-lived. A tortoise has
been known to live to the great age of one
hundred and seven.

A sour temper bites ugly lines into one's
face like aquafortis.

DOMESTIC ECONOMY.

Whitewashing.

So simple a thing as preparing a wash and putting it on walls and fences may not seem worth notice, yet we all know that the "Women folks" complain about bad work in whitewashing, and "men folks" as a rule, think the matter so simple that they do not care to know whether there is science or "coarse hand" work done to produce a nice job of whitewashing. Now we advise all men who have at any time come across these troubles to cut from this column the following process, and when next they are called upon to attend to any whitewashing, to observe it carefully. They will find a great burthen lifted from their minds from a trifling cause, and in a trifling operation, if they conform to a scientific instead of a blundering method of

Doing Whitewashing.

The best whitewash contains no quicklime at all, but is made of pure whiting, which is a soft kind of chalk, ground very fine, washed so as to separate all the coarse and gritty particles, and formed into lumps in the process of drying. Good whiting, beaten up with water so as to form a milky liquid free from lumps, and mixed with a little good strong size, forms a whitewash that cannot be rubbed off, and will give a very brilliant white surface. This is substantially the material known as Kalsomine, something old but never appreciated until it received a high sounding name. The whiting used to make this whitewash or kalsomine, is sometimes called Spanish white, Paris white, etc., etc. They are all the same thing, and the only point is to select the finest and whitest material offered to you, and take it under any name the vendor chooses to sell it, provided he does not ask too much for it, for it is only whiting after all. Some receipts name Sulphate of Baryta, a beautiful white powder, as the only material for making kalsomine. It answers very well, but is not easily procured, and more than half the time common whiting is sold for it. The size for mixing with the whiting is most easily prepared from glue, and as it is necessary that the whitewash should be permanent and as little liable to decay as possible, we must select a good article of glue. Directions upon this point could not be easily followed by housekeepers; let us therefore advise them to go to a respectable dealer and buy the best. Professional artists in the science of kalsomining, generally use the cheapest, and most recipes direct the use of a cheap article, but it will be found that it is most judicious to use the very best. The better the glue is, the less liable is it to decay in damp weather, and thus create disease. Moreover, when it is good, less of it is required, and the less glue you use, the purer will be the color of your kalsomine. To prepare the glue, soak it in water over night—not any longer, however, or it will begin to decay. It will absorb water and swell up, but will not dissolve. Pour the water off, add a little fresh, and boil until it forms a thin fluid. Beware of burning it, and to avoid this, the glue is best melted in a tin pail, set in an iron pot which contains some water. The whiting having been mixed with boiling water, as previously directed, the melted glue is added, and the whole diluted with hot water until it is of the consistency of ordinary whitewash. A quarter of a pound of good glue to eight pounds of whiting, is a very good proportion. It should be applied while hot, with a common whitewash brush. Owing to the fact that in damp places glue easily decays and produces poisonous vapors, kalsomine should not be used in damp basements or cellars. Any color may be given to this material, and in Europe many houses have the walls finished with light shades of pink, blue, green, etc., instead of paper, and the effect is very pleasing.

When walls have been previously covered with successive coats of common whitewash it will be necessary either to remove this or "kill" the lime. After taking off all that will come away by scraping and washing, the wall should be washed with a solution of vitrol—two ounces dissolved in a pail of water. This will "kill" the lime; in other words the white vitrol will be decomposed, and the wall be coated with plaster of Paris and white zinc, to which the kalsomine will adhere very readily. If these precautions be not taken, the kalsomine will very probably peel off.—*Manufacturer.*

TOMATO SAUCE.—The Melbourne Leader gives the following recipe:

Take forty pounds of tomatoes, wipe clean, and boil or bake till soft; then squeeze through a sieve that will retain the seeds and skins. Boil for an hour in order to get rid of some of the watery portion, and then add half a gallon of best brown vinegar, 1½ lbs. salt, 2 oz. cloves, 3 oz. allspice, 2 oz. cayenne pepper, 3 lb. white sugar, 4 oz. garlic and 2 oz. black pepper. Boil a sufficient time; two hours will usually suffice, but the sauce will not be boiled enough until it has become tolerably thick, and all the watery appearance has gone. Bottle without straining into perfectly dry bottles, and cork them securely when cold. The garlic must be peeled, bruised and tied up in a bag; all the spice must be ground; the quantities may be increased or diminished according to taste. We have kept sauce made from this receipt three years.

Dried Figs as Food.

Chemists who have given the matter consideration are agreed as to the high nutritious quality of figs.

The richness of the fruit in saccharine matter offers a material equal to the starch of wheaten bread in a directly soluble form, which is more congenial to the human system. On the other hand, the oily and nitrogenous compound in the dry fig do not rank nearly so high as in wheaten bread. But these deficiencies of gluten (and oil), so essential agents to nutrition may be easily made up by meat; and by calling on the animal kingdom for more fat and nitrogenous food may get the greatest benefits from the fig family.

The great facility which the climate of California affords for raising this nutritious fruit should encourage its more general use here. The people of every climate should accustom themselves to the more general use of such fruits as are suited best to such climates. The testimony of science, and the history and customs of many nations, both ancient and modern, teach us the economic and health giving nature of the fig as food.

In the Bible, figs are mentioned as amongst the food of man, and the tree, by its abundant yield of fruit and its protecting shade, whilst giving place to many a beautiful simile, is also made the emblem of domestic felicity. In one passage we have figs mentioned as provision in war, and a famishing Egyptian in the routed Edomite camp was nourished and invigorated by the fig-cake and raisins given him by the Israelites. As there can be no doubt of the Israelites having an eye to the portability, as well as the nutritiousness of the life-sustaining provisions they carried with them in the war, the fact of dry figs and raisins having been amongst their most valued supplies would proclaim such fruits well worthy of our serious attention.

Nor have we many difficulties in the way. Nature has highly developed the fig tree in California, and thus gives us a broad hint of what we might do by way of more thoroughly economizing its product; the fig is already grown extensively, but not as it deserves to be.

The fig-tree with us requires but little culture, and an acre or so devoted to it on any farm would certainly prove a great acquisition of comfort, and a saving of money.

The fig-tree is long-lived, specimens some hundreds of years of age being known even in Britain. It claims naturally drained land, hill sides, or artificial drainage as a leading feature of its successful establishment. For home consumption the fruit may be sun or stove dried, and when dry may be packed and pressed away in boxes or barrels.

Summer Drinks.

Ice water should be drank but sparingly. A most excellent substitute for it is pounded ice taken in small lumps into the mouth and allowed to dissolve upon the tongue. This will prove very refreshing and much more enduring in its effects.

Lemonade is a simple and grateful beverage. To make it: Roll the lemons on something hard until they become soft; grate off the rinds, cut the lemons into slices and squeeze them in a pitcher (a new clothes-pin will answer for a squeezer in lieu of something better;) pour on the required quantity of water, and sweeten according to taste. The grated rinds, for the sake of the aroma, should be added too. After mixing thoroughly, set the pitcher aside for half an hour; then strain the liquor through a jelly strainer, and put in the ice.

Travelers who find it inconvenient to use lemons can carry a box of lemon sugar prepared from citric acid and sugar, a little of which in a glass of ice-water will furnish quite a refreshing drink, and one that will help oftentimes to avert sick-headache and biliousness. Citric acid is obtained from the juice of lemons and limes.

Perry is a delicious beverage made from cherries, and will keep a year or more. Take six pounds of cherries and bruise them; pour on a pint and a half of hot water, and boil for fifteen minutes; strain through a flannel bag, and add three pounds of sugar. Boil for half an hour more, or until the liquid will sink to the bottom of a cup of water (try it with a teaspoonful of the liquid); then turn it into jelly cups and cover with paper dipped in the white of an egg.

To prepare the drink: Put a spoonful of the jelly into a goblet of water, and let it stand about ten minutes; then stir it up and fill with pounded ice. Currants and raspberries made into "shrub" furnish a pleasant and cooling drink when mixed with ice-water. Pounded ice is also an agreeable addition to a saucer of strawberries, raspberries or currants. Pound it until it is almost as fine as snow, and spread it over the berries. With fruit it is also an excellent substitute for cream.

Water ices are always acceptable. Those made of lemon, orange, currants, strawberries, and pineapple, are much improved by adding the stiff beaten whites of four eggs to every two quarts of the liquid. Put it in just as it is turned into the freezer, and it will freeze in a foam.—*Scribners' for July.*

SILVER POLISH.—Very many, indeed most of the compounds sold by itinerant vendors for silver polish, are not only worthless for silvering purposes, but positively injurious, from the fact that they contain mercury. The following receipt will enable any person to give to a piece of brass or copper a thin coating of silver, and this without the aid of heat. Take of nitrate of silver, 30 grains; common salt, 30 grains; cream of tartar, 3½ drms. Grind together thoroughly, and when you wish to apply it, moisten it with a little water, and rub on the article with a piece of buckskin or other soft leather. Remember, however, that the coating thus imparted is very thin, and will not bear much wear or hard usage. It is valuable for coating the scales of instruments like thermometers, as it gives a dead-white silver surface that shows the figures plainly, and when varnished with some colorless varnish it lasts a long time.

GREEN POTATOES.—The Food Journal gives its opinion on the use of green and air-exposed potatoes after the following style: "Even a short exposure to air and light spoils potatoes for food. The use of potatoes is a preventive against scurvy, if not an actual cure for it. Potatoes that have been exposed to the air, and have become green are unwholesome; and new potatoes—unripe ones—have much to do with the prevalence of cholera and such like diseases during the summer months."

Practical Receipts.

CREAM PIE.—1 pint milk, 1 cup sugar, 2 eggs, ½ cup flour. Flavor to taste. Equal to custard.

KEEP sweet oil in a cool place if you wish to retain its sweetness for any length of time in warm weather. The oil should be supplied to the castor daily, and all returned to the bottle that is not used.

TOMATO CUSTARD.—This is said to be a beneficial diet for consumptives. It is made by straining finely stewed tomatoes through a course sieve, and adding two pints of milk and one pint of tomatoes, four eggs, one teaspoonful of sugar. Bake in small cups quickly.

FROSTING FOR CAKE.—Beat the white of an egg until you can turn the plate over without the egg running off, then add five heaping tablespoonfuls of pulverized sugar, and one of starch. This quantity will frost one small cake. Flavor to taste.

WAY TO COOK CHEESE.—Cut a quarter of a pound of cheese into small slices, and boil a minute in a teaspoonful of water; beat one egg and tablespoonful of flour together, adding gradually one pint of milk, pour into the boiling cheese and stir, which after a minute's cooking is fit to serve for a supper relish.

BLACK CURRANT JELLY.—To each pound of pickled fruit, allow one gill of water; set them on the fire in the preserving pan to scald, but do not let them boil; bruise them well with a silver fork or wooden spoon—take them off and squeeze them through a hair sieve; and to every pint of juice allow a pound of loaf or raw sugar; boil it ten minutes.

HAM TOAST.—Chop some ham (which has been previously dressed) very small, and to a large teaspoonful of it add an egg well beaten up, a small bit of butter, and a little cream. Have ready some neatly cut pieces of bread, about the size of a silver dollar, but a little thicker, fried in good butter; spread the mixture on these, and serve them on a napkin.

TO MAKE THE MOCK CREAM.—Put one pint of milk over the fire, wet a tablespoonful of corn starch or maizena in a very little cold milk, add one egg, one large tablespoonful of white sugar, one-fourth teaspoonful of salt, and a little lemon, rose water or nutmeg. When the milk is ready to boil, stir in the mixture and let it boil about two minutes, taking care that it does not burn on. Let it get cold before filling the tarts. Corn starch is so largely adulterated now that sometimes a tablespoonful may not be quite enough, but one trial will determine it.

LOBSTER AND FISH SALADS.—A very nice and elegant dish may be made with all kinds of cold fish, and some kinds of shell-fish. The following way of dressing is for a small lobster-salad, and will do for all fish salads: Have the bowl half filled with any kind of salad-herb you like. Then break a lobster in two, open the tail, extract the meat in one piece, break the claws, cut the meat of both in small slices, about a quarter of an inch thick; arrange these tastefully on the salad; take out all the soft part of the belly, mix it in a basin with a teaspoonful of salt, half a one of pepper, four of vinegar, four of oil; stir it well together, and pour on the salad; then cover it with two hard eggs, cut in slices, a few slices of cucumber, and, to vary, a few capers and some fillets of anchovy.

MUTTON SOUP.—Cut a neck of mutton into four pieces, put it aside, take a slice of the gammon of bacon, and put it in a saucepan with a quart of peas, with enough of water to boil them; let the peas boil to a pulp, and strain them through a cloth; put them aside, add enough water to that in which the bacon is to boil the mutton; slice three turnips, as many carrots, and boil for an hour slowly; add sweet herbs, onions, cabbage and lettuce, chopped small; stew a quarter of an hour longer, sufficient to cook the mutton, then take it out, take some fresh green peas, add them, with some chopped parsley, and the peas first boiled to the soup; put in a lump of butter rolled in flour, and stew till the green peas are done.

MISCELLANEOUS.

The Bidwell Farm.

The Northern Enterprise furnishes the following facts concerning the crops, etc., of this celebrated farm: The present crop covers an area of 2,800 acres 2,000 of which is sown in wheat and the residue in barley, oats and alfalfa. The kinds of wheat sown are the white bearded Chile, towzel, native of north France, patent-office, club and Sonora. Everything is looking in splendid order, whole fields of grain present a perfect uniformity in height, not a weed or mixture of any kind to be seen. The average yield will at least be 30 bushels to the acre, while some of the best of it will reach 50 bushels to the acre. Seven hundred tons of hay have been harvested and housed this season. Sixty acres of alfalfa were sown last year, from 12 acres of which on the 12th day of April 42 tons of hay were cut, and from the same piece of ground on the 10th day of June, 50 tons were taken off. There are 25 acres of most luxurious growth of timothy. The barley fields look very promising and will yield an average of 50 bushels. There are two vineyards upon the farm, the old and new. The old covers about 26 acres, is the growth of years, and bears fruit of the first order. The new covers an area of 150 acres but lately planted, containing not less than seventy-five thousand vines, all looking thrifty, and a majority of which will bear fruit next year. They embrace almost every variety of foreign grape. The farm orchard embraces one hundred acres, and contains every variety of fruit. There are growing upon the ranch 30 acres of beans, the field so clean and nice that not a weed can be seen thro' its length and breadth. There are one thousand paper shell almond trees, and an intention to plant one thousand more next season. There are about eight acres of a nursery under charge of Mr. Carmichel, one of the most experienced orchardists of the State. The stock consists of one thousand head of cattle, among which are found one hundred and fifty head of choice two-year old heifers, two hundred head of horses, the best of the country. Twelve hundred head of hogs and thirty-five hundred head of sheep. There is a dairy where ninety cows are milked, with the milk and butter from which the town is supplied. The machinery in use for purposes of cultivation, cost over five thousand dollars.

DREARY HOMES.—Of all the dreary places, deliver us from the dreary farm houses which so many people call "home." Bars for a front gate; chickens wallowing before the door; pig pens elbowing the house in the rear; scraggy trees never cared for, or no trees at all; no flowering shrubs, no neatness, no trimness. And yet a lawn and trees, and a neat walk, and a pleasant porch, and a plain fence around, all do not cost a great deal. They can be secured little by little, at odd times and the expense hardly be felt. And if ever the time comes when it is best to sell the farm, fifty dollars so invested will often bring back five hundred. For a man is a brute who will not insensibly yield to a higher price for such a farm when he thinks of the pleasant surroundings it offers his wife and children.—*Ex.*

NEW FERTILIZER.—We were shown yesterday by a gentleman in the suburbs some extraordinary small fruits which he had caused to attain a monstrous size by the use of a new fertilizer. He had a choice variety of strawberry plants, and by sprinkling a solution of the sulphate of iron over them, the berries grew to be nearly as large as peaches. His raspberries, many of which would make a bushel, and a dozen of which he brought for our inspection, were simply wonderful in their proportions. The gentleman informed us that the discovery of this new developer was accidental, and that beans sprinkled with it gain 60 per cent. in size and quality, and pear trees are immensely benefitted.—*Oregonian.*

HOME ATTRACTIONS.—The best investment that a farmer can make for his children is that which surrounds their youth with the rational delight of a beautiful, attractive home. The dwelling may be small and rude, yet a few flowers will embellish, as choice fruit trees will enrich and gladden it; while grass and shade are within reach of the humblest. Hardly any labor done on the farm is so profitable as that which makes the wife and the children proud of their home.

PATENTS & INVENTIONS.

Fall List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING JUNE 25TH.
MACHINE FOR SAWING STAVES.—Otto Osten, Tahoe City, Cal.

COVER FOR PEPPER-BOXES.—Henry E. Thomas, San Francisco, Cal.

CARBURETER.—Augustus F. H. Braun, S. F. MONEY-DRAWER.—Henry Unna, San Francisco.

ICE-MACHINE.—David Boyle, San Francisco, Cal., assignor to himself and JOHN W. PEARSON, same place.

TRADE-MARK.
BEVERAGE.—Asher S. Taylor, San Francisco.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

IMPROVED WATER LIFTER.—Mr. Jno. A. Ball, of Grass Valley, Cal., the inventor of the Improved Water Lifter, recently illustrated in the PRESS, writes us from Sycamore, Ill., where he is at present visiting, requesting us to state that the contracts which he made before leaving this State to furnish his patent water lifters cannot possibly be filled by the time called for by the contract. He adds: "The machines are being made at St. Louis and will be shipped as soon as possible. The facilities for manufacturing here are such that I will be able to furnish the water lifters at a reduced price. The work is substantially done and with a fine finish."

THOMAS BUTTERFIELD & SON, importers and breeders of the Cashmere goat, and the Cotswold, Lincoln, Leicester, Texel and Southdown sheep, Hollister, Monterey Co., California, are going to take 1,500 grade Cashmere goats to Oregon by rail and overland, from where they have orders for part of them already. They advertise in another column.

MORE FISHERIES.—Several parties are now examining points along the Truckee and around Lake Tahoe with the view of establishing artificial fish ponds, and raising fish for market on a large scale.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., July 18.
FLOUR—The interior and local demand is reported good, with a fair inquiry for export. Sales embrace, 5,000 lbs. Cal. extra, 2,000 Oregon extra, and 3,000 Cal. superfine, principally for export. We quote prices as follows: Superfine, \$4.25@4.50; extra, in sacks, of 196 lbs. \$6.00@6.12½; Oregon brands, \$5.25@6.00 in sacks of 196 lbs.

WHEAT—The market has been steady at unchanged rates since our last review. Sales aggregate 25,000 sacks ordinary to choice, at \$1.50@1.75. The range for new is \$1.50@1.55, and old, \$1.65@1.70 per 100 lbs.

The latest Liverpool market quotations come through at 12s. 4d. per cental.
BARLEY—Market firm. Sales embrace 10,000 sacks, at \$1.05@1.10 for new, and \$1.50@1.60 for old. The range at close is, new feed \$1.05@1.15; old feed \$1.50@1.65; old brewing \$1.50@1.60.

OATS—Market is steady. Sales ordinary coast to choice bay, at \$1.75@1.83 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.75@1.80 per 100 lbs. CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs. RYE—Is quiet at \$1.75@1.80 per 100 lbs. STRAW—Quotable at 55¢@60¢ per bale.

BRAN—Is selling at \$20 per ton from the mill.

MIDDINGS—For feed, are now \$30.00 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been pretty free during the week. Quotable at close at \$8@16 per ton.

HONEY—In the comb is selling at 12½¢@25¢; do. strained, 12¢@16¢ per lb.

POTATOES—There has been a pretty fair demand this week, but prices show a further decline. Sales of Red at \$1.25@1.50 per 100 lbs.; Peach Blow \$1.62; Carolina, \$3 per 100 lbs.

WOOL—Is still very quiet and prices are nominal. Sales for the week were about 100,000 lbs., including 10,000 lbs. choice at 35¢. The range of prices is nominally 20¢@35¢ for all grades.

TALLOW—Good quality of Cal. 8c. SEEDS—Flax 3c.; Canary, 5¢@6c. Alfalfa, 16¢@20.

PROVISIONS—California Bacon 12½¢@14¢ per lb.; Oregon, 13½¢@14¢. Eastern do. 10¢@12¢ for clear and 14¢@15 for sugar-cured Breakfast; Cal. Hams 13¢@14; Eastern do. 15¢@16¢; California Smoked Beef, 13½¢@14¢ per lb.

BEANS—The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25; large \$3.75; Bayo, 5.25@5.50; Pink and Red, \$5.25@5.50.

NUTS—California Almonds, 8¢@10¢. for hard and 18¢@25 for soft shell; Peanuts, 6¢. Pecan, 25¢ per lb.; Hickory, 12¢; Brazil, 15¢; Chili Walnuts, 15¢; French Almonds, 25¢ @30¢; Princess Almonds, 35¢@40¢; Los Angeles Walnuts, 18¢; Cocoa-nuts, \$7.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 8¢@9¢ per lb. do. 2d quality 6¢@7¢ per lb.; do. 3d do. 3¢@5¢.

VEAL—Quotable at 7¢@10¢.

MUTTON—6¢@6½¢ per lb.

LAMB—Steady at 8¢@9¢.

PORK—Undressed grain-fed is quotable at 5½¢@6½¢. dressed, grain-fed, 8½¢@9½¢ per lb.

POULTRY—Live Turkeys, 25¢ per lb.; dressed, 27¢ per lb.; Hens \$9.00@9.50; Roosters, \$6.00@7.50 per dozen; Spring Chickens, \$4.00@4.50; Ducks, tame, \$7.00@8.00 per doz.; Geese, \$12@15 per dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 25¢@30¢, with a few choice lots at 32½¢; New firkin is quotable at 25¢@27½¢.

CHEESE—New California, 10¢@14¢; Eastern is jobbing at 13¢@14¢ per lb.

Eggs—California fresh, are 42½¢@45¢ per doz.

LARD—California 12½¢@14¢; Oregon, none in market. Eastern in cases 14¢@14½¢; do in tes. 11½¢@12¢ per lb.

FRUIT.
Tah. Oranges, M. 35¢@40¢ Strawberries, chst 2 50@4.00
California do. 12½¢@15¢ Raspberries, 10¢@12¢
Limes, M. 12½¢@15¢ Raspberries, 10¢@12¢
Austin Lemons, M. 12½¢@15¢ Raspberries, 10¢@12¢
Cal. do 12½¢@15¢ Raspberries, 10¢@12¢
Sicily, do 14¢@16¢ Raspberries, 10¢@12¢
Bananas, bunch 2 00@2 50 Apples, 5¢@8¢
Currants, 5¢@8¢ Apples, 5¢@8¢
Apples, eating, 10¢@15¢ Apples, 5¢@8¢
Apples, cooking, 5¢@8¢ Apples, 5¢@8¢
Pineapples, doz. 5 00@6 00 Apples, 5¢@8¢
Nectarines, doz. 5 00@6 00 Apples, 5¢@8¢
Grapes, doz. 5 00@6 00 Apples, 5¢@8¢

DRY FRUIT.
Apples, 5¢@8¢ Pitted, doz. 22¢@25¢
Pears, 5¢@8¢ Raisins, doz. 15¢@18¢
Peaches, 5¢@8¢ Apricots, doz. 10¢@12¢
Apricots, 5¢@8¢ White, doz. 15¢@18¢
Plums, 5¢@8¢

VEGETABLES.
Cabbage, doz. 1 00@1 50 Cucumbers, doz. 75¢@1.00
Carrots, doz. 1 00@1 50 Summer Squash, doz. 75¢@1.00
Rhubarb, doz. 1 00@1 50 Asparagus, doz. 75¢@1.00
Green Peas, doz. 2 00@2 50 Tomatoes, doz. 62½¢@1.50
Sweet Peas, doz. 2 00@2 50 String Beans, doz. 3 00@4 00
Green Corn, doz. 10¢@12¢ Egg Plant, doz. 4 00@5 00
Marrowfat Squash, doz. 10¢@12¢ Peppers, doz. 2 00@3 00
Per ton, \$10@15

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—Prices are as follows: Burlap sacks 17½¢@17½¢ for jobbing lots; Flour sacks 9¢@10¢. for qrs. and 14½¢@15½¢. for hls. Standard Gunnies are jobbing at 20¢@21¢; Wool 75¢@80¢; Hessians 40¢ each goods 14¢ per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The demand for lumber in the interior is light, and the city trade is light also. The Cal. says that an advance in cargo rates for Redwood has been in contemplation for some time past, and at the last meeting of the Redwood Lumber Association, it was decided that the new prices should go into operation on the 1st of September. At that time all members of the Association will be required to advance rough cargoes \$4, and dressed do. \$2.50. The rates will then be, \$35 for Rustic, \$32.50 for Surfaced, \$32.50 for Rough Clear, \$20 for Rough Merchantable, and other descriptions in proportion. Dealers say this action is prompted by the advance in wages, price of logs and increase in freights from the mill ports. Trade at the present time is dull, in fact, June, July and August are always the dull months of the year. Receipts continue heavy, and a stock is being accumulated for the anticipated active fall trade. During the month of June the receipts of Redwood were unusually heavy, aggregating 13,655,393 feet. Puget Sound Lumber is firm, though the continued scarcity of tonnage and high rates of freight greatly curtails the export trade. Ship owners now demand \$20 from this port to South America, and \$30 from the Sound, which is more than three times the rates paid a year ago. Dealers pay for cargoes of Oregon as follows: Rough \$16@17; do. surfaced at \$23; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½¢; refuse do. \$21½¢. Wholesale rates for various descriptions are as follows: Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine \$35¢@45¢; Cedar \$27½¢@37¢. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices is continued by the Lumber Dealers' Exchange.

Puget Sound Pine—

Rough, 1st M. \$22 50
Fencing and Stopping, 1st M. 35 00
Fencing, second quality, 1st M. 25 00
Laths, 1st M. 3 00
Fencing, 1st lineal foot. 3 4c
Redwood—

Rough, 1st M. 22 50
Rough refuse, 1st M. 17 00
Rough Pickets, 1st M. 18 00
Fancy Pickets, pointed, 1st M. 20 00
Fencing, 1st M. 30 00
Siding, 1st M. 25 00
Tongued and Grooved, 1st M. 37 50
Do. do. 25 00
Half-inch surfaced, 1st M. 35 00
Rustic 1st M. 40 00
Batten 1st lineal foot. 3 4c
Shingles 1st M. 3 00
Sugar Pine is jobbing at \$55 for clear and \$45 for second quality.

COFFEE—Costa Rica 20½¢; Guatemala 18c. Java 26c; Manila, 19½¢; Rio 19½¢@20¢; Ground Coffee in cases 30¢; Chicory, 12½¢.

SPICES—Allspice 14¢@15c. Cloves 16¢@17c. Cassia 35¢@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½¢@5½¢, Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2.50 for 2½-lb. cans, \$2.25 for 2-lb. cans, and \$1.75 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85¢ per box; Mackerel, No. 1 hf bbls, \$8.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.15; do No. 2, \$1.50@1.62½. Smoked Salmon, 7¢@7½¢ per lb.

NAILES—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 per ream.

PAINTS—White Lead 10¢@12½¢; Whitening, 2c.; Chalk 2½¢; Paris White 3c.; Ochre and Venetian Red each 3¢; Red lead and Litharge each 10¢@11c. per lb.

RICE—Sales of China No. 1 at 7¢@7½¢, and No. 2 at 6½¢@7¢ per lb.; Siam, quotable at 5½¢@6½¢ in mats; Carolina Table, 10¢@11¢; Hawaiian, 9¢@10¢ per lb.

SUGAR—We quote Cal. Cube at 13½¢; Circle A Crushed, 13c, and Granulated 12½¢; Golden C. 11½¢; Hawaiian 8¢@11c. as extremes per lb.

SYRUP—Prices may be given as follows: 57½¢ in bbls, 60 in hf bbls, and 65¢ in kegs.

SALT—California Bay sells at \$6@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5¢@10c, and Castile, 13¢@13½¢ per lb.

TEA—We quote as follows for bulk descriptions: Gunpowder and Imperial—Canton made nominal; common to fair, 40¢@60¢; superior to fine, 70¢@80¢; extra fine to finest, 90¢@1.25.

Young Hyson—Canton made, nominal; common to fair, 40¢@50¢; superior to fine, 60¢@70¢; extra fine to finest, 77½¢@87½¢. Oolong—Canton made, 20¢@25c. Amors—Common to fair, 30¢@45¢; superior to fine, 55¢@65¢; extra fine, 75¢@85c. Foochow—Common to fair, 25¢@45c.; superior to fine, 50¢@60c.; extra fine, 75c. Souchong and Congou—Common to fair, 35¢@45c.; superior to fine, 50¢@60c.; extra fine, 75c. Japans—Common to fair, 30¢@35c.; superior to fine, 40¢@45c.; extra fine to finest, 55¢@75c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, July 18, 1872.

MISCELLANEOUS.
Butter, Cal. fr. do. 25¢@35¢ Flour, 10½¢@11¢
do Oregon, do. 25¢@35¢ do. 16¢@18¢
Honey, 25¢@30¢ Potato 6¢@8¢
Cheese, 20¢@25¢ Second-hand do. 12¢@16¢
Eggs, 45¢@60¢ Deer Skins, 15¢@22¢
Lard, 18¢@20¢ Sheep skins, 50¢@75¢
Sugar, cr., 7¢@10¢ Sheep skins, plain, 12¢@25¢
Brown, do. 9¢@13¢ Goat skins, each, 25¢@50¢
Beet, do. 12¢@15¢ Dry Cal. Hides, 18¢@19¢
Sardines, 25¢@30¢ Green Corn, doz. 15¢@20¢
Plums, dried, 15¢@30¢ Dry Mex. Hides, 17¢@19¢
Peaches, dried, 20¢@30¢ Salted do. 9¢@12¢
Wool Sacks, new 82½¢@85¢ Goddard, dry, 10¢@12¢
Second-hand do. 82½¢@85¢ Live Oak Wood, 10¢@12¢
Wheat-sks, 22½¢@15¢ Tallow, 8½¢@10¢

PRODUCE, ETC.

Flour, ex. do. 60¢@65¢ Barley, cwt. 1 50@1 65
Superfine, do. 60¢@65¢ Beans, cwt. 4 00@5 00
Corn Meal, 100 lb. 3 00@3 50 Dry Lima Beans 8¢@10¢
Wheat, 100 lb. 2 40@2 60 Hays, 100 lb. 17¢@25¢
Oats, 100 lb. 1 60@1 75 Potatoes, 100 lb. 75¢@1 00

FRUITS, VEGETABLES, ETC.

Apples, 16¢@18¢ Celery, per doz. 75¢@1 00
Pine Apples, 15¢@18¢ Cucumbers, 10¢@15¢
Espanas, 10¢@15¢ Tomatoes, 10¢@15¢
Gartelers, 25¢@50¢ Cress, per doz. 20¢@25¢
Watermelons, 25¢@50¢ Dried Herbs, 15¢@25¢
Cal. Walnuts, 20¢@25¢ Garlics, 5¢@10¢
Cranberries, 10¢@15¢ Green Peas, 10¢@15¢
Raspberries, 15¢@20¢ Lettuce, per doz. 12¢@25¢
Cranberries, O. 10¢@15¢ Mushrooms, 10¢@15¢
Gooseberries, 8¢@15¢ Okra, dried, 10¢@15¢
Cherries, 15¢@20¢ Pumpkins, 10¢@15¢
Oranges, 10¢@15¢ Parsnips, 10¢@15¢
Lemons, 10¢@15¢ Parsnips, 10¢@15¢
Limes, per 100, 2 00@2 50 Parsley, 10¢@15¢
Figs, fresh, 12¢@15¢ Pickles, 10¢@15¢
Asparagus, wh. 10¢@15¢ Rhubarb, 5¢@10¢
Artichokes, doz. 10¢@15¢ Radishes, 10¢@15¢
Quails, per doz. 10¢@15¢ Summer Squash, 3¢@5¢
Beets, per doz. 10¢@15¢ Marrowfat, 10¢@15¢
Potatoes, New 14¢@20¢ Hubbard, 10¢@15¢
Broccoli, per doz. 10¢@15¢ Dry Lima, 10¢@15¢
Cauliflower, 10¢@15¢ Spinage, 10¢@15¢
Cabbage, per doz. 10¢@15¢ Salsify, 10¢@15¢
Carrots, per doz. 10¢@15¢ Turnips, 10¢@15¢

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, 50¢@60¢ Choice D. Field 25¢@30¢
Turkeys, 1 00@1 50 Whittaker's 25¢@30¢
Ducks, wild, 1 50@2 50 Johnson's Or. 15¢@18¢
Tame, do. 1 50@2 50 Flounder, 15¢@18¢
Teal, do. 1 50@2 50 Smoked, new, 12¢@15¢
Grouse, wild, pair 2 50@3 00 Pickled, 12¢@15¢
Tame, pair, 2 50@3 00 Rock Cod, 10¢@12¢
Hens, each, 75¢@1 00 Perch, 10¢@12¢
Snipe, per doz. 10¢@12¢ Fresh water, 10¢@12¢
English, do. 10¢@12¢ Lake Big Trout, 10¢@12¢
Quails, per doz. 10¢@12¢ Smelts, large, 8¢@10¢
Pigeons, dom. doz. 3 00@3 50 Small do. 15¢@20¢
Wild, do. 2 00@2 50 Silver Smelts, 15¢@20¢
Hares, each 40¢@50¢ Rabbits, 15¢@20¢
Rabbits, tame, 15¢@20¢ Herring, fresh, 30¢@40¢
Beef, tend, 18¢@22¢ Sm'kd, per 100 1 00@1 25
Corned, 10¢@12¢ Tomcod, 10¢@12¢
Smoked, 10¢@12¢ Terrapin, 10¢@12¢
Pork, rib, etc. 10¢@12¢ Fresh, 10¢@12¢
Lamb, 10¢@12¢ Sea Bass, 10¢@12¢
Veal, 10¢@12¢ Halibut, 10¢@12¢
Outlet, do. 10¢@12¢ Sturgeon, 10¢@12¢
Mutton chops, 12¢@15¢ Soft Shell, 10¢@12¢
Leg, 10¢@12¢ Crabs, 10¢@12¢
Lamb, 10¢@12¢ Prawns, 10¢@12¢
Tongues, beef, 10¢@12¢ Sardines, 10¢@12¢
Tongues, pig, 10¢@12¢
Bacon, Cal. 18¢@20¢
Oregon, do. 16¢@18¢
Hams, Cal. 16¢@18¢
Hams, Cross s. 10¢@12¢

Per lb. Per dozen. Per gallon.

State University.—The next term of the Preparatory Department will begin April 20th, 1872.

The course of study embraces the Ancient and the Modern Languages and the higher Mathematics, and is specially adapted to the University curriculum.

Terms, \$12 a term. GEORGE TAIT, Oakland.

1373bp-1f

Wool Prices in New York.

BROWN'S CIRCULAR, July, 1872.

DOMESTIC FLEECES.

NEW YORK, MICHIGAN, INDIANA AND WISCONSIN.

Choice Set'd Saxony Fl. Quarter-bld Fleece... 65¢@68¢
Saxony Fleece... 65¢@68¢ Common Fleece... 62¢@65¢
Saxony Fleece... 65¢@68¢ Combining Fleece... 70¢@75¢
Half-bld Fleece... 65¢@68¢

OHIO, PENNSYLVANIA AND VIRGINIA.

Choice Set'd Saxony Fl. Quarter-bld Fleece... 65¢@68¢
Saxony Fleece... 65¢@68¢ Common Fleece... 62¢@65¢
Saxony Fleece... 65¢@68¢ Combining Fleece... 70¢@75¢
Half-bld Fleece... 65¢@68¢

IOWA, VERMONT AND ILLINOIS.

Choice Set'd Saxony Fl. Quarter-bld Fleece... 65¢@68¢
Saxony Fleece... 65¢@68¢ Common Fleece... 62¢@65¢
Saxony Fleece... 65¢@68¢ Combining Fleece... 70¢@75¢
Half-bld Fleece... 65¢@68¢

MISSOURI, KENTUCKY AND TENNESSEE.

Washed Fleece... 65¢@68¢ Unwashed Comb... 60¢@65¢
Unwashed Fleece... 55¢@57¢ Canada Fleece... 78¢@80¢

TUB-WASHED WOOL.

Choice... 80¢@85¢ Inferior and Burry... 55¢@65¢
Fair... 75¢@80¢

PULLED WOOL.

N. Y. City extra Pulled... 42¢@45¢ Country extra Pulled... 75¢@80¢
N. Y. City super Pulled... 57¢@62¢ Country super Pulled... 75¢@80¢
N. Y. City No. 1 Pulled... 62¢@67¢ Country No. 1 Pulled... 75¢@80¢
Western super and ext 62¢@67¢ Canada Pulled... 75¢@80¢

CALIFORNIA.

Spring Clip, fine... 44¢@48¢ Fall Clip, 1w gds & 1ry 23¢@25¢
Spring Clip, medium... 45¢@48¢ Extra Pulled... 65¢
Spring Clip, 1w gds & 1ry 23¢@25¢ Extra Pulled... 65¢
Fall Clip, A. 1... 27¢@33¢ Low Pulled... 65¢

TEXAS.

Fine... 45¢@55¢ Inferior... 35¢@40¢
Medium... 45¢@55¢ Very Burry... 30¢@35¢
Low... 37¢@40¢

FOREIGN WOOLS.

Cape of Good Hope... 42¢@45¢ Australian Clothing... 55¢@65¢
Buenos Ayres Mer. & Mos... 35¢@42¢ Australian Comb... 65¢@70¢
Montevideo Mer & Mez... 35¢@42¢

Leather Market Report.

[Corrected weekly by Dooliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, July 18, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as follows:

City Tanned Leather, 1st... 25¢@28¢
Santa Cruz Leather, 1st... 25¢@28¢
Country Leather, 1st... 25¢@28¢
Stockton Leather, 1st... 25¢@28¢

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz... 80¢@85¢
Jodot, 11 to 19 Kil., per doz... 70¢@80¢
Jodot, second choice, 11 to 15 Kil., per doz... 60¢@70¢
Lemoine, 14 to 18 Kil., per doz... 75¢@80¢
Lemoine, 12 and 13 Kil., per doz... 68¢@70¢
Cornellian, 16 Kil., per doz... 70¢@80¢
Cornellian, 12 to 14 Kil., per doz... 60¢@68¢
Ogerau Calif. 1st doz... 84¢@90¢
Simon, 18 Kil., per doz... 65¢@70¢
Simon, 20 Kil., per doz... 68¢@70¢
Simon, 24 Kil., per doz... 72¢@80¢

Robert Calif. 7 and 8 Kil... 35¢@40¢
French Kips, 1st... 1 00@1 30
California Kip, 1st doz... 60¢@80¢
French Sheep, all colors, per doz... 15¢@20¢
Eastern Calif. for Backs, 1st... 1 15¢@1 25¢
Sheep Roans for Topping, all colors

A Good Binder for \$1.50.

Subscribers for this journal can obtain our Patent Elastic Newspaper File Holder and Binder for \$1.50—containing full title of the paper on the cover. It preserves the papers completely and in such shape that they may be quickly fastened and retained in book form at the end of the volume, and the binder (which is very durable) used continuously for subsequent volumes. Post paid, 25 cts. extra. It can be used for Harper's Weekly and other papers of similar size. If not entirely pleased, purchasers may return them within 30 days. Just the thing for libraries and reading rooms, and all who wish to file the Press.

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

WM. F. SPENCER—California.
C. H. DWINELLE—Special Corresponding Agent.
I. N. HOAG—Sacramento, General Agent.
F. M. SHAW—San Diego.
L. P. MCCARTY—California.
SAMUEL CUSHMAN—Colorado Territory.
A. C. KNOX, City Soliciting and Collecting Agent.

OUR LONDON AGENT.—Frederick Brash, 21 South Grove East, Mildmay Park, N. London, England, will act as agent for the Press and receive subscriptions and advertisements at our lowest rates.

PHILADELPHIA AGENCY.—W. H. Daffin, formerly of San Francisco, is our correspondent and business agent, Frankford, Philadelphia, Pa.

H. BAHLEN & BRO., formerly of Havilah, Kern county, will please communicate with this office.

Our Printed Mail List.

Subscribers will notice that the figures found on the right of the pasted slips, represent the date to which they have paid. For instance, 21st/70 shows that our patron has paid his subscription up to the 21st of September, 1870; 4/72, that he has paid to the 4th of January, 1872; 4/73, to the 4th of July, 1873. The inverted letters (1311, etc.) occasionally used are marks of reference, simply for the convenience of the publishers.

If errors in the names or accounts of subscribers occur at any time an early notice will secure their immediate correction. Please notify us if you are not properly credited within two weeks after paying.

Postmasters, please send corrections also.

Thresher's Guide and Farmer's Friend—Just Published.

Written by D. Hollihan, a practical thresher for over fifteen years.

It contains facts and hints of great value to both threshers and farmers. A small book worth many times its cost to those specially interested, who thresh or employ threshers.

CONTENTS.

Beater, care of; Belt Protector, Hollihan's (Illustrated); Belts, Management of; Cracking of Grain; Cylinder, How to balance; Cylinder, Movement of; Cylinder, Motion of; Engineer's Duty; Gears or Belt Machines; Gears, Management of; General Management; Horse Powers; Horse Power, Moving a; Introductory Remarks; Machines, Management of; Machines, Moving them; Management, General; Rate, Speed of; Shoe, the; Shoe, Improved; Shoe, What it is; Sieve, New Jointed (Illustrated); Stacking Wheat; Steam Powers.

Published and for sale, wholesale and retail, by DEWEY & CO., at this office. Single copies, in flexible cloth, \$1. In extra binding, \$1.50. Post free.

Agricultural and Industrial BOOKS.

For Sale at this Office.

American Manures, and Farmers' and Planters' Guide—comprising a description of the elements and composition of plants and soils—the theory and practice of composting—the value of stable manure and waste products, etc., etc.; also chemical analysis of the principal manufactured fertilizers—their assumed and real value—and a full exposure of the frauds practiced upon purchasers. By Wm. H. Bruckner, Ph. D., and J. B. Chynoweth. Price \$2, post paid. Address DEWEY & CO., this office.

The Fruits and Fruit Trees of America, or the Culture, Propagation, and Management, in the Garden and Orchard, of Fruit Trees generally, with descriptions of all the finest varieties of Fruit, Native and Foreign, cultivated in this country. By A. J. DOWNING. Illustrated; 1098 pages; 1869. The best authority, and only complete work. Price, in cloth and gilt, \$5, post paid, by DEWEY & CO., this office.

New American Farm Book—originally by R. L. Allen; revised by Lewis F. Allen, 1871. Embracing information on all general subjects pertaining to Farming and all branches of Husbandry—a wide range, yet very fully and ably treated. 526 pages. Price \$3, post paid. Address DEWEY & CO., this office.

Harris (Joseph) on the Pig. Breeding, Rearing, Management and Improvement. Illus., 250 pages. 1870. Interesting to all readers; instructive and full of hints to raisers. Price \$2, post paid from this office.

Cranberry Culture, by a Practical Grower in N. J. Joseph J. White. A special treatise of 126 pages. Post paid from this office, \$1.75.

Farm Implements and Farm Machinery, and the principles of their construction and use. With simple and practical explanations of the Laws of Motion and Force as applied on the Farm; by John J. Thomas; 287 illustrations and 302 pages. Sold by DEWEY & CO., post paid, for \$1.75.

Ten Acres Enough: A practical experience, showing how a very small farm may be made to keep a very large family, with extensive and profitable experience in the cultivation of the smaller fruits. Tenth edition, 1871. Price, post free, \$1.50, at this office.

Cotton Culture; by J. B. Symon; with an additional chapter on Cotton Seed and its uses. 190 pages, 1863. Price, post free, \$1.75, at this office.

How Crops Grow; by Johnson; A treatise on the chemical composition, structure and life of the plant, for all students of agriculture; with illustration and analysis. 394 pages; 1868. Post free from this office, \$2.50.

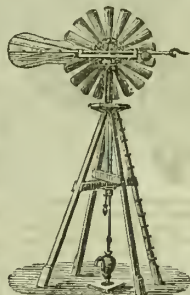
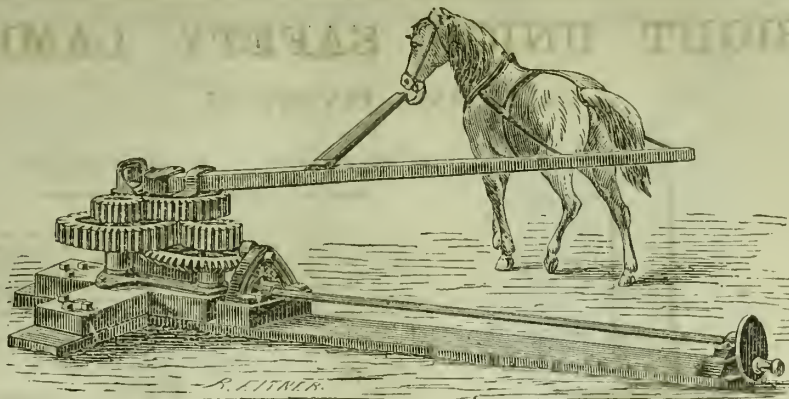
American Grape Growers' Guide; by Wm. Chilton (N. Y.) 204 pages, 1852. Post free, \$1, from this office.

American Fish Culture, embracing all the details of artificial breeding and rearing of Trout, and the culture of other fishes; by Thos. Morris. Illustrated, 304 pages, 1868. Post free from this office, \$2.50.

How Crops Feed; Johnson, 1870. On the Atmosphere and the Soil as related to the nutrition of agricultural plants. Illustrated. 375 pages. Post free from this office, \$2.50.

Randall's Sheep Husbandry, Illustrated, with a treatise on the Diseases of Sheep, Prevention and Cure Post free from this office, cloth edition, \$2.

Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plates. Catalogues, 20c. F. K. PHENIX, Bloomington Nursery, Ill. 2v4-16t



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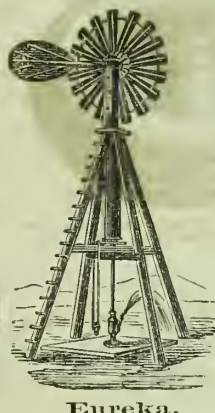
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We are the Largest Manufacturers of Pumping Machinery on the Pacific Coast.

N. B.—We have made the manufacture of Windmills a specialty the past ten years. During the last five years we have manufactured and put in operation a greater number of Mills than any other firm in the State; and we believe that in the last two or three years, more than any other two firms; which fact is the best proof in the world of the superiority of our machines. We GUARANTEE all our work, and we have NEVER FAILED TO FULFILL OUR GUARANTEES.



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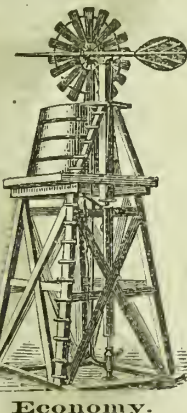
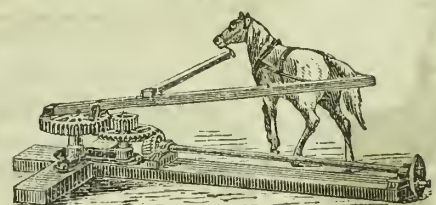
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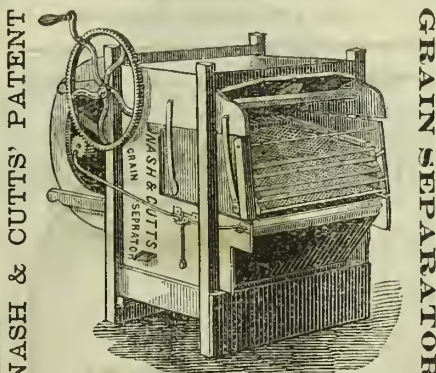
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And Pioneer Windmill Manufacturer of the Pacific Coast.



Three sizes, warranted to clean from 60 to 200 bushels per hour, according to size. Prices, \$40, \$50 and \$75. First Premiums at California State Fairs in 1870 and 1871. Warranted to separate Mustard Seed, Cheat, Barley and Oats, from Wheat. Cleans the Morning Glory Seed from Alfalfa.

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N. B.—All the Nash & Cutts Steam Separators are fully warranted. 3v4-15t

THE CALIFORNIA
Safety Gas Lamp.

This New Gas Lamp takes the place of the Candle, the Coal Oil Lamp and Coal Gas, and costs only

One-Half Cent per Hour.

Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. NO CHIMNEY IS REQUIRED.

It makes its own gas as fast as it is required, and when the light is blown out the gas ceases to be generated.

One Burner is Equal to Six Candles.
This Lamp burns Refined Petroleum, Gasoline, Danforth's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit.
WIESTER & CO.,
17 New Montgomery street, Grand Hotel, S. F.

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

WIESTER & CO.,
17 New Montgomery street, S. F.

3v4-3m

The Celebrated
Whitewater
Wagons
Thimble Skein
AND
IRON AXLE
TREADWELL & CO.

PRICES:

Thimble Skein, 3 inch, \$100; 3 1/2 inch, \$105; 3 3/4 inch, \$110; 4 inch, \$115; 4 1/2 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yoke and stay chains.

Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.

We invite the attention of buyers to this superior workmanship and finish of the justly celebrated Wagons. They are known throughout the West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective, it will be replaced without charge." We claim by actual test a SAVING OF FIFTEEN PER CENT. IN DRAFT over any other Wagon offered for sale. This ease of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves.

Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the BEST Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturing of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.

We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Hack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the SPRING SEAT 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY SEASONED HICKORY.

If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

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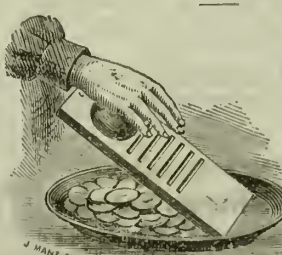
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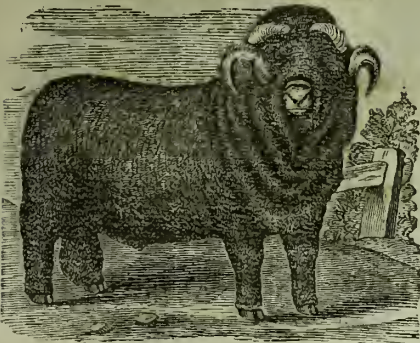
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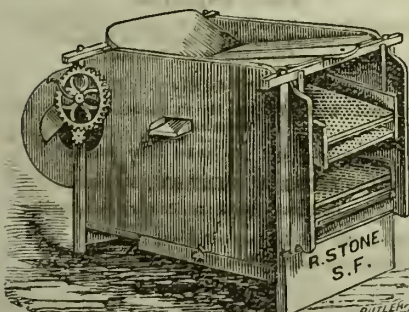
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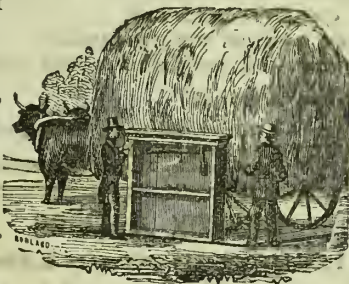
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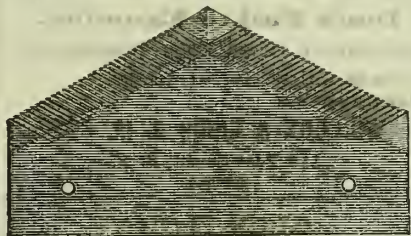
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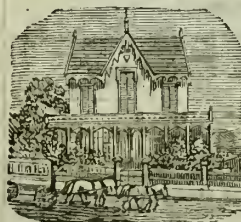
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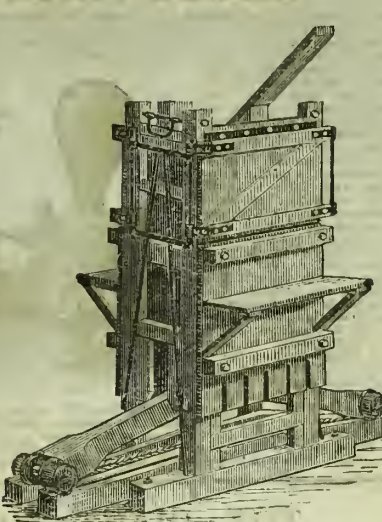
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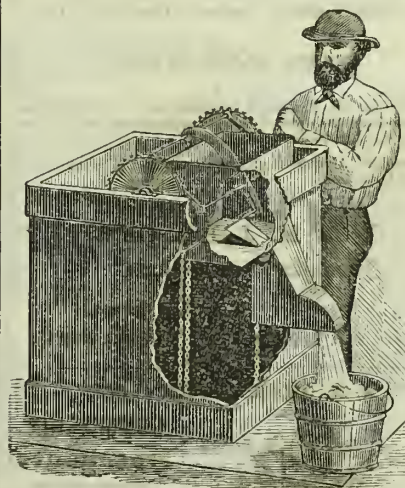
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18v3-3m

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BALL & CRARY, Patentees.



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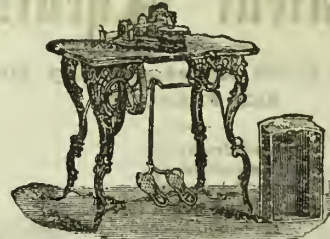
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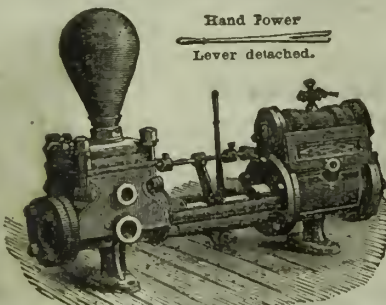
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v3-16p

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All parties interested are invited to attend.
By order of the Board,
1. N. HOAG, Secretary.
jul6-tt

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Volume IV.]

SAN FRANCISCO, SATURDAY, JULY 27, 1872.

[Number 4.]

Steam Plowing.

A great deal has been said and written on the subject of steam plowing in the United States; and engines, some to draw the plows by direct traction, others stationary on the sides of the field to be plowed, have been put to use, some drawing three plows, others five, and others again have attempted with as many as eight, and yet it is a fact that with all the skill usually attached to American ingenuity, we have fallen far behind the English in our efforts to successfully cultivate the land by steam plowing.

Fowler's steam plow has been at work successfully for years in England and France, and the Pacha of Egypt has as many as four hundred in steady employment during the plowing season. Land of the same quality, side by side, the one plowed by steam yields forty bushels per acre, the other by horses, yielding but twenty bushels. The cost of plowing by steam is one-third less than with horses, even in Europe where the plowman's wages are but forty cents a day.

Plowing by Contract.

There are establishments in England that employ 1,200 men each in the manufacture of steam plowing apparatus; and there are organized companies who hire out their steam machines or do work by contract, and there are said to be over five hundred steam plows thus held for hire, and parties contract to do plowing from eight to twelve inches deep, for \$1 and \$1.15 per acre, and plowing from thirty to forty acres per day.

It is not surprising therefore that Americans should be making continued efforts in the direction of some invention that shall equal if not greatly excel the present English steam plow. An invention has been put to practical test within the past three years in California, on the principle of revolving cutters, that seemed to promise favorable results, but we have not heard of its recent trials or performances. And now Mr. Alexander Campbell, of Yolo Co., submits an invention of his, both as regards peculiarity of engine and its attachment to plows, that seems to merit careful consideration and a full trial, and we are pleased to learn that the "Reclamation Fund Commission" of which G. G. W. Morgan is the active efficient Secretary, has taken the matter in hand. It has also been brought to the notice of the Sacramento Farmers' Club as follows:

Engines for Plowing.

In response to an invitation extended by the Sacramento Farmers' Club, Alexander Campbell of Washington, Yolo county, resubmitted his drawings and also the description of his steam-plowing, ditching and traction engines: "These engines are capable of cultivating from thirty to sixty acres per day of ten hours, from seven to twelve inches in depth, or of cutting one mile of ditching per hour, three feet wide at the top, one foot at the bottom, by two and one-half feet in depth. They may be made available at a moment's notice for any ordinary work, such as threshing, pumping, sawing, hoisting, or as a traction engine. They are fitted with Campbell's compound windlass, expansion frames, telescopic hoisting crane, etc. This windlass has a clip-drum, enabling one engine to be used when wanted, independent of any other, for plowing, etc. The expansion frames take all strain entirely off the boilers, thereby greatly reducing the wear and tear. The cylinders are steam jacketed, and all the gearing and working parts are made of cast steel, insuring the greatest strength and lightness. No other system of steam cultivation

can compare with this for thoroughness of work, less wear and tear, and economy of expenses for work alone. The best traction engine known to the public is manufactured by Avling & Porter, of Rochester, England. Their six horse-power engine has an indicated power of thirty-eight horses, and weighs 11,704 pounds. Eighty-three pounds is the tractive power of a horse at four miles an hour.

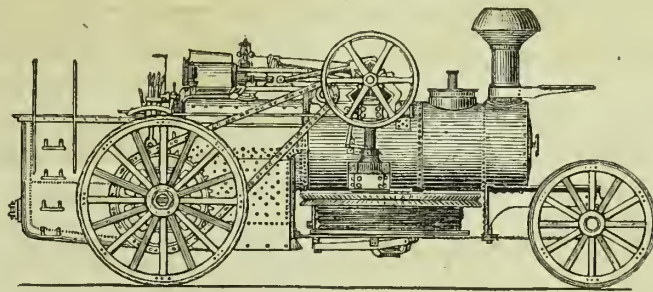
Power Required

To pull a ton over soft, sandy or gravelly ground requires a strain of 210 pounds. To plow a furrow eight inches deep by ten inches in breadth it requires a strain of 303 pounds.

The illustration we present of engine, and field work being performed, were engraved at the RURAL PRESS and patent agency office, 338 Montgomery street, San Francisco.

Where the Rain Comes From.

There has been a great deal said of the effect of forests upon the rainfall of countries. We doubt very much the correctness of attributing the lack of rain in California during the summer months to the absence of forests. No extent of forest will ever bring us rain in summer,

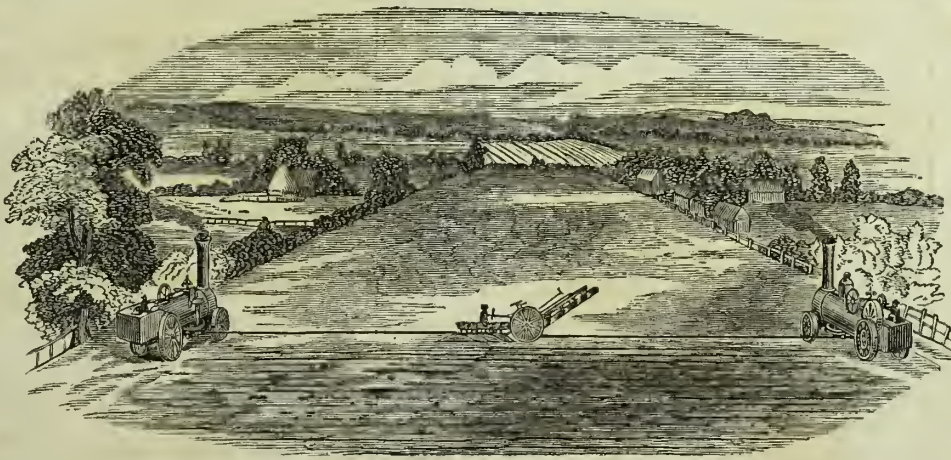


IMPROVED STEAM PLOWING ENGINE.

This power would pull five plows in a gang at four miles an hour. This, deducting say fifteen per cent. for stoppages, will give 175-100 acres per hour, or 17 24-100 acres per day of 10 hours, at a cost of 1,900 pounds of coal and two skilled men's wages. This assuming five pounds of coal per horse-power per hour. This shows a consumption of 1,160 pounds for actual work done and 750 for propelling the engine. Supposing this engine to be fitted

so long as the climate is controlled by the great ocean wind currents that sweep down the coast from the northern seas, or overland from the same direction.

Those from the ocean come laden with moisture almost to complete saturation, and they clothe the western slope of the coast range of mountains north of the central portion of the



THIS DESIGN SHOWS THE ENGINES AT WORK.

with a 'clip-drum,' the friction of the rope does not waste one-tenth of the engine power; thus we should have 34 2-10 horse-power for actual use instead of 23 2-10. Cost of direct traction—2,000 pounds of coal, \$10; two men, \$8—\$18 for 17½ acres. Stationary traction—2,000 pounds of coal, \$10; two men, \$8; two boys, \$3—\$21 for 27½ acres. Thus direct traction will cost about \$1 per acre, while the rope traction will cost seventy-six cents per acre."

After the reading of the above and the explanation of the drawings by Campbell, I. N. Hoag offered the following, which was unanimously adopted:

"WHEREAS, Alexander Campbell has exhibited to the Club drawings of a steam-plowing apparatus, an improvement on the English system of plowing by stationary engines, and explained the advantages of stationary engine-power over direct traction; and whereas we are fully satisfied that the productiveness of our soil can be greatly increased by deeper and more thorough cultivation, therefore,

"Resolved, That we regard Campbell's improvement a valuable one, and we would be glad to see the plow introduced in our State generally, and hope capitalists who are interested in the agricultural improvement of our State will not hesitate to furnish the necessary means to accomplish this object."

State with forests of timber; but the forests do not saturate the winds with moisture, nor do they bring rain.

We get our rain in winter, not because we have more trees and foliage then, than in summer; our rains are not the product of any country's forests; but they are brought to us by wind currents from afar, that come upon us laden with moisture obtained from some other source than our forests. We believe the south-east winds of winter bring us, but do not create here, the moisture that gathered into rain deluge mountain and plain. If the Sierras receive a heavier rain or snow-fall than do the plains below either in summer or winter, it is not because they are more densely timbered, but because of their altitude condensing the waters of the clouds into rain and snow.

Forests, timber belts and hedges exert a modifying influence on the winds of any country, and their growth should be encouraged; we want them for the timber, fire wood and their luxurious shade; but let us plant them because we want them for other purposes than rain producers.

The Wheat Crop of California.

In the southern counties of California, harvesting commenced as early as the 15th of June, with a fair yield of grain of an excellent quality. Gradually the harvest extended toward the more central portions of the State, with everywhere a satisfactory yield, till at last the power of the harvesters can be said to have fairly settled down upon the great interior valleys, about the 10th of July.

From that time to the present, probably more wheat has been garnered in from the great acreage of California, than was ever before in the same length of time in any other one State of the Union. And now, after more than two months of hay and barley harvest, and a full month of continuous wheat harvest, still the work goes bravely on, and will for a month to come.

And now just to jog the memories of a few of our Eastern States' grain growers, not to tantalize them at all, we would here remark, that not a day's rain has occurred during the whole of this grand harvest time, nor one cloudy day, nor do we expect one till next September. And further, that the straw is as bright as though gilded with pale gold, and the grain so solid, that in many sections of the State it will turn the scale at sixty-four pounds to the bushel.

Already in the season the spectacle is presented to the world, of a State so profoundly weighed down by her surplus wheat crop that all the means of transportation, by teams, navigable rivers and long lines of rail roads, are entirely inadequate to its removal to the sea-board; nor does the world send us ships enough to bear it to foreign markets.

As a consequence there are not buyers of wheat enough in the State to relieve the immediate wants of producers. Very many who from the effect of short crops of preceding years were in somewhat straightened circumstances, now find themselves obliged to submit to whatever low figure is the ruling one of the season; and the "shipping ring," having control of the entire marine fleet of transportation, hold the price of wheat in their own hands, greatly to the loss of the producer who may be forced to realize.

It is not that we advise the wheat grower to hold on for a rise, for we never do this; our mission being to give to the producer as near as we can, the exact condition of the world's markets, and the causes and reasons which in our opinion may affect prices, and then let every one act upon their own judgment in the matters of time and price. But when we see a successful effort to control the entire handling and transportation of our wheat crop, and those who do it set their own value upon it, with never a thought of counselling with the producer, we are apt to believe it will inure more to the benefit of the "ring" than to the man of toil.

For once we are ourselves the possessors of a wealth of wheat, which instead of benefiting those who have labored to produce it, will go, or the largest share of the profit it yields, into the hands of the monopolizers of its transportation to the world's principal markets.

A CONNECTICUT editor says: "Our early peas came up in two days after they were planted this year. Anybody's will, if the hens are allowed to run in the garden."

CORRESPONDENCE.

Alfalfa—Its History and Value.

EDITORS RURAL PRESS:—A late number of the RURAL contains an interesting article from a correspondent, suggesting the importance of cultivating alfalfa for pasturing sheep. Your excellent editorials have also been calling attention to this useful plant. It may interest your correspondent and other readers, as it has the writer, to see what was thought in early times of the worth and mode of culture of this most valuable pasture plant. Allow me to send you an extract from the work of an English Botanist, who wrote about it more than forty years ago. The article contains many useful suggestions, which may be of value to those who wish to cultivate it. By way of introduction, we will mention that the alfalfa as we know it in California, by its Spanish name, is exactly the same as the plant known in England as Lucern, and in France, as Burgundy hay, (*Foin de Bourgogne*). Its Botanical name is *Medicago Sativa*.

This writer says of al-fal-fa, "It is a deep rooting perennial plant, sending up numerous small and tall clover-like shoots with blue or violet spikes of flowers. It is highly extolled by the Roman writers; it is also of unknown antiquity in old Spain, Italy, and the south of France; is much grown in Persia and Peru, and mown in both countries all the year round. It is mentioned by Hartlits, Blythe and other early writers, and was tried by Lisle; but it excited little attention till after the publication of Hart's Essays in 1757. But though it has been so much extolled, it has yet found no great reception in this country." (England). "If any good reason can be given for this, it is that lucern is a less hardy plant than red clover, requires three or four years before it comes to its full growth, and is for these and other reasons ill adapted to enter into general rotations. When the climate and soil suit, perhaps a field of it may be advantageously sown, to afford early cutting, or food for young or sick animals, for which it is said to be well adapted; but though it will produce good crops for eight or ten years, yet from the time the farmer must wait till this crop attains its perfection, and from the care requisite to keep it from grass and weeds, we do not think it is ever likely to come into general culture.

The soil for lucern must be dry, friable, inclining to sand, and with a subsoil not inferior to the surface; unless the soil be good and deep, it is in vain to attempt to cultivate lucern.

The preparation of the soil consists in deep plowing and minute pulverization; and, in our opinion, the shortest way to effect this is to trench it over by the spade two or three feet in depth, burying a good coat of manure, in the middle, or at least one foot from the surface. This is the practice in Guernsey, where lucern is highly prized.

The climate for lucern, as we have already hinted, must be warm and dry; it has been grown in Scotland and Ireland, and might probably do well in the southern counties of the latter country, but in the former it has not been found to answer the commendations of its admirers.

The season most proper for sowing lucern, is as early as can be done in the spring months, as in this way the plants may be fully established before the season becomes too hot. * * * The manner of sowing lucern is either broadcast or in drills, and either with or without an accompanying crop of grain for the first year. Broadcast and a very thin crop of barley or other spring grain, is generally, and, in our opinion, very properly preferred.

The quantity of seed, when the broadcast method is adopted, is said to be from fifteen to twenty pounds per acre, and from eight to twelve if drilled. The seed is paler, larger and dearer than that of clover; it is generally imported from Holland, and great care should be had to procure it plump and perfectly new, as two years old seed does not come up freely. The same depth of covering as for clover will answer. The after-culture of lucern, sown broadcast, consists in harrowing, to destroy grass and other weeds, rolling after the harrowing to smooth the soil for the scythe, and such occasional top-dressings of manure as the state of the plants may seem to require. The top-dressings given to lucern may be either of the saline

or mixed manures. Ashes are greatly esteemed and also gypsum and liquid manure of any kind.

Lucern frequently attains a sufficient growth for the scythe, towards the end of April, or beginning of the following month; and in soils that are favorable for its culture, will be in a state of readiness for a second cutting in the course of a month or six weeks longer, being capable of undergoing the same operation at nearly similar distances of time during the whole of the summer season.

The application of lucern is also the same as clover. The principal and most advantageous practice, in the application of lucern, is the soiling of horses, neat cattle and hogs; but as a dry fodder it is also capable of affording much assistance, and as an early food for ewes and lambs may be of great value in particular cases, whether in a green or dried state.

The produce of lucern, cut three times in a season, has been stated at from three to five and even eight tons per acre. In soiling, one acre is sufficient for three or four cows during the soiling season, and a quarter of an acre, if the soil be good, for all sorts of large stock for the same period, or half an acre on a moderate soil. To save seed the lucern may be treated precisely as the red clover, and it is much easier threshed, the grains being contained in small pods, which easily separate under the flail, or a threshing machine or a clover mill."

The views of this writer show how well the hot, dry air and sandy soil of California are suited to the luxuriant growth of lucern, or, as we call it, alfalfa.

Turlock, July 18, 1871. J. W. A. W.

Los Angeles County.

EDITORS RURAL PRESS.—Passing northwest from the "Riocon" in San Bernardino County, we come to the Chino Ranch, eight leagues in extent; occupied by Jas. W. Waters and others as a stock ranch; the former having between five and six thousand cattle and sheep, and the others about three thousand. Crossing this ranch brings us into Los Angeles County, at St. José Creek and the little hamlet of Spadsa, a very productive place, occupied principally as a range for sheep and other stock by Louis Philips and the Rorbideaux; but portions are highly cultivated and well watered. Mr. Rorbideaux having the Pecan, Persimon, Hickory, Pawpaw and other trees of the Mississippi Valley, together with a choice selection of tropical and other fruit trees.

Following down the San José Creek ten miles brings us to the Rowland and Workman tracts, containing 48,790 acres of the richest lands in Los Angeles County. There are 40,000 vines of the Mission grape on this tract with some of the finest olive trees to be found in the state. These people appear to be patricians in the truest sense, surrounding themselves with substantial evidences of thrift and refinement. These gentlemen, Rowland and Workman, are old friends, and the real pioneers of this country, having been in friendly relations, upon this coast for fifty years, first in Mexico then in California.

Passing westward six miles brings us to the San Gabriel river and the "Monte." This last is a vast thicket of willow, alder and nettles; with settlers interspersed, some of whom have been in undisputed occupancy for sixteen years, yet those legal gymnasts and jugglers, the lawyers, find room for operation, in extending the interminable "grant" incubus over it.

Grapes and Vineyards.

In this vicinity close to the base of the mountains, is a vineyard that may well challenge comparison. It is five years old, has 50,000 vines on a high bench of gravel soil, that has not been irrigated, and averaged six pounds of grapes to the vine, close pruned last year. This vineyard belongs to Mr. B. S. Eaton, who is also a successful propagator of orange and other trees; but thinks the vine preeminently the crop for Southern California. His vines have a beautiful bouquet and fine tint without "Doctoring." In this connection it may be well to mention ashrewd observation of another vine grower of this county, when questioned upon irrigating his vines; "what do I want to put water on them now for? I should only have to carry it out, in the wood pruned away, next spring; if any irrigation is done let it be done in the fall or winter after the grapes are gathered."

One other suggestion from the same

source about the variety of grapes best for all purposes. After seventeen years of experience, the kind of grape preferred, as being found both hardy and prolific, in fact, having all the best qualities of the Mission, with a more desirable flavor, and smaller seeds, is the Black Burgundy; next in flavor, the Black Malvoise. One thousand vines, (close pruned) producing four hundred dollars worth of grapes, and some Rieslings, five years old, (close pruned,) gave, with the same cultivation, thirty pounds to the vine.

In fact, some of the much lauded vines, in the same yard, such as the Muscat of Alexandria and others, fell far behind the former in intrinsic value. This is disinterested, as the propagator has vines to sell. From present evidence, the three varieties named at first, with one other, and in the following order, are considered as the most desirable for general cultivation. Black Burgundy, Riesling, Black Malvoise and Royal Muscatel. Of course every one will have their favorites, but what is desirable to know, is what varieties are best, regardless of any favoritisms or speculative bias.

Tropical Fruits.

Although the vine is without doubt the staple to be relied upon in Southern California, yet the semi-tropical fruits; demand a large share of attention. I am not prepared to say what the exact extent of the area is, upon which to rely for orange production; but it is more limited than many would have believed, and probably will not exceed one hundred thousand acres in this county, and probably not more than that amount in both the counties south of this. The orange must have water without stint; and the area sufficiently free from frost, which is well watered, does not, we opine, exceed the above figures in the three counties included.

Preparations are perfected for supplying just the kinds of semi-tropical and other fruit trees which are desired. No matter how great the demand, as evidenced by a glance through the nurseries of Thos. A. Garey and others in this vicinity. This gentleman has on his grounds, 36,000 orange and lemon trees, from 1 to 5 years old; 50,000 each of walnut and peach of the same age, (the peach are partly for almond grafts), with apple, pear and grape in good variety.

Several hundred thousand orange and lemon trees in seed-beds intended for grafting were not counted, as this experienced horticulturist, does not consider a tree at all sure to live and do well, unless it is removed and the tap root cut, to make it throw out lateral roots; while many nursery men sell trees from the seed beds that have never been transplanted, one in five of which are not likely to live or do well. Among other choice varieties in this nursery, we noticed the Chinese Mandarin orange—a dwarf, bearing at five years—and the Sicily blood orange. I counted carefully grafts of the orange on lemon stocks, and found about two out of three only had lived. Before closing, it may be well to record the fact that vines here are found to increase in productiveness up to 70 years at least, as some of that age produce here a gallon of wine, and a diminished quantity from 65 year-old vines on the same ground, and less on 60 year-old vines.

F. M. SHAW.

Los Angeles, July 7, 1872.

Snuffles in Sheep.

On the 26th of June, we received a letter post marked Sacramento, which reads as follows:

EDITORS RURAL:—Can you let me know through your valuable paper how I can cure a few choice sheep who have a fearful sneezing and discharge from the nostrils. A neighbor advised me to rub Stockholm tar up their nostrils, I have done so several times, but with no good results. I have been told they have got the snuffles, but I am not posted. A few lines on the subject from you will never be forgotten.

T. C. W.

We were desired to send notice by letter which we did, but now after fifteen days it has been returned to us unopened. Another request from a different source, asks for like information, so we give the copy of the letter as sent to T. C. W.

DEAR SIR.—Your sheep have doubtless got the disease known to sheep growers as the "snuffles." All high bred English mutton or the long woolled sheep are more or less subject to it, in this country; and it usually makes its appearance after sudden changes of weather from heat to cold,

or cold to heat. It is rarely, but sometimes accompanied by a cough, as well as the sneezing; but in any event it is better to give no medicine or make any application whatever. It is seldom fatal, perhaps never.

The best treatment—as you probably find they have not so good an appetite as before the attack—is to give them for a few days, a plenty of good nourishing food, green grass or alfalfa, with clear, pure water for drink, and give them good shelter from the sun in the middle of the day, but not in a close stable or barn, the open air with the shade of trees, or a covered shed open at the sides all round is best.

Give them a little extra care for a few days, and your animals will be all right. Give them all the salt they will eat.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.)

FOR THE WEEK ENDING JULY 2ND.
FENCE-PANEL ADJUSTER.—Francis M. Ranous, Yreka, Cal.
SELF-ACTING EXPANSION RAIL AND CHAIR.—William Close, Sacramento, Cal.
MEDICAL COMPOUND FOR THE TEETH.—John Condon Hassell, Nevada City, Cal.
METHOD OF ELEVATING THE MERCURY IN AMALGAMATING APPARATUS.—Ottokar Hoffman, Ellsworth, Nev.
ORE CONCENTRATOR.—Morgan Hungerford, S. F., Cal.
FURNACE FOR ROASTING ORE.—Richard F. Knox and Joseph Osborn, S. F., Cal.
METALLIC PACKING FOR STATIONARY JOINTS.—Ira J. Saunders, Davisville, Cal.
CAN FOR LIQUIDS.—Andrew V. Smith, S. F., Cal.
MEDICAL COMPOUND FOR COUGHS, COLDS, ETC.—John Willey, Oakland, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Coal.

The production of Coal in California is being prosecuted with vigor. The product of the Mount Diablo mines for the past six months shows a marked increase over the same time last year, as will be seen by the following statement:

	1871.	1872.
January, tons.....	9,332	14,671
February.....	8,832	13,616
March.....	10,508	16,030
April.....	9,157	13,062
May.....	11,468	14,778
June.....	11,177	12,289
Totals.....	60,474	84,446

At least 90 per cent. of the product at these mines finds its way to this city, where it is chiefly used for steam purposes. These mines are the only ones worked in the State to any extent. Our other Pacific coast supplies come from Oregon, Washington Territory, Utah and British Columbia. The mines in Oregon and Washington Territory from which we obtain supplies are at Coos Bay, Bellingham Bay and Seattle. The receipts from these sources for the six months compare as follows:

	1871.	1872.
January, tons.....	3,994	2,790
February.....	4,367	1,404
March.....	2,010	3,455
April.....	6,013	3,877
May.....	4,768	4,497
June.....	4,371	4,387
Totals.....	27,423	20,410

The decrease receipts from these mines is easily explained. There was a stoppage of several weeks at the Seattle mine to complete railroad to the water. There have been no receipts from the Bellingham Bay mine, on account of a fire in the early months of the year, and the repairs subsequently needed. A vessel was recently sent there to load, and it is reported that the mine is now all right. Most of the receipts of coast descriptions for the past six months have therefore come from the Coos Bay mines. Hereafter it is expected that the Bellingham Bay and Seattle mines will furnish their usual supplies. The Rocky Mountain mine in Utah has sent us 771 tons Coal in the past six months all by railroad.—*Bulletin*.

SCIENTIFIC PROGRESS.

Vegetable Physiology.

Some interesting researches have lately been made into the character and movements of the chlorophyl grains in the cells of leaves. Sachs was the first to discover that the chlorophyl or green substance of leaves were less intense under the direct sunlight than under diffused daylight. This discovery lead to the further fact that, in the movement of the grains of chlorophyl, they group themselves during the day (but only under the action of the more refrangible solar rays) upon the more illuminated horizontal cell walls, and withdraw at night to the perpendicular walls. The direct sunlight causes the same movement of the green particles that darkness does.

In the action of light in assimilation, in the decomposition of carbonic acid and in the formation of chlorophyl, all the researches go to confirm the generally received view that such phenomena are dependent solely upon luminous intensity, and that the most refrangible rays are most efficient. It is found that in plants where

White light decomposes	100 parts of carbonic acid,
Red and orange	32.1 "
Yellow	46.1 "
Green	15.0 "
Blue, indigo, violet	7.6 "

As to the phenomena which result from the absence of light, Kraus has studied the difference between stems and leaves when subject to the bleaching effect of the direct rays of the sun, and has found that the limbs of leaves undergo complete arrest of development in darkness, while the space between the joints of stems elongate much beyond their normal dimensions. The blade of the leaf completes its growth, after coming into the light solely from the materials which it assimilates into starch or its equivalent. Starch in older times is of no use to it. In darkness none of this is produced, and so its growth is arrested.

The Spring Period of the Maple.

Schröder has devoted much attention to the successive phases presented in the development of vegetation from the ascent of the sap at the moment when the expanded leaves begin to decompose carbonic acid.

The maple, under the latitude of Breslau, "weeps" for about a month; the sap rises gradually to a certain level, when it descends again by degrees, in proportion as the development advances. Holes pierced in the trunk, at different heights, enabled this sap to be collected daily; and very numerous analyses keep us informed of the smallest variation in its composition. It always contains sugar, a transitory product of the transformation of the starch accumulated in the tissues during the preceding summer, and destined to become re-transformed when it reaches the buds. The proportion is but slight, at the first awakening of vegetation; it increases gradually up to a certain maximum, in proportion as the vital phenomena acquire more intensity; and, finally, it diminishes when the young organs, approaching the term of their development, are on the verge of sufficing for themselves. These facts are perfectly in accordance with such a theory of growth as has been established by the researches of modern observers. The albumen and the mineral salts and their dissemination in the sap, at different heights at the same moment, and at different periods, is exactly governed by the different phases of development.

The Microscopic Examination of the Bud.

The different substances which are called upon to assist in the development of the young leaf are traced by means of the microscope and re-agents from cell to cell. Two, especially, give origin to detailed observations, namely starch and tannin. The dissemination of the former in the different tissues, its transportation through the starchy layers of the fibro-vascular bundles, its disappearance toward the point of vegetation, at the surface of which it speedily reappears as cellulose—all these different phases have been carefully studied and followed up. As to tannin, it is developed in all the cells of the bud; and when once it has made its appearance it persists there, without appreciable change. Its function has greatly embarrassed M. Schröder, as he was unable to recognize in it any of the characters of an excremental product, properly so called. The fact that it is constantly to be found in the youngest tissues (in which life is most intense), seems to indicate that it is a sort of final product, charged with a still unknown office in the life of the cell. If the true chemical nature of this substance were better known, the solution of the problem would, perhaps, become easier.

The above has been condensed from a communication in the July number of the *American Journal of Science*.

AN ENORMOUS RUBY.—Prof. Sheppard, of Amherst College has recently made a valuable addition to his splendid cabinet of minerals. This addition consists of a ruby of enormous size—the largest in the world—weighing 316 pounds! It was discovered in one of the Southern States, and was about to be taken to Europe when the Professor secured it by an offer of \$300. Cheap enough.

MECHANICAL PROGRESS.

Steam in its Fickle Moods.

A writer in the *Railway Review* says: The notion prevails that a sound steam boiler, well supplied with water, will never burst at any reasonable pressure. Unfortunately engineers act upon this hypothesis, and still more unfortunate is it, that when not to do so, and why is almost impossible of demonstration. Facts, well known to every practical engineer, show that every little while a boiler which, under apparently identically the same circumstances in every particular, on one day makes steam enough, on the very next day will not, and can not be made to generate enough for more than light duty. Train dispatchers occasionally find their trains thrown into confusion from unexpected delays, and upon careful inquiry into the cause, are informed that for some unexplained and mysterious reason, the engine men cannot make steam enough to do their ordinary work.

Again every little while a boiler explodes, for which no possible cause can be assigned. And not only this, but such like "acts of God," very often follow each in quick succession for short periods. Three were reported on one day, within the past year and only a hundred or so miles apart. In short, it seems to be conceded that steam, in boilers, may be generated in greater volumes in the same given time (and that, too, very quickly) on some days than upon others; and hence it is reasonable to conclude that what would be prudent management of a boiler at one time, might be very imprudent at another.

To ascertain this accurately is certainly a desideratum. It may be that the condition of the atmosphere has something to do with the abnormal eccentricities of steam boilers. A close watch of barometric changes at those times when the generation of steam is found difficult, electro-metric observations—as far as instruments are perfected for that purpose—in short, a search into "Ether" by competent scientific analysts, might, possibly, reveal their causes and supply the engineer with means of knowing when danger threatens, just as our seamen are warned and protected by the storm signals which have been found so beneficial.

As yet, whatever investigations, if any have been made in this direction with reference to such an end, are not made known. Probably very little inquiry has been had; owing, perhaps, to the fact that so few of our practical, mechanical engineers are scientific men. Many, indeed the great majority, are skillful in manipulating their engine and faithful and fearless in the discharge of duty. But these men who are the very ones to know, and who do know, when strange phenomena are manifested, are not the ones to search for causes. They are not educated to the point where such investigations are possible for, or interesting to them to make. Their knowledge ends with their experience of the facts.

We indulge the hope that our meteorologists may take this subject under serious consideration, with a view of ascertaining what are the indications of the atmosphere on those occasions so unfavorable to the generation of steam; the great obstacle being, after all, that they can not know of them at the precise time.

In this connection it is naturally suggested, as we have repeatedly urged upon the attention of railway managers and others interested in the employment of steam, that our practical engineers should be afforded a good educational institution, where preliminary training would beget a taste for, and supply the means of making scientific researches, with the view to elucidating many just such phenomena as we hint at. And we have faith to believe that the day is near when they and their laws and operating causes will be fully understood, and men will wonder how this knowledge could have been dispensed with so long with so few disasters.

INDELIBLE INK FOR ZINO LABELS.—A New York correspondent of the *Gardener's Monthly* in relation to making zinc labels, lately inquired for in the *Western Rural*, says: First let the label oxidize a little by dipping it in water for a day or two before using, and then write with a common lead pencil. We have seen labels in use for twelve years so written, as "black as ink," and with all the appearance of lasting for half a century. This plan was discovered, we believe, by Col. Wilder, and was first communicated by Mr. E. V. Petticolas, of Cincinnati.

The Pacific Coast and San Francisco.

The future greatness of San Francisco will depend mainly upon the thrift and general prosperity of the interior, and the development of its vast resources. The physical conformation of the State, with its two great interior valleys and system of rivers, naturally make a large part of California directly tributary to San Francisco in the disposition of its already large and rapidly-increasing commerce. The

coast range of mountains completely shutting in this commerce from the sea, at all central points except at the Golden Gate, gives to San Francisco an advantage of position hardly equalled by any other sea port in the world.

Now with this great advantage in her hands, San Francisco, that has been built up in a great measure by the power and quickening impulses of vast streams of gold and agricultural products, wrought from the hard rocks and soils by the will and nerve of a mining and rural population, should now in turn lend a helping hand, in aid of a continuance of these tributary streams of wealth.

Agriculture and Mining.

The great agricultural interest is hampered in its progress by the want of more railroads, and San Francisco should help build them. Innumerable mines of untold wealth, yet lie undeveloped in all the vast ranges of the Sierras, and the money of San Francisco should be freely given to unfold their riches, or to the building of roads, making them accessible, that the very riches they contain may be in turn more easily poured into the lap of the mistress of the commerce of the Pacific seas.

The iron we are consuming year by year, at the cost of millions of dollars, should be wrought out of our own mines by San Francisco capital, keeping our money at home and giving employment to thousands now here, and to thousands more who stand ready to come whenever capital will give them the work to do.

The Power of San Francisco.

San Francisco by the great vote she wields, now carries a moral power for good or evil to the yet undeveloped interior, that should be felt on the side of right and justice. She should use her vote and her influence in the advancement of education, liberally allowing the public school moneys to find their way among the valleys, among the mines and recesses of the mountains, until their population shall be as renowned for intelligence as are they of Switzerland.

We want her power for good, but not in aid of another gigantic lottery by which to wring out the last dollar from an already purse depleted people. San Franciscans are able by their influence to break up, instead of building up, monopolies and "rings" for crushing the struggling energies of a people, who have to a great extent given them or contributed to the wealth and power they now possess; and San Francisco should lead in doing it.

Low Freights and Fares.

They should aid in establishing a system of low freights and low fares, that the produce of the interior can be placed on ship-board for exportation without absorbing the entire profit of culture and production. Give us a free port, inviting the merchant fleets of the world to our shores, if needs be, that we may have transportation at something less than absolutely ruinous rates. Give us low fares that all may visit now and then the seat of so much wealth and power.

It is simply strange that the people of San Francisco while talking through a committee of one hundred on the subject of a trans-continental railroad, by which San Francisco is to be particularly benefited, cannot see the need of a strong and earnest competition or opposition transit line of communication by rail or steamer between the bay city and interior places. Not an opposition to be bought off or trifled with, but one that would assure to the people of the interior a passage to and from San Francisco at a moderate cost.

Relative Conditions Changed.

In the strange, wild days of '49, the mining counties with their teeming population of gold seekers, swayed the destinies of the State, controlled the election of her officers and held a taut rein upon the "cow counties" and their cities. El Dorado county alone, giving a larger vote than the city of San Francisco; and giving rise to prejudices and jealousies not altogether unfounded, which engendered a bitterness of feeling.

But time has wrought its changes, and now the "cow counties" rule, whilst San Francisco alone, casts a full third of the entire vote of the State. With the growth of her power, should be the throwing off of old prejudices against the interior, and in its stead should be exercised a magnanimity in keeping with her great and unprecedented prosperity.

A New Class of People.

San Franciscans should throw off some of their exclusiveness; mingle more with

the people of the interior; see how greatly they differ, the men and merchants of the present, from those of '49; visit them at their homes; enter with spirit into the enterprises that are projected for the general good of the people; give them banks, where money can be had on good security at a reasonable rate of interest; or take a hand in some of the vast schemes for irrigating the otherwise half productive lands of the great valleys, that cannot but serve to enrich alike the prosecutors, country and the city; loan a part of your great wealth, for the building up of manufacturing, and to responsible young men, who are ready to engage for a term of years, in the breeding and rearing of sheep and the Cashmere goat, throughout the length and breadth of the great western watershed of the Sierras.

Then let our successful Metropolitan merchants reach out their hands in aid of the interior, and find pleasure in investing their earnings on this coast instead of retiring to what they term their (Eastern) "homes." By so doing, they will soon find the false prejudice of the interior broken down, and a genuine satisfaction awarded to them, and to their everlasting memory.

The time is not distant when this city will extend for miles over the entire peninsula. But this cannot occur until the un-called for animosity existing between the Bay City and interior are blotted out. Not until her vast fields at her back become an empire beaming with life throughout, with a population numbering from a million upwards, of the most intelligent and progressive people on the face of the earth—a chosen population, as it were, from the four quarters of the globe.

Notable Examples.

Do what Chicago has done; cause railroads to radiate from the city in every direction in which there is land, to hold them up, and if there is no land build bridges, make a foundation of something, so that the great northern half of the State can get to the city without being obliged to swim, or go a hundred miles out of the way to get there on land.

If you hav'n't enough of good water to drink, go to work and get it, there is enough in Lake Tahoe; and if the water of your rivers don't run the right way to suit your convenience, do again as the Chicagoans have done, turn it round and make it run the other way. Have some "snap," and let the result of it be seen in the increased facilities for communication with the interior; and not let another little trio of Sacramento country merchants turn a "Dutch Flat swindle" into a grand trans-continental railway right before your eyes, without taking a dollar of the stock except what is wrung out of you by the nerve, effort, influence, and good sense of a few comprehensive minds.

A Single Exception.

San Francisco does present one notable instance of enterprise and thoughtfulness in reference to the wants of the interior. It is found in the vast scheme, now in the process of accomplishment, for the reclamation of the half submerged lands and islands at the confluence of the Sacramento and San Joaquin rivers. But there should be more men in San Francisco, with their large wealth, ready to embark in other great and paying enterprises, as were the men of the Reclamation Company.

There should be found men ready to assist in bringing out new machinery and appliances for levee building, ditching and steam plowing; helping the poor but intelligent and scientific inventor, at least to the bread he needs, while putting the conceptions of his hard worked brain into practical shape for the good of mankind.

Steamship Lines.

It is not time yet or becoming in San Francisco to rest upon her laurels of already accumulated wealth; it is too early in the history of the world's progress for her to do so now, just as new and vast fields of promising enterprise are opening to her embrace. She should let the world see that she is able to hold the power she has herself created over the commerce of the seas, and which is yet entirely within her grasp.

San Francisco is able to thread the Pacific with steamship lines connecting her with Japan, China, Australia and the Islands of the great Pacific seas, and should do it. Should make the entire coast from Panama to Behring Straits, and from thence to the Amoor, and on to the lower coast line of Hindostan, and then sweeping round the great archipelago of the Pacific, make all tributary to the queen city of the sunset shore, and center within her golden portals the wealth and commerce of the world.

FARMERS IN COUNCIL.

Napa County Farmers' Club.

Club met pursuant to adjournment, President Fisher in the chair.

Question for discussion being called, Mr. Gridley said: He should give his best thoughts to the Club, and be careful in their expression because "what is written remains." He might differ with others on some points, but his views were the result of years of study and experiment. He believed the time is coming when we shall be obliged to ship our grain in bulk, and to reduce the cost of marketing otherwise, or we should not be able to compete with other grain producing countries. It is to the interest of buyers in Liverpool and other foreign ports to help us in this matter. California grain is always in demand in Liverpool at the highest figure, because of its superior quality, and because of its fitness to mix with dryer grains. We may not be able to accomplish all we hope, but we may, at least, if we will, ship direct, and get clear of speculating middlemen. That grain may be shipped in bulk had been demonstrated.

Mr. Sawyer said: He regarded these Clubs of importance, not so much for what one might accomplish alone, but that each one would form part of a general organization that should extend over the State, enabling the entire farming community of the State to act in concert. It is a fact that Friedlander is chartering all the ships to arrive, and taking the grain market into his own hands. Farmers, whose produce must be sold, must take just what he chooses to pay. When we shall have brought about a general organization, we may be independent of Friedlander or anybody else. We can then make arrangements and do our own shipping as well as he. Moreover, we can down the sack monopoly. Grain may be shipped in bulk—the only difficulty is in fitting vessels for it, and he had learned from conversation with a sea captain that the cost would not exceed \$250 per vessel, and that the lumber used could be selected with reference to the market for which she was bound, and disposed of at a profit. The sack monopoly has us by the ears now, and the insurance men are helping it to hold us, by charging exorbitant rates on grain shipped in bulk. To overcome this combination of monopolies the farmers must unite in a general organization, which will be as strong as all others together.

Mr. Saul said: The question naturally takes a wide range. There is work to do, and many things to be considered before our object shall have been accomplished. The men who are interested in these speculations at the farmers' expense, are not going to give up without a struggle; they must be made to do it. He heartily endorsed the suggestion of a general organization, and saw no difficulty in the way. Every other interest—the shoemakers, painters, etc.—has its clubs and its unions, and by thus uniting their strength they were enabled to accomplish something. Why not the farmers? True they have agricultural societies, and such things, but these do not get hold of vital questions. He hoped that by correspondence with other clubs a general meeting might be had, by which a better understanding could be reached by the farmers of the State. He spoke of this as a part of the sack question, because such an organization would enable us to do something to the point. The farming interest must be made more prominent through the press, and receive more attention from Legislatures. There is now a larger fleet headed for San Francisco than ever arrived there before in six months, and perhaps a larger quantity of grain directed to the same port. There is also, it is well known, a deficiency in the European market; so that, but for the pressure brought to bear by the San Francisco "ring," our grain would be shipped at reasonable rates, and bring good prices. The time is coming, and is not far distant, when avenues will be opened up by which we may dispose of our produce without any such interference. There is talk of the Steam Navigation Company, for want of other business, taking shipments of grain. If they do, they will probably ship in bulk, as it is much more convenient, especially in handling across the Isthmus. A general organization of the farmers will encourage and hasten this great reform.

Mr. Van Bever thought the ideas advanced were good, but so far they were only theory. We want practice. We must have knowledge which can come only by trying the experiment. A number of farmers should unite and load a vessel, or several vessels, and compare results. It might not pay the first time, but the trial will show us what is wanting to make it pay. He approved of the plan suggested for a general organization. We ought, as a Club, to make an effort to increase our numbers.

Mr. Trubody approved of what had been said. It appeared that the farmers had remained inactive until they were completely hemmed in by monopolies. On account of the diversity of their interests, and their being situated so wide apart, it is difficult to unite them on anything, yet he hoped that this was about to be done. He agreed with Mr. Van B. on the importance of increasing our members. Numbers represent capital and influence.

Mr. Fisher said: If sacks were really necessary, he should urge the establishment of a factory in our midst; but they are not necessary,

and they must be dispensed with. If farmers would maintain their independence, they must by all possible means, keep competing markets open for their produce. In this State our soil is deteriorating, and the cost of marketing is growing on us. Agriculture and manufacturing go hand in hand, as the only permanent sources to wealth. He would encourage factories, that we might cut off useless costs and keep our money at home.

Minutes read and adopted, and club adjourned.

W. A. FISHER, President.

G. W. HENNING, Secretary.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The Club met at 1:30 P. M. Mr. Jesse Hobson was elected President *pro tem*. The Secretary read a letter from Mr. L. J. Burrell, a member of the Club, who is at present in San Diego county. He speaks in the highest terms of the adaptability of that county for fruit-growing, and says there is considerable good land that can be had as homesteads or pre-emptions. He advises those looking for small homes to go that way.

Mr. Ware, from the Committee on Sacks, reported that there was a decline in prices and advised all who could to wait awhile, as sacks would yet probably fall ten per cent. He advised farmers not having more than a hundred and sixty acres to put on an extra clipper wagon and stack their grain where they wanted their straw stacked and clear their fields at once. Then they could immediately pasture their stock on the stubble and the finer and more valuable part of the straw would not be lost in hauling together. Also, they need not then be in any hurry about thrashing, the grain might sweat in the stack, which would improve the quality.

Mr. Dubois called the attention of the Club to his improvement on the mowing machine, and requested that the Club appoint a Committee to examine the same in operation. It clears the cut grass away from that left standing. He promised the members of the Club the right to use his patent without charge. On motion, Messrs. Erkson, Lee and Herring were appointed a committee to examine and report on Mr. Dubois' patent.

The Secretary read from the PACIFIC RURAL PRESS of the 20th the resolutions adopted by the Napa County Farmer's Club and the accompanying remarks. Mr. Ware thought them remarkably good and hoped that this Club would unanimously endorse the same, which he moved. After a short discussion the resolutions were endorsed.

The question of silk was laid over till some future time when Mr. Neuman can be present. The San José and Alviso Railroad is the subject for discussion at the next regular meeting.

San José, July 20th, 1872.

The Farmer.

In a speech made to the San Joaquin county Farmers' Club, as reported by the *Republican* of the 15th, Mr. Smyth, one of the leading grain growers of the valley, pointed to the fact that the farmer was the only class of the great commonwealth who took no steps toward securing the enactment of laws for his own protection. This is true. The farmer is the victim of cliques, rings and speculators everywhere. The gentleman we have named referred to the 60,000 tax gatherers who were wandering over the land like lice or locusts, eating up and destroying the fruit of the farmers' toil; he dwelt upon the evils of laws enacted by Congress, and called attention to one of the last acts of the session just adjourned, by which the tariff on sacks was so increased that the advance will cost the farmers of San Joaquin Valley, for this season alone, the enormous sum of \$300,000. These statements can not be gainsaid. It is unfortunately only too true that during the last decade the tendency of our Government has been to aid capital and oppress labor. Within the period mentioned those who have made and administered the laws have done more to build up monopolies, form vast capital combinations, and lay the foundation of a moneyed aristocracy, than was accomplished in that direction during all the previous years of our national existence. During this period all legislation seems to have been unfriendly to the producer and consumer and designed in the interest of the middlemen—those dealers who buy from the one to sell to the other. The farmer seems to be regarded as the legitimate game of less honest but more politic men. The farmer is made to pay the full rate of taxation on his property, while the capitalist does not pay one-tenth of the amount he owes the State and county. The farmer is often doubly taxed; the capitalist never half taxed. The farmer is the dupe of everybody, and he is himself to blame for it. Taken on a voting basis the proportion of those who till the soil in the United States is as two to one against all other occupations. In other words, the farmer comprises two-thirds of our voting population. It is this fact which impels us to say that if the farmer is injured by legislation adverse to his interest it is his own fault. A farmer's lobby is about the only lobby never heard of in a State Legislature, and they take no interest in the selection of the men who go

to the Legislature and to Congress. Virtually one-third rules two-thirds—the minority makes the laws. The farmer must defend himself. He is a master of the situation if he will only arouse himself to action. There should be a farmer's club in every county, and every farmer should be an active member of his county club. Banks have directors who meet and confer as to how to make the most of their money; merchants have chambers of commerce; mechanics have unions; political organizations have central committees. Each studies and plans for the best interests of the corporation or organization to which they belong. But the farmer is unrepresented anywhere; he acts without method or system, and of course he is plucked by everybody. When the farmer learns to throw away political prejudice and resolves to vote for men of principle in place of the tools of capital; when he learns to utilize the power he is now worse than throwing away, in a manner calculated to insure the greatest good to the greatest number; when he resolves that he will no longer lend his vote for the advancement of men whose strongest characteristic is venality, then, and only then, will he have learned to be good to himself.

San Joaquin Farmers' Club.

The Farmers' Club met in regular weekly session last Saturday afternoon, 13th inst., Dr. E. S. Holden, President, in the chair. Mr. Hitchcock, chairman of the

Committee on Taxation,

Reported that it was impossible to do anything at present, as the Board of Supervisors were sitting as a Board of Equalization and could not let the committee have the documents at present. Kierski thought it was too late to do anything about the matter now, as the County Assessor had rendered his report to the State Board of Equalization. The President differed from Mr. Kierski and thought that the County Board of Equalization had power to reduce or raise the assessment of property if the evidence was adduced to warrant it. The subject of "Fertilization" was, on motion, laid over for one week, as all present manifested a desire to continue the discussion on taxation. Mr. Smyth said that his property was taxed for its full value, that is, what it is worth, improvements and all, and the improvements are taxed separately and in addition. He called that

Double Taxation,

And he made an eloquent appeal to the farmers to stand up and resist such taxation. Capt. Ketchum said that he had been taxed for land to which he had no good title, the same as he had been taxed on land to which his title was good. One member said that he understood that some of the Deputy Assessors of San Francisco had taken the assessment roll of last year and assessed property in their districts the same as it was assessed last year. The President said that the committee appointed to wait upon the State Board of Equalization would ascertain if such was the case, and would regulate the matter if so; Mr. Smyth said that the

Duty on Sacks,

Imposed by Congress at the last session, was a direct tax on the farmers of California of \$300,000, and rather than submit to such a burden he would come out "flat footed" in favor of

Free Trade.

Captain Ketchum said he was not in favor of Free Trade, but would like to see establishments for manufacturing sacks here at home, and that manufacturers ought to be protected by a slight duty to enable them to compete successfully with foreign work and goods. He called the attention of the Club to the exorbitant

Freight Charges on Grain

To foreign ports—over \$30 per ton. He said this was owing to one man having control of all the vessels in port and on their way. Mr. Phelps said that the high rates asked by shippers was caused in a great measure by the exorbitant harbor and wharf dues, and other incidental expenses incurred by vessels coming into the harbor of San Francisco. If a vessel lays there any great length of time, the expenses literally eat her up, and the owners of the vessels are obliged to charge high rates to enable them to hold their own. He thought that the harbor dues and wharfage of San Francisco, and of Stockton, also, ought to be abolished, as they work great injury to the farmers generally and to all other interests in the State, and are certainly a great restriction on commerce. This has been the means of driving the great whaling fleet of the Pacific to the Sandwich Islands, whereby the farmers of this State have lost hundreds of thousands of dollars. He thought the farmers ought to

Organize Societies.

In all the counties of the State and co-operate with each other, and by that means they could easily remedy existing evils. They could control the grain market, and the sack market, and consequently the shipping. If it is necessary to have a "Ring" let it be a "Farmers' Ring"

Harvesting Machinery.

Mr. Kerrick, agent for the "Vibrator," said that he had a machine ready for the past two weeks for some other machine to come along

and enter into a contest. He said he was, with a "Vibrator," threshing at the rate of fifteen hundred bushels of wheat per day and was saving it all. He had plenty of grain at his place to thresh, and if any other machine would come and thresh against him, he would pay them the regular price for threshing. (It was considered by the Club that the "Vibrator" was still a little ahead.) George W. Sperry called the attention of the Club to a new portable steam engine for threshing, or for road work. The engine would be at work on his farm on Tuesday next, 16th instant, and be invited all to go and see it in operation.

Subject for Discussion.

Mr. Smyth moved that "Free Trade" be made the subject of discussion at the next meeting. The motion was carried. On motion the Club adjourned.

Quite a number of citizens visited the Club rooms during the session, and all seemed to be much interested in the proceedings.

Sacramento Farmers' Club.

The club met on Saturday, at the usual time and place, President Baker in the chair.

Communications.

The Secretary read a communication from G. W. Henning, Secretary of the Napa County Farmers' Club, inclosing the preamble and resolutions, passed by said club on the 13th instant:

[The resolutions were published on page 37 of RURAL PRESS, last week.—Ed.]

After some remarks by different members, all approving the idea contained in the Napa resolutions, P. H. Murphy offered the following, which was unanimously adopted:

Resolved, That we fully approve of the propositions contained in the preamble and resolutions of the Napa County Club, and for the purpose of bringing about definite action and practical results from the plan proposed, this club would suggest to the other farmers' clubs of the State; that there be a general meeting of delegates from such clubs during the coming State Fair at Sacramento, say on the evening of Monday the 22d day of September. That each club send at least five delegates to represent it in such meeting, and the Secretary be instructed to communicate this proposition to all the farmers' clubs of the State and request their favorable action in the premises.

The Secretary also read a communication from the Santa Cruz Farmers' Club, forwarding the report of their committee on the questions suggested by the Sacramento club as to the effect of the long wet season of last winter on the crops, and especially on the fruit trees and fruit. The report states: First—That the grain had been materially injured on the low spots by water standing on it. Second—By producing foreign matter, such as cockle, cheat, smut, and other foreign weeds. Third—By fouling the soil generally and producing fine grasses and forming a sod on the surface. Fourth—By preventing the farmers from getting in their crops in season to insure a good yield. The report also states that some of the fruit trees have been injured by the water standing around the roots and causing some of the roots to die and decay. The committee recommended thorough drainage of all land subject to such low places where water may accumulate and stand, and of all orchards, as the best preventive from injury from long wet winters like the last.

Co-Operative Store.

This subject being called, elicited a good deal of discussion by a large number of the members, some advancing the idea that it would require at least a capital of from \$50,000 to \$75,000, and that such an enterprise would have to compete with the heaviest houses in town, which would combine to break it up. Others take a very different view, and claim that a co-operative store should be organized, not with an idea of making money, but simply to save for the stockholders the profit that the traders now make off of their purchases; that the stockholders should be sufficiently numerous to furnish a good run of custom to the store; and that just enough profit should be charged on all goods handled to pay the rent of a building and the salary of a business man, and other incidental expenses, such as freight, drayage, etc.; that when a co-operative store was properly managed and its business confined to those interested in it, no competition or combination could be brought bear so as to affect it. That it was simply a plan to save the consumer the usual profits of the trader and secure him against unusual profits extorted from him by "rings" and "corners" and combinations of capitalists, and as long as its business was confined to its proper limits and purposes, there could be no chance for breaking it up. The latter view prevailed with the club, and on motion, a committee of seven members was appointed to procure a constitution or set of rules for the organization and management of such a store. The committee consists of I. N. Hoag, E. F. Aiken, C. W. Hoyt, A. S. Greenlaw, J. R. Johnson, W. S. Manlove and P. H. Murphy, and they agreed to meet at the rooms of the club on Saturday next at 12 o'clock M. for consultation.

Fruit Depot and Shipping Agency.

The committee appointed at the last meeting to digest a plan for the establishment of a fruit depot, decided to call a meeting on Saturday next at 10 o'clock A. M.

Solomon was undoubtedly right in saying that a double-minded man is unstable in all his ways.

AGRICULTURAL NOTES.

CONTRA COSTA COUNTY.

Gazette, July 20: ANTIOCH (CORRESPONDENCE).—The good Lord has blessed this end of the county this season in bread crops—good health. We feel very much comforted and disposed to crow. You cannot get tute potatoes straight, or sturgeon on the half shell now, unless by special request at Carman's. Last year if we got anything else we owe for it yet. Grain crops are fair. They could have been better, but they beat nothing so much, that we think we have done well. The Point of Timber and Eden Plain sections have yielded about fifteen sacks to the acre; near around Antioch about ten, as far as heard from. Some pieces has turned off as high as twenty sacks, on the east side of Marsh Creek and immediately about Point of Timber, but the average per acre is not higher than I have stated, and it is of a fair quality—a little sunken by those hot days in a few places only. It is now coming in at a pretty lively gait, and stacking up on the wharves as it did three years ago. But the sales are compulsory so far—the price having fallen so below expectations that those only will sell who are compelled to.

Unfortunately for our farmers, they are so in debt to the local merchants that many of their crops will be absorbed in old debts, and the next season will have to be provided for in scant and credit. But "Hope, the anchor of the soul, both sure and steadfast," comes in with a consolation even to this class. The deep moisture is abundant, and will not so evaporate in the season as to require so much rain for even better crops another year than this, and so we hope to get another deal with a small rain-fall if it so must happen—say 12 to 15 inches. The lack of tonnage at a living rate to the farmers to move their crops to market, seems to be the trouble about prices, which time and competition will have to regulate. But little barley was sown, and all of it will be wanted for local needs.

Johnson & Spaulding, of Benecia, have about 100 acres planted in castor beans on the Marsh Grant, and they are now from eighteen inches to four feet high, and flowering in promise of a paying yield. The owners anticipate a return of sixty dollars per acre. The cost of producing and gathering is a little greater than Indian corn.

EL DORADO.

Democrat, July 20: THE FRUIT HARVEST. The road across the summit is now open and in fine condition. Wagons conveying tons of apples and pears of the early species are almost daily passing through the city en route for the Nevada market. The peach crop, effected by the late frosts, will not be so abundant as it would otherwise have been, but fruits of all other kinds grow in the foothills will not be less in quantity, but rather more than last season. That one man after a spasmodic effort of a few months, should have sold out and emigrated from these parts is no reasonable evidence that our climate and soil are not adapted to agricultural purposes. There are hundreds, on the contrary, who are successfully engaged in the production of fruits, grains and vegetables, better than which no part of the coast can boast. Let any one make a tour of inspection among the ranches of El Dorado county, at this season, and "seeing will be believing" that our assertion is true.

THE SOAP-WEED TRADE.—Allusion has been made in previous issues of this paper to a new and profitable resource of our county. We have reference to the large quantities of soap-weed which of late has been utilized in the business of upholstering, etc., and which abounds in great quantities in the northern and northeastern parts of El Dorado county. Tons of it are being gathered, and pass through this city almost daily to market. It is said to be far superior to pulu in the construction of mattresses. Our enterprising and live business man, L. Landecker, has thirty-two men now engaged in gathering it, with an increase of ten more to be put on during the coming week. Parties in San Francisco not long since contracted with him for the delivery of 400,000 lbs.—280,000 lbs of which has been delivered. They have now ordered all that can be obtained.

LOS ANGELES.

News, July 13: SALE OF CATALINA ISLAND.—The largest land sale ever effected in this county was made on the 19th of this month as appears from the records at the County Clerk's office. The property disposed of in the indenture, which is an agreement to convey within twelve months from its date on payment of consideration,

embraces the whole of Catalina Island, opposite San Pedro bay. The consideration for which Mr. James Lick, of Santa Clara, has agreed to convey this island, is \$1,250,000, the largest sum ever paid for any piece of property within this county. Gov. John G. Downey, Don John Foster and Max Strobel are the purchasers. This island is now used for grazing, affording a fine pasturage for thousands of sheep. The prospective value of the island consists of its undeveloped mineral deposits, among which there are numerous veins of argenteriferous galena of great richness. It also contains some of the most valuable deposits of copper ore on this coast. All these mineral deposits will sooner or later be worked, enriching the adventurers and benefitting the entire country.

MONTEREY.

Argus, July 20: SOME POTATOES.—Mr. F. D. Hall, near town, on the lower Salinas stage road, has a fine field of potatoes as we remember to have ever seen. It is one hundred and ten acres in extent, and the plants look splendidly, promising an enormous yield of this favorite fruit. Mr. Hall's success is owing solely to the exercise of a little hard sense. Knowing that the same kind of seed sown in the same kind of soil year after year, is bound to deteriorate, he went to the trouble and expense of procuring fresh seed from Humboldt; and the result of his shrewdness has surpassed his expectations. In all of which lies a moral which our farmers would do well to ponder over.

Aptos ranch, Santa Cruz county, has been sold for \$80,000 to the San Francisco Sugar Refinery. Beet sugar is to be manufactured on the ranch.

NAPA.

Register, July 20: ANGORA GOATS.—On Thursday evening one hundred Angora ewes passed through town on their way to the ranch of their purchaser, Mr. S. Wing. The goats were raised by ex-Gov. Andrews near Stockton, who is quite extensively engaged in the business. We examined some shed hair from a goat of this herd, that is almost equal to the pure, full-blood. It was about eight inches long, and felt almost as solidly as a woven fabric. Such hair sells readily in the market for from \$1.10 to \$1.15 per lb. These animals being so easily kept, so free from disease, and yielding so abundantly, about 8 lbs. per head, are certainly very profitably. We congratulate Mr. Wing on his investment.

WHEAT PROSPECT.—Mr. Chapman, whose thresher has been running in the vicinity of Oakville, reports the yield very light, the average being over ten or twelve bushels per acre. From other parties we learn that the yield in the lower end of the valley, and in this vicinity is somewhat better, but will not average above 16 to 18 bushels.

SANTA BARBARA.

Press, July 20: HILLSIDE FARMS.—Only a few of our more sagacious farmers have learned the value, nay, rather the superiority of our rocky foothills for many agricultural purposes. Indeed, lands quite upon the mountain side, apparently utterly worthless, are found to be exceedingly fertile and particularly adapted to a valuable class of productions. It is impossible to convey to those who have not investigated this matter any adequate conception of the undeveloped wealth and luxury which lie untouched on our mountain side and our foothills. Then, too, for rosy health and delightful scenery, these picturesque locations exceed all others, in a region justly celebrated for its climate and scenery.

NOT IRRIGATED.—It is hard to impress upon the people at a distance that no one pretends to irrigate crops and trees in this part of the State. Cultivation is found to be ample for everything unless it be oranges and lemons. This saves a great expense and prevents fever and ague entirely, to which people are always subject in parts of the State where irrigation is practiced.

SUGAR CANE.—The Sandwich Island Sugar Cane on Capt. J. Mayhew's farm on the mesa or high land west of town a mile and a half, is now two years old, with finely formed canes, and bids fair to prove perfectly adapted to this soil and climate. It is easily propagated from cuttings and cultivated as conveniently as corn or potatoes.

SONOMA.

Flag, July 18.—TALL TIMOTHY.—Robert Finley brought to this office a few days since some specimens of timothy grass grown on his ranch on Russian River about six miles below this place, which measured five feet and ten inches in height, the head measuring thirteen inches. Mr. Finley is well satisfied with the experi-

ment of raising timothy. He sowed a piece of bottom land to this grass one year last December, cut a very fair crop of hay last year and has now a very heavy crop ready to cut. He thinks it superior to alfalfa or mesquit grass for hay and a much better dressing for impoverished land.

Isaac Long, of Big Plain, is also successfully raising timothy. There appears to be no reason why our farmers generally may not make the production of timothy hay an important feature of their industry, and at the same time give their land a needed rest.

SAN JOAQUIN.

Argus July 20: THE COTTON FLY.—The ravages of the fly in our Merced cotton fields this season have proved quite serious, though we are pleased to learn from Col. Strong that these pests are not so numerous or destructive to the young squares and buds as they were earlier in the season. The weather so far this season has been unfavorable; the nights being rather cool at times for the successful fruiting of the plant, consequently the stalks are not so full of balls as they should be, though competent judges express the opinion that if the weather is favorable throughout the month of August a bale to the acre can be picked from Col. Strong's plantation.

A FIELD on Lewis creek, Tulare county, of 440 acres, yielded 15,080 bushels of grain. The field had no fence, and the ground was not irrigated.

Independent, July 22: WHEAT SHIPMENTS. During the week ending last Saturday, J. D. Peters made the following shipments of wheat: Per railroad to Sacramento, 110 tons; per railroad to Oakland, 790 tons; by vessel to San Francisco, 1,131 tons. During the same period Thomas A. Crawford, who ships for Smith & Crow, sent away 566 tons, by sailing vessels to San Francisco.

RIVER STEAMERS.—The steamers Harriet, Clara, Belle and Fresno, from the San Joaquin river, arrived Saturday evening each with a cargo of wheat. A large proportion of the wheat is for storage in the city.

LARGE BARN.—John Southerland is having a large barn erected at his slaughter house, a short distance north from the city. The building is fifty feet wide and two hundred feet long, and around the entire building there is to be a shed ten feet in width.

UP RIVER FREIGHT.—The large barge Aliso loaded last Saturday with an assorted cargo of merchandise, for farmers along the upper San Joaquin.

YOLO.

GRAIN MOVEMENTS AND PRICES.—Wheat comes in very slowly considering the quantity raised in this vicinity, but the scarcity of laborers and threshing machines prevent the farmers from getting their grain ready for market. The price too, is discouragingly low. Messrs. Thomas & Hunt, the principal dealers, are paying \$1.30 for clean wheat. They have now at the depot awaiting the slow movements of trains, about 500 tons, and next week they expect to have 1,000 ready for shipment. Their warehouse is filling up slowly.

GOOD WHEAT.—Leonard Babcock, of Hungry Hollow, sold to E. H. Eastham, of the Cacheville Mills, one thousand sacks as fine wheat as is raised in Yolo county, realizing a good price therefor. Mr. Babcock is one of those first-class farmers who understands his business. He takes great pains to sow pure seed, and has his grain well screened in threshing, so that there is nothing but wheat left.

YUBA.

Appeal, July 21: AMONG THE FARMERS.—Yesterday we took a ride in the country, along the Feather river or Oroville road, as far as the Bit House, in company with Frank Blue, the proprietor. The grain fields have been shorn of their golden treasures, which is now piled in huge stacks awaiting the thresher. Within a circle of three miles we saw three threshers at work, and there seems plenty of work for twice as many more in the neighborhood we visited. We first went to the ranch worked by Joe Elliott, where we found the thresher of Genella & Ruple at work. Mr. Elliott has thirty stacks of white Chili wheat and seven of barley, cut from 340 acres. About forty acres was not harvested, the water standing on it long enough to destroy the crop. From the remaining 300 acres he will harvest upwards of 5,000 bushels of wheat, besides the barley. The wheat is of excellent quality, large, heavy and entirely clean, free of weeds, chaff, etc.

On General Row's place the threshers were at work in the morning, but closed

their labors at noon and started for another farm. The General's foreman could not enlighten us regarding the yield or the number of acres planted, as he does not yet speak much only in his mother tongue—Chinese. The bottom lands along here are covered with corn, which promises a heavy yield.

Mr. Van Vranken, whose farm lies adjoining the General's, has over a hundred acres planted in this grain, and it is as fine a crop as a farmer would wish to have. It stands from ten to fourteen feet high, and it is estimated that the yield will be from eighty to one hundred bushels per acre. It is now in bloom, with the ears handsomely formed and "silked."

We next went to the harvest field of Danville and Bliss, where Graham's thresher was in operation. This gentleman, unable to obtain civilized help, employs a gang of Chinamen on the stacks to provide straw for his machine. He does not find them profitable at all. One good white man is worth three of such Celestials as we saw pitching on the stacks. He is paying them \$2 per day and they are already clamoring for "two dollars hap." Messrs. Danville and Bliss have in this field 200 acres of white Chili wheat planted on new land, "grubbed" and planted last winter. The growth of straw was very large, and the yield of grain will probably average 30 bushels per acre of excellent wheat.

MONTANA.

Gazette, July 9th: THE CROPS.—We have made particular inquiry and observation concerning the prospective grain crop of Montana, and we have come to the conclusion that it will be the largest and best this year that has ever been produced in the Territory. This is an auspicious event in anticipation of the increase of population to this country, and in view of the early work that will be done on the railroads now about to enter our Territory. We shall have a good supply of grain to answer the demand, and this should be held in reserve by prudent farmers 'till it is needed. When grading once begins it requires a vast number of work animals, and these must be fed on grain. Every bushel of oats, wheat and barley will be needed to supply the market, and it is a good thing to have plenty on hand.

OREGON.

Willamette Farmer, July 13: GRAIN CROPS.—The recent rains have been of great value to the grain crops of this valley. From every direction come encouraging reports of its effects. Those who before the rain had abandoned all hope of more than half a crop, are now jubilant over the prospects before them of the usual full crop.

During the late month of May a single house in Portland sold agricultural machinery to the value of \$176,000; the sales of another house for the same month aggregated \$100,000, and the sales of others in that city were large enough to bring the total of business in agricultural machinery in the city of Portland for the month of May only, to three hundred thousand dollars. Outside of the city of Portland there are dealers in this same line, and some importations are made into Southern Oregon via Crescent City and other ports, which swell considerably the sum total.

ALFALFA.—Mr. J. N. Durham, residing two miles north of Salem, has shown us a sample of alfalfa clover, grown on his farm, the longest stem of which is six feet two inches in length.

THE SUN'S BLESSING.—Sleepless people—and there are many in America—should court the sun. The very worst soporific is laudanum, and the very best is sunshine. Therefore it is very plain that poor sleepers should pass as many hours in the day in sunshine, and as few as possible in the shade. Many women are martyrs, and yet do not know it. They shut the sunshine out of their houses and their hearts, they carry parasols, they do all possible to keep off the subtlest, and yet most potent influence which is intended to give them strength and beauty and cheerfulness. Is it not time to change all this, and so get color and roses in our pale cheeks, strength in our weak backs, and courage in our timid souls? The women of America are pale and delicate; they may be blooming and strong, and the sunlight will be a potent influence in this transformation. Will they not try it a year or two and oblige thousands of admirers?

For fragrance, nothing equals the Mignonette, Sweet Alyssum, Sweet Pea, Erysimum, Stocks, Pinks, Picotees and Carnation. Nearly all the lilies are very fragrant, and of some of them the perfume is almost overpowering.

HOME AND FARM.

San Joaquin Farmers' Club.

Essay on Fertilizing—By the President, Dr. S. Holden.

The great object in our weekly meetings here is, by attrition of mind with mind of a comparison of the results of our labor, and for the interchange of knowledge, to enlighten and to increase the results of toil and practical experience. The question before you to-day, gentlemen, is Fertilizing, a very important question for all farmers here or elsewhere to settle satisfactorily. This question has a wide scope. It suggests many experiments, ideas and theories. Farmers of this State will soon be obliged to settle this question and profit by it, else to change their occupation.

It is well known that perpetual cropping or many consecutive years of cropping grain, or other products, without fertilizing and rotation of crops, exhaust all soils however fertile they may have been at the commencement of cultivation. This ruinous system of continual cropping is now being well understood, and it may be here superfluous; yet, it may not be a loss of time at this moment to extend the subject.

Fertilizing soils for the purpose of keeping up the original quality, or increasing its productiveness, has for ages been practiced by tillers of the soil, and for the last century many notable, scientific men, and hundreds of other less scientific yet experienced and practical in the knowledge of tillage and the use and benefits of fertilizers, have written hundreds of volumes upon this subject. Yet, how few are benefitted by this very important knowledge, from the fact that farmers and cultivators of the soil will not read them; in other words, they say let Nature take care of itself. We will not return to the soil the elements that we exhausted from it by a long and miserable mode of tillage. This unprofitable system has not only cost the farmers, or a large per cent. of them, a laborious existence, but hundreds of millions to all sections of the world, in the yearly loss of the materials that create our wealth and freighting ships to all the marts of the globe. Farmers of this day need not, and cannot afford to lose their crops, particularly in California. The sad experience here since 1869 should be a sufficient warning, and should stimulate farmers to a better mode of cultivation, to summer fallowing, fertilizing, and a system of irrigation, which for the immediate present is the best and cheapest fertilizer when judiciously applied. There is no profession that needs more varied intelligence, more nice and close observation, more study and perseverance, than that of the farmer. He should be a reading and thinking man as well as a laborious working man. It is a lamentable fact, that the agricultural profession is less understood and is farther behind in useful and practical knowledge, than all other professions. Did the husbandman understand his calling as he should, did he devote his leisure time to study, to reading agricultural books, papers and periodicals, works on vegetable physiology, the nature of soils, fertilizers, irrigation and everything appertaining to cultivation and the farm, he would soon create a taste for such information which would soon become a habit not easily parted with, a habit both instructive, profitable and amusing.

If farmers would exercise the same perseverance and energy in acquiring intelligence that members of other professions do, they would soon elevate themselves to position, and fill places of high and honorable trust that are now denied them. Mark the difference: From the mechanical professions, hundreds of thousands of the most notable and conspicuous men have risen, yet how few similar characters have come from rural life—from agricultural occupation. It is a mournful fact, that thousands of farms in this country and the State are fast deteriorating from years of grain cropping, although farming here is yet in its infancy, the soil just disturbed and none of it is fertilized, excepting a few garden spots. This is radically wrong. It is an innate principle with all parents and their first wish to transmit an undiminished legacy to their children or posterity. Under the present mode of farming, as a rule in this State, the farm will leave but a poor legacy.

In no part of the Union is farming carried on with more science or experience than in the New England States; yet, by negligence in cultivating and fertilizing, the soil has so deteriorated that it is estimated by high authority that it would cost the enormous outlay of one thousand millions of dollars to repair the effects of a wasteful and exhaustive system of cultivation. Farmers in this State cannot afford to follow too long this exhaustive system. Perfect cultivation, fertilizing, and a system of irrigation must soon be adopted, as agriculture is the base upon which all our interests rest. It is computed that nine-tenths of the wealth of the world is produced from the soil. It is also computed that should all the wealth of the world be annihilated, an equal amount could be produced in five years. This may seem a wild statement, yet, if the members of this club reflect a moment, or acquaint themselves with past history how the loss of one crop even, in any section of the world has produced in misery and finance, and how soon these sections recuperated by a successful crop, will not be surprised at this statement. Hundreds of instances in this country even, could be named to prove this statement, hence the necessity of good cultivation, fertilizing, and a judicious system of ir-

rigation. With these three systems brought in to practical use, the farmers of this State can bid defiance to most of the causes of the loss of yearly crops.

It is within our recollection, and is worthy of note, how, as one evidence of a proof of the sudden recuperation of any country by a year's successful crop, that a few years since, Ireland lost her potato crop. By this loss a famine was produced, and hundreds died of starvation. The United States sent a man-of-war laden with provisions to save the starving population from death. The following year Ireland became prosperous by a good potato crop. In India a few years since, a drouth caused the loss of vegetation, which caused the death of more than 100,000 persons. To prevent another calamity of the kind the English Government expended hundreds of thousands of pounds sterling, in constructing ditches to convey water for irrigation, thus completely obviating all danger of a famine. This is one instance, and only one of thousands that could be mentioned, and is sufficient evidence that water is a necessary fertilizer. Irrigation on one million of acres in San Joaquin valley, judiciously applied, will make this extensive valley a Garden of Eden.

The Western States have been noted for their wheat product until within a few years, the yield averaging over twenty bushels per acre, now yielding less, as an average than ten bushels per acre. Constant cropping, without fertilizing, is the cause. The soils of England and Continental Europe, for several centuries, with but few exceptions, produced very limited crops, the soils having been almost completely exhausted by constant cropping and not fertilizing. By the influence of agricultural societies and schools which are now scattered all over these countries, they have produced within a few years a scientific system of cultivation, and to-day we are reaping profitable rewards for their influence and practice.

The following few facts of the hundreds and thousands even that could be named, exhibits the enormous amounts annually paid for fertilizers in the Eastern, Western and Southern States. Imports of guano in 1870, amounted to 387,585 tons, valued at \$5,992,325. Shipments of fertilizers from Chicago last year was 6,000 tons. During four months in 1870, 30,000 tons was sent by rail from Charleston, (S. C.), to various sections of that State. About the same period there was sent by rail to Georgia, 47,000 tons, bearing a value of \$7,000,000. In New England, barnyard manure is an article extensively used, combined with ashes, lime, gypsum or guano. A member of a farmers' club in Massachusetts stated that he had used within three years 30,000 bushels of ashes on 100 acres of land and increased his crops of wheat and corn over 100 per cent. In some sections of Germany where wood is scarce and dear, it is customary for the common people to club together and build baking ovens, which are heated with straw and wood. The ashes of this straw are carefully collected and sold at high prices. The farmers there have found by experience that the ashes from straw form the very best manure for wheat. The straw of wheat grown in this way, possesses an uncommon strength. The cause of the favorable action of these ashes will be apparent when it is considered that all corn plants require silicate of potash and that the ashes of straw consist almost entirely of this compound. The well known fact that ashes are a very perfect and valuable fertilizer for wheat, proves to our wheat growers that two important uses for straw can be made, one to fertilize and the other a fodder for stock.

In England, millions of pounds sterling are yearly expended for fertilizers. A similar practice is now adopted in the New England States, and with a wonderful advance of increased crops; also in all the Atlantic States. This process of expenditure for fertilizing is carried on without regard to cost, from the fact that fertilizing is a necessary outlay to produce sure and profitable crops. The crops of grain in England have advanced within a few years from eight or ten bushels to the acre, to thirty, forty and seventy bushels to the acre, and a similar increase in all varieties of products.

Look for a moment, farmers, what England has done within a few decades. By English statistical statements, the value of the soil devoted to agriculture comprehended the twenty-sixth of the total wealth of the Kingdom; that the value of England's agricultural soil was nearly twelve times greater than the whole capital invested in manufactures and commerce; that money employed in her agriculture comprehended more than three-fourths of the capital of England; that the manufacturing and commercial capital of England, including her ships, constituted but about one-eighth of her national wealth; that the agricultural capital of England, which is over \$16,555,000,000 produced a gross income of thirteen per cent. while the manufacturing and trading capital, which is but \$1,000,000,000, yielded nearly a gross income of 120 per cent. It is that magic capital of \$1,000,000,000 invested in machinery, mills, furnaces, factories, and mines which has swollen the farming capital of little England into the gigantic sum of \$16,555,000,000, and made a British farm worth ten times as much as one in a wheat growing country. The manufacturing of England have doubled and trebled her wealth and population and sustained her immense commerce, built, equipped and manned her countless ships and thus directly and indirectly increased the demand for and raised the price of food and raw materials, and run up the value of her agricultural soil to the quality of garden ground all over the kingdom. Eng-

land, France and Germany have set a good and positive example for California. Raise mixed crops. Produce the raw materials, for export or home manufactures and less wheat. Therefore the necessity of manufactures in this State and raising mixed crops, such as hemp, flax, ramie, cotton, the grape, almonds, trees for timber, and wood and other varieties not now in my mind.

The reading of the above essay was listened to with great attention by the members. The essay demonstrated the fact that the Doctor's time is not wholly given up to the work of compounding drugs, but much of it is occupied with other subjects equally important. If "what I know about farming" is an essential qualification for President of the United States, the President of the Club, by the rule of merit, is entitled to become President of the People. On motion, a vote of thanks was tendered the Doctor for his able and interesting essay. On motion the Club adjourned.

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

Do you suppose one half the California farmers can tell whether they have a yearly income, or can show the exact figures that prove whether they make both ends meet, or do a little better or a great deal worse than that? It was almost comical to suggest that the wife should have at her disposal one half the yearly income, when in fact (with very few exceptions) the whole science and business of farming goes on in a scrambling, irresponsible way—the husband in a chronic fret about the interest due on that mortgage—the wife wrinking her brows over the problem of store-bills and all the crowding necessities of work-a-day life, while the children grow like weeds and will soon be peering among all this chaos for their own rights of manhood and womanhood. Yes, here are the children and what shall be done for them?

Importance of Keeping Farm Accounts.

Let them wait a minute while I suggest to father and mother the pressing necessity of getting a tight rein over all this disorderly business. Don't let it run wild any longer. Get some books—account book, cash book—the bigger the better, perhaps, and put everything down in as good shape as possible.

In the early days when young California did a "big business" everywhere, I was frequently called upon to help post the books of one "concern" and was joyfully surprised to find how quickly and easily I could understand it all.

Here on the farm, my husband has a cash book as big, as heavy, as "calf-bound" as the old one of early times; but there is a comical difference in the character and amount of entries.

Yet the moral influence of the ponderous book is not at all laughable, for when it comes down with a thud, I see the children's thoughtful eyes scan the mysterious pages and doubtless an impression is forming that business in the country may be quite as dignified and important as in the town. And so it may be and should be.

If you are not scientific book-keepers to begin with, never mind; your earnest efforts will be followed by better and better results, and the end of the year will show—a balance to your credit let us hope—but at least there will be formed a good business habit, worth as much to a man as the farm itself.

And to the Woman Too?

Yes, it is just here she will find one of her most important rights, and learn more clearly how to adjust all home interests. We will suppose the books brought out every Saturday evening; and the wife setting quietly by with stockings to darn, little breeches to mend, or the baby to tend, can still keep an eye on the "figures," help in the spelling of hard words, or decide a difficult point in that bargain with neighbor Jones. Let no farmer imagine that the books are too puzzling for his wife to understand. Let him rather remember how necessary it is that she comprehend all details of business, not only for the sake of her intelligent sympathy in the ups and downs of fortune, but to fit her for the skillful management of affairs in case he should be struck down by disease or death.

Careful book-keeping is the surest preventative of foolish expenditure; and the wife who is best informed upon all matters of income, outgo, profit and loss, is the wife who is the best satisfied with her own position in life, best pleased with her husband's management, least anxious to seize and control all home and foreign affairs. For if she thoroughly understands the whole business of the farm, you may be sure she is by no means a silent partner. Her influence and judgment have helped and modified in all directions, and the consciousness of this blended power strength-

ens and sweetens her womanly character; so "the heart of her husband doth safely trust in her," although he may be wholly unconscious that he is using her brains in the business as well as his own.

A man who is reticent, selfish or jealous of power, will not tell his wife about business, or only enough to mystify and mislead her, believing that she would make a terrible bother if she really understood his affairs. So she gropes along in a thick financial fog—almost sure to go wrong when most earnestly wishing to go right. Hearing that neighbors make certain hundreds from the sale of wheat, or cattle, or wool, she concludes that her husband ought to have as much or more, and immediately all her clothing and furniture looks shabbier than ever before; she counts how few silver spoons she has got; how much crockery and glassware are needed to fill the shelves; and resentfully reekoning all the deficiencies that worry and wear her life away, she has presently a heart full of wrath and bitterness against the husband who hoards his money and defrauds her happiness.

Now perhaps he has not a single dollar hoarded, nor many dollars carelessly wasted; but all strictly in the business and duly swallowed by "contingent expenses." If the blind, mistaken man would only tell her this—go carefully over the figures that prove it, and explain all his hopes and plans—why, the tears would be in her eyes in a minute, and giving him a shy kiss she would cry out, "Oh, John! I thought you was real mean and stingy, but now I can be patient and contented till you bring things around right."

If he is man enough to like to hear her say, "till we can bring things around right"—then all the happier for both of them.

There are many reasons why the farmer and his wife should cultivate harmony and mutual happiness in everything that concerns their secluded little world. The lack of social spice and variety forces them to give much attention to little events, little troubles and vexations; and the monotony of all these trifles become very wearing unless met with unflinching cheerfulness and tact. But if good sense and sympathy are needed to smooth the fret and friction of business cares, how much more are they needed

In Behalf of the Children.

Perhaps it is from lack of thought, but a great many farmers make a woful mistake in this matter of raising children.

They regard the boys and girls as so many rough little cubs who must be fed and lodged somehow till they are old enough to "put out" and take care of themselves. No such pains-taking enthusiasm goes into their training as is often bestowed upon a promising young colt; and anything said in favor of careful education is apt to meet the retort—"What! the young ones? Guess they'll do if they're just let alone. Will have as good a chance as I ever had, anyhow." But human "stock" is improving very rapidly, or rather there is more demand for a choice article. Nature may be furnishing about the same stuff as formerly, but each generation becomes more exacting as to results; and your children will be a great disadvantage if they can only start where you did 20 or 30 years ago.

Many of us look back upon childish years that went on "pretty much as it happened," no one seemed to take especial thought for our happiness or our habits. We had our tasks to do—our weeks or months of schooling—our serious holidays of church and Sunday school—Fourth of July, Thanksgiving and Fast day.

All these sober-going influences (and we cannot reproduce them in California for our own children) have made us what we are; if not suited with the results we must still accept and make the best of it. If happily we are at peace with ourselves and satisfied that the material furnished by Nature has been made up to the best advantage, we may perhaps still perceive that the child-years might have been a great deal happier and brighter if some one had taken thought for us; and we know that the awkward start in life—the blundering distress of various first appearances in the great, cold world might have been avoided if the straight and narrow youthful way had been a little more flowery and sociable and diversified.

Yet Puritan training has done so much for us, we easily forgive its stern repression of youthful gaiety, and all the more easily if we find ourselves not permanently frost-bitten from that untimely nipping of buds.

But I shall further invoke childhood memories while making a special plea for our own farm children.

USEFUL INFORMATION.

Sharpening Edge Tools.

There is a common saying that a good workman is known by his tools, and it is certain that many a young mechanic is hindered in acquiring skill in his trade by too little attention to this excellent maxim. The following simple rules, from the *Young Mechanic*, will be of aid to inexperienced workmen, and, perhaps, to some older in the profession, in telling how tools should be treated:

There is no operation in which the young mechanic is so much at fault as in that of grinding and setting in order the various tools he has to use. Nevertheless, he will never become either an independent workman, or a good one, if he has to depend upon others for this necessary labor.

No doubt, to sharpen a tool which is in very bad order, is a tedious and tiresome job; but it is not so wearisome an affair to keep tools in condition for work, after they have been once thoroughly sharpened, by one who understands how to do it. Never, therefore, use a blunt tool but at once go to the hone or grindstone with it, and put it in first-rate order. Time thus employed is never wasted, but rather saved; and the result will appear invariably in the work which you are engaged upon. You must, in the first place, understand precisely what it is you have to do; and although the following details may be by some considered more adapted for advanced students than for young mechanics, a little attention to the explanations will render the matter clear to any boy of age and intelligence to take in hand, with reasonable prospect of success, the tools of the carpenter, turner, and fitter.

Now all tools, if well ground, are ground to a certain known angle, according to the material which they are intended to cut. Tools intended to cut soft woods, like deal, are ground to an angle of twenty or thirty degrees, like the chisel seen edgewise. I shall have a word to say presently as to the direction in which such tools are to be held in order to make them cut as well as possible. A tool for hard wood is ground to an angle of at least forty, and it ranges up to eighty degrees, giving a stronger, thicker edge, but not so keen a one. We have, therefore, more of a scraping tool than a cutting one, at least, in the way it is usually held. Then we come to the tools with which iron is turned, and steel also. The usual angle is sixty, thence it ranges to ninety degrees. Thus, you see, advancing from soft wood tools to those for hard wood, and thence to a substance still harder, we have increased the angle of the edge, beginning at thirty and ending with eighty or ninety degrees. But now we come to a material which is harder than wood, and not so hard as iron, yet we use tools with an angle of ninety degrees, which is still greater, and seventy degrees is the least angle ever used for this metal.

Experience only has taught the proper angles for tools, and it is found that if brass and gun metal are turned with tools of a less angle than seventy degrees, they only catch into the material, and do not work at all satisfactorily. You can, however, scrape brass, as a finish, with the thin edge of a common chisel; but theretofore the tool is held so as to scrape very lightly and polish, and its edge will not remain many minutes, unless the maker (intending it to be so used) has made it much harder than he would make it for soft-wood cutting.

If you buy your tools at any good shop, you will find that they are already ground to nearly the angles named, and when you re-grind them you must endeavor to keep them to the same. The bevel, as it is called, of many tools need not be ground at all, as they may be sharpened solely by rubbing the upper face on a hone, or grinding it, holding it so that the stone shall act equally on all parts of it. If, however, the tool should become notched, you must grind the bevel of it, and then you must try and keep the intended angle.

One tool, however, or, rather, one pair of tools, viz., turning-gauges and chisels, are very seldom ground with a sufficiently long bevel when they first come from the maker. This you must correct when you first grind the tools for use, and keep the same long bevel and small angle of edge continually afterwards, for you will never make good work on soft wood if your chisels and gouges are ground with two short a bevel. I must also guard you against another common error, which, however, is difficult to avoid at first, and only long practice will enable you to overcome it. The bevel of all tools must be kept flat and even, and when the tool is afterward rubbed on the oil stone to give a finish to the edge, another flat even bevel should be made.

VORACITY OF THE PICKEREL.—The rapid growth and extraordinary voracity of the pickerel are well shown by Dr. Sturtevant in the report of the Massachusetts Inland Fisheries Commissioners. The doctor investigated their powers of eating in the following manner:—He put two young pickerel, five inches long, in a trough with a great quantity of little minnows about one inch in length; and these two pickerel ate 128 minnows the first day, 132 the second, and 150 the third, and they increased one inch in 48 hours! They were mere machines for the assimilation of other organisms. It is to be hoped that this wolf of the waters may never be introduced into our California streams.

The Development of the Lobster.

According to Mr. S. J. Smith, in the *American Journal of Science*, the first stage of larval life finds the little animal a free swimming schizopod, about a third of an inch long, without any abdominal appendages and with six pair of legs, to which are attached powerful swimming organs. The eyes are bright blue, and the body is orange to reddish orange in color. The stage shows an increase in the size of the little second animal, and a development of a portion of the abdominal legs, with other and less important changes. In the third stage observed, the animal has become half an inch long, the anterior legs have largely increased in size, the second and third pairs are furnished with claws, the abdominal appendages have become conspicuous, and the "pockets" have appeared, though they yet differ from those observed in the adult. The fourth stage finds the young lobster three fifths of an inch long. It has lost its schizopodal features and has become to all intents and purposes, an actual lobster.

It is still, however, a free swimming animal, moving through the water very rapidly by means of the abdominal appendages, and darting backward when disturbed, with the tail, frequently jumping out of the water like a shrimp. It is probable that there is yet another stage of development before the complete lobster is reached. From the data obtained, it is also probable that these changes all take place in the course of a single season.

THE TIME PLANETS WOULD TAKE TO FALL INTO THE SUN.—M. Flammarion makes the following remarks, on this subject, in *Les Mondes*: Supposing the Earth to be arrested in its course, and the centrifugal force thus destroyed, the Earth, being left to the first force, would fall to the sun with a uniformly accelerated motion. It would take about 64 days in its fall, and would reach the sun with the inconceivable velocity of about 360 miles for the last second. The following are the figures obtained from a calculation of the time the planets would take to fall to the center of the sun, supposing their motion to be arrested.

Mercury.....	15-55 days.
Venus.....	39-73 "
Earth.....	64-57 "
Mars.....	121-44 "
Jupiter.....	765-87 "
Saturn.....	1901-93 "
Uranus.....	5424-57 "
Neptune.....	10623-73 "

INCREASE OF TEA DRINKING.—A late number of the *London Grocer* publishes the tea statistics of the United Kingdom for the seventy years. In 1801, the quantity of tea consumed was 11,865 tons, the average price of which was four shillings two pence half penny per pound, making the yearly amount drunk by each person (man, woman and child) in the Kingdom, average one pound eight ounces.

In 1871, the consumption had risen to 61,701 tons, but the price had fallen to one shilling, ten and a half pence per pound. The taste for tea appears to have increased in the same ratio as its cost decreased, as in the last mentioned year the average of each individual was three pounds fifteen ounces.

FACTS ABOUT TACKS.—The length of tacks, as understood and given by the manufacturers, is by the "ounce," which is printed on the label, and stenciled on the box or package in which the goods are placed for transportation. "Three ounce" (3 oz.) means that the package so labeled contains tacks three-eighths inch long and that for every three ounces of tacks of that length there should be 1,000 tacks. Four ounce would be seven-sixteenths inch long; six ounce, eight-sixteenths; eight ounce, nine-sixteenths inch long, and for each "full-weight" package thus labeled there should be 1,000 tacks, and so on up to twenty-four ounce, which likewise is equivalent to one and a quarter inches long, and 1,000 tacks.

PROFESSOR GUNNING claims that the Niagara river has been in existence about 200,000 years—that a barrier thirty feet high at the head of the rapids would throw the water back into Lake Michigan. He accounts for the drainage of the lakes before the formation of the river by a channel which extended from Lake Michigan to the Mississippi.

IMPROVED LETTER ENVELOPE.—An improved Letter envelope has been patented, which might be very useful to forgetful persons. The improvement consists in an external pocket, in which, supposing the envelope has already been sealed, anything forgotten may be placed, and also sealed up and carried with equal safety, and the necessity of destroying an envelope avoided. The only difference, in the envelope is in the cut of the paper, and no additional cost is entailed in the manufacture.

Among the best conductors of sound are iron and glass. Through them sound is transmitted at the rate of 17,500 feet, or over three miles per second. But in air sound travels only 13 miles per minute, or, 1,142 feet per second.

There are about four hundred species of minerals known; but the varieties of these species are almost infinite. For example, carbonate of lime exists as chalk, marble, spar, lithographic stone, etc.

FOUL AIR in wells, drains, etc., may be effectually dissipated by dashing in a few buckets of water, mixed with a small quantity of chloride of lime.

GOOD HEALTH.

The Small-Pox Invasion.

The scare with regard to the present small-pox invasion in this city and State, seems happily to be fast passing away; the menace, however, will not have been without its beneficial effect by inducing another general vaccination and re-vaccination of our people—a remedy, which, if universally resorted to every few years, with the prompt vaccination of infants, would render it impossible for the small-pox to become a serious evil in any community. In reference to the

Prevention of Small-Pox.

Dr. Armstrong in the *Canada Lancet*, advises the following means in staying the ravages of small-pox: "Persons suffering from the disease should daily anoint their bodies and limbs throughout with carbolized oil; and also wash their bodies thoroughly with soft water, slightly carbolized; the anointing to be performed after the whole person has been washed, and gently dried with some soft fabric. This process should be commenced before patients are allowed to leave their sick-room, and continued until such time as all the diseased skin has been removed, and a new and healthy one formed. In this way the particles of diseased and desquamated skin are prevented from being set free from persons who have recently suffered, and contaminating healthy persons, by being inhaled or deposited on the exposed skin, or by getting into the water or food, and thus be a mode of contagion."

"The attempt to prevent its spread by yellow flags, isolation and non-intercourse," says the *Pacific Medical Journal*, "will prove ineffectual. While some good may result from such measures, in the way of checking its extension in one direction, they are capable of doing much evil by diverting attention of the only sure defense, and creating a false security in the public mind."

Vaccination as a Cure of Small-Pox.

Mr. R. C. Furley, in a letter to the *Scottsman*, says he is able to prove that vaccination is not only a preventative of disease but a cure. It is, he says, ascertained that when a person liable to take small-pox is exposed to the infection, the poison circulates in the blood for eight days before producing any febrile symptoms; then commence headache, sickness, pain in the back, suffused eyes, and a particularly white-furred tongue—a group of symptoms that belong to no other disease, and which lasts for three days. It has been held and acted on since Jenner's great discovery, more than eighty years ago, that it is not only wrong but fatal to vaccinate any one during that stage of disease, or the subsequent one when the eruption makes its appearance. But Mr. Furley says he can show from cases under his care at the present time that if you vaccinate during the febrile stage the fever is slightly increased, but the eruption does not make its appearance, and if you vaccinate during the eruptive stage the eruption is immediately arrested. The mature lymph overtakes the immature poison, and the disease terminates. If the eruption has gone the length of having white tops, there is danger of infection; if not, it dies away as pimples. Mr. Furley feels confident that if every doctor were to vaccinate each case of small-pox that comes under his care at once, many hundred of lives would be spared and many thousands of pounds would be saved. In the mean time, he invites members of the medical profession to accompany him among the patients he has under his care, and thus possibly stamp out the epidemic in a few weeks.

TEA DRUNKARDS.—Dr. Arlidge, of the pottery inspectors in Staffordshire, England, has put forth a very sensible protest, says the *Lancet*, against a very pernicious custom which rarely receives sufficient attention, either from the medical profession or the public. He says that the women of the working classes make tea a principal article of diet instead of an occasional beverage; they drink it several times a day, and the result is a lamentable amount of sickness. Dr. Arlidge remarks that a portion of the reforming zeal which keeps up such a fierce agitation against intoxicating drinks might advantageously be diverted to the repression of this very serious evil of tea tipping among the poorer classes. Tea, in anything beyond moderate quantities, is as distinctly a narcotic poison as is opium or alcohol. It is capable of ruining the digestion, of enfeebling and disordering the heart's action, and of generally shattering the nerves. And it must be remembered that not merely is it a question of narcotic excess, but the enormous quantity of hot water which tea bibbers necessarily take is exceedingly prejudicial both to digestion and nutrition.

COD-LIVER OIL PILLS.—Dr. Van der Court, of Brussels, prepares cod-liver oil by adding carefully pulverized slacked lime to the oil, little by little, until the consistency requisite for forming into pills is obtained. Of this mass he gives four or five grains as a dose, after each meal, flavoring it with a small quantity of oil of bitter almonds, or other substance. This remedy he considers to be in many respects better than the liquid oil, and quite useful in the early stages of consumption. The more chronic the character of the disease, the more good may be expected from its administration.

Sleep and Dreams.

Professor Humphrey, the distinguished physiologist of Cambridge, England, has given his views of the physiology of sleep, dreams and cerebral action, in a lecture before the Royal Institution. He assumes that the upper regions of the brain are those which minister to the higher mental operations, consciousness, volition and reason, while the basal portions are more immediately connected with the operations of life. The cause of sleep he holds to be a slight deterioration of the tissues which results from their functional activity during the day, and is carried so far as to interfere with the higher and more cerebral operations, and which necessitates protracted rest for the recovery of the nutritive balance. Dreaming he regards not as a normal or healthy accompaniment of sleep, but as a result of the abnormal or imperfect condition of the organ of mental action. In the natural state, he says, we should pass from wakefulness to complete unconsciousness, and vice versa, almost instantaneously, and many persons do so. But more frequently the transition is protracted, and stages are observed in which the sleep is but partial. The cerebral organ being in an imperfect state, its action is imperfect, and the first effect of the lessening of its vital vigor is a loss of the highest form of mental power—the control over the mental operations. This requires the highest mental effort, and is most easily lost. In this condition the thoughts ramble unchecked, chase one another confusedly over the mental field, and give rise to all sorts of incongruities of the imagination. At the same time being unrestrained, they are excited, and evince efforts of memory and even of combination, of which in the regulated state of wakefulness they are quite incapable. In this way the image of persons and places, events and items of knowledge, long forgotten in the ordinary state are recalled with distinctness, and we fancy that new information has been acquired, when it is only forgotten facts that are recalled.—*Galaxy*.

POISONOUS MUSSELS.—A sea-side correspondent of the *Alta*, says: "The mussel is large, and at certain seasons is very palatable, but at the present writing they breed, and then sickness is the result of eating them—death resulting in a great many cases. A bottle of sweet oil is the most effectual remedy. In one case, where an individual had eaten mussels after being warned, he described the feeling as if he was as light as a feather, in fact he held himself down on his bed in order to keep himself from flying to the roof of the house. He said it seemed to him that his head was twice its usual size, and in fact his whole frame had doubled in proportion, but still a feeling of lightness, not at all in conformity with his bulk, seemed to him to exist."

EARTH POULTICES FOR POISONOUS BITES.—A correspondent of the *Scientific American* suggests that a poultice of clay or common swamp or gutter mud should be applied as soon as possible to the bites of reptiles, or stings of insects, etc. The correspondent says he has successfully tried it upon himself. In one case he was stung by a numerous swarm of the yellow hornets in many places in his neck and arms. He went to a swamp near, the poison being so severe that his sight was much affected. He immediately applied the mud, and, in half an hour, he went to mowing again, with only a small sore lump round each sting. He knew a neighbor who was bitten by a rattlesnake some miles from home; his companion left him and went for help as fast as possible, it being just night. He was not able to return until morning. When going, he met the man returning, with the poison conquered. He had got to a swamp, dug a hole, inserted and buried the bitten place in the mud. That was all.

SPREAD AND EXTENT OF INTEMPERANCE.—A report on this subject recently made to the Legislature of Massachusetts, estimates that there are 600,000 persons in the United States who have lost their power of controlling the appetite for intoxicating liquors, and that in Massachusetts there are 23,000 of that class, of whom two per cent. die yearly through drunkenness. In Europe, statesmen are already alarmed at the progress of the vice, and the increasing consumption of liquors. The governments of France and England are agitated on the subject. The *Medical Press* is also discussing the subject from the sanitary as well as moral and economic stand point.

SUN-STROKE AND HEAT IN NEW YORK.—The first week of July, 1872, will be made memorable in the mortuary annals of New York for the unprecedented number of deaths from all causes, but notably so for the mortality from sun-stroke. The unprecedented number of 184 deaths from sun-stroke alone, were registered during that week; while the deaths from all causes during the first six days only were 1,348—more than double the usual average for the corresponding period for several years previous.

DR. ANGUS SMITH gives a good rule for ascertaining the amount of carbonic acid in the air of houses: "Let us keep our rooms so that the air does not give a precipitate when a 10% ounce bottleful is shaken with half an ounce of clear lime water," a sanitary regulation which can easily be carried out.



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SAN FRANCISCO:

Saturday, July 27, 1872.

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City Silk Culture.

The Neumans have established a cocoony for the rearing of silkworms, in Bancroft's building on Market street, where for the trifling admission fee of twenty-five cents, the silk worm can be seen in all the different stages of growth, from the egg to the perfect worm and the winding of the cocoon; as well as the process of reeling the new silk, etc.

The Neumans are experts at the business of silk growing, and the public cannot but be interested in an experiment which has been instituted purposely to show to those desiring to engage in silk culture the entire practicability of the business when properly conducted.

Silk culturists who may have cocoons for sale the present season, are requested to hand in fair samples of their products for exhibition; the different kinds must be kept distinct and those of last year's growth kept by themselves. As a market is provided for all good cocoons, it is important that they be sent, in good, marketable condition and unperforated. The cocoony will be opened to the public on the 1st of August.

A LOCAL RAILROAD.—The land-owners of Solano and Yolo counties have under consideration a proposition to build a narrow-gauge railroad from Main Prairie, in Solano county, across the country to the mouth of and through Cache creek cañon. The length of the projected road is from 30 to 35 miles, but it would probably be extended into Lake county.

ART ASSOCIATION.—The exhibition of paintings under the auspices of the Art Association of this city was opened on the evening of the 23d inst. to members. The exhibition, which possesses much merit, is now available to the public.

THE number of vessels now on the way to this port is greater than at any other time.

Editorial Notes Among the Farmers.

Our next trip is among the farmers of Santa Clara county. It commenced on the 7th inst. and continued four days—time most agreeably and profitably spent.

To Col. W. C. Wilson, President, G. George, Secretary, and W. O'Donnell, one of the Directors of the Santa Clara Valley Agricultural Society, we are indebted for the best of facilities for travel, for the most instructive and agreeable company, and for many other attentions which we shall long and pleasantly remember.

Our old traveling companion, Col. Younger, was here at home and took a great deal of pains to show us the many evidences of thrift and prosperity among the horticulturists and agriculturists of his home county. If there is a people in the State who entertain a just pride in their locality and rich and abundant resources, that people live in the county of Santa Clara.

One of their prominent citizens, Judge Devine, expressed the feeling of the whole people when, in a conversation with us, he very proudly and emphatically remarked, "I have traveled around the world, have visited and studied the climate and advantages of every country of any note or pretensions; and of all the countries I have seen, the *Pacific Slope*, from the British possessions on the north to Terra del Fuego is the best part of the world. It is the most favorably located, has the most agreeable climate and possesses the most abundant and valuable resources. Of all this most favored land I am fully of the opinion that Santa Clara valley possesses more advantages than any other locality of equal area. Indeed I think this county is the granary and garden of the best State in the world."

In population Santa Clara is the third county in the State, is third in wealth, and is certainly behind none in the intelligence and enterprise of her people. In no other county have so many shade and ornamental trees been planted along the streets and highways, no other county contains so many and extensive nurseries of fruit and forest trees, no other county has such an abundant supply of water for irrigating purposes and none makes so constant and effective use of this water, no other county in the State, if in the Union, produces such a quantity of small fruits—strawberries, blackberries and raspberries; no other county contains so many bearing apple and peach trees, and but four other counties produce more wheat. With such a record the people may well feel a local pride in their county.

They are also justly proud of their chief City and Capital

San Jose.

This city is better provided with public squares or parks, well laid out and ornamented, has a greater number of fine residences, surrounded by extensive and superb grounds, studded with tastefully arranged evergreens, and other ornamental trees, shrubs and vines, than any other city in the State—there are indeed, almost in the very heart of the city a number of establishments which for extent and variety of cultivation would, in many countries, rank with good sized farms. Among these we may name that of

General Naglee.

While the General has a place about his residence most gorgeously ornamented with a profusion of trees and vines, of almost every variety both foreign and native to be found in the State, the principal feature of attraction to us is his vineyard, his wine and brandy cellars. We were attracted by these because with them the General is carrying on a system of experiments of great value to the State, and especially to the wine-growers. He formerly pruned his vines low and approves of this mode of pruning now,—on side-hills with good exposure, where he thinks the vine should only be grown—but for low damp land subject to late frosts he has found by experiment, that grapes mature earlier and bear more plentifully if trained up from four to six feet high.

By changing the system of pruning, from low to high he has on his land increased the yield from 100,000 pounds to 400,000 pounds annually—or quadrupled the product and improved the quality very materially.

Brandy Making.

To this particular branch of business General Naglee has devoted much time and money, and has instituted many valuable experiments. He has visited a large number of the brandy distilleries of the Cognac district, in France,

and brought home with him hints learned by practical men years in the business. He has given his personal attention to the distillation of his brandy with a view to proving that California can produce as valuable an article, as the best brandy districts of Europe, and if we may judge of his success by the quality of the product, he has been most eminently successful. He has been experimenting with different kinds of grapes, with a view to determine the characteristics of each for wine purposes. He has by slow and careful distillation proved that the peculiar bouquet and flavor of the grape may be retained in the brandy—and hence that there is a great difference in the value of different kinds of grapes for brandy, and consequently for wine purposes. His experiments have led him to prefer the La Folle, the Reisling, the Rose de Peru, the Pinaud, to the Mission grape and to all other kinds with which he has experimented. He has now on hand 10,000 gallons of brandy, of the vintage of 1869, 12,000 of 1870, and 18,000 of 1871.

He proposes to sell no brandy until five years old at which age, and not before, he considers it ripe. He proposes to put each year's vintage on the market as it arrives at that age—but will sell only to consumers. The General expressed a determination to attend the fair of the Vine Growers' Association at Sacramento, and to do all he can to forward the interests of the vine industry of the State. Through his social position and wealth, his influence in this direction will doubtless be very great.

The magnificent residence grounds, or we may call it the city farm of

Mrs. S. J. Hensley,

Was next visited. It consists of thirty-five acres, in the very center of the city, most tastefully laid out and ornamented with a great variety of trees, shrubs and flowers. Among the trees we noticed the Magnolia, in bloom, the coffee tree, the persimmon, the English walnut, the shagbark, black walnut, the native California walnut and a great variety of other nut bearing trees, mostly loaded with fruit. There are on the place seven artesian wells throwing up the sparkling water, and an artificial lake covering about half an acre of ground. The residence was burned down in 1870, but will be rebuilt the present season. The place is under the charge of a son of Mrs. Hensley, C. B. Hensley, who shows a good deal of judgment and taste in its management.

Mr. Hensley is quite extensively engaged in breeding thoroughbred stock, especially in the horse line. He has ten thoroughbred mares, all bred to Patchen, this year; has four Patchen colts, one Black Hawk and some General Taylor colts. He intends exhibiting some of the mares at the Santa Clara State Fairs this fall.

We also visited the place of the pioneer horticulturist and florist.

William O'Donnell.

The appearance of this place as you enter at the front gate is that of a highly ornamented gentleman's residence. The finely laid out and richly bordered walks, the tastefully located evergreens intermingled with choice deciduous trees, show that the whole work has been planned by a skillful landscape gardener, and that O'Donnell is master of his profession. As you pass through the ornamental front yard you enter the orchard and nursery, then you see the ornamental and useful, most gracefully combined—showing that the owner has an eye to business as well as ornament. To O'Donnell's skill as a nurseryman, and enterprise as a man, San José owes much of her beauty over other cities of the State, and Santa Clara Valley has been ornamented from the products of his labor and the correctness of his taste.

Fair Grounds.

In company with President Wilson, we took an early ride one morning to the grounds of the Agricultural Society.

These grounds are situated on the Alameda between San José and Santa Clara; they contain seventy-six acres, on the back part of which is laid out one of the finest mile tracks in the State, leaving an abundance of room for a grand stand, judges stand, stables and all other buildings necessary as fixtures to a well regulated race track. There is also room for a large public house, a pavilion for the exhibition of agricultural implements and products, mechanical inventions, fruit and all other articles shown in such a building. Also for a grand amphitheatre for the exhibition and examination of stock after the plan of the St. Louis fair grounds. The grounds are already laid out and orna-

mented with reference to all these improvements, and we are assured that it will be but a few years before all will be made. These grounds are worth to-day the sum of \$1,000 per acre or \$76,000, and the best thing connected with them is that the society owns them and is free of debt, and has already a pretty good sum in the building fund.

Horses in Training.

We could not leave the fair grounds without taking a look at the many fast horses that are there in training for the fair of the society, and for the races at the State Fair.

Seeing a fine looking horse about ready for his morning exercise, we were attracted to the stable he had just left to meet the well-known gentleman and turfman A. C. St. John, about to start his excellent horse Defiance around the track. We had the pleasure of seeing him go, and his performance indicates that the horse that would throw dust in his eyes will have some work on hand. Mr. St. John has a stable of nine horses—pacers, Defiance and Trifle; trotters, Belmont, Proctor, Jenny Speucer and Robert Bonner; runners—Demorett, St. John and Jessie Lane; J. W. Donaldson has the two running fillies Irene Harding and Lulu Jackson; G. Fancher has trotters, Frank, Baltimore Belle, Beach Colt, Ike Cooke, Spence, Hunter, Ethan Allen and J. M. Patchen, Jr.

Robert Wooding has runners, Phil Sheridan and Filly, Mission Belle.

Chas. Murphy has Peri, Omaha and Mary Watson—and the old veteran trainer J. M. Daniels, has under his charge the promising McLellan Colt, Longfellow. Additional stables of horses are soon expected on the ground, and the people of the State may look for fun when all the horses from the several counties and district fairs meet to contest for the purses offered by the State Society at the State Fair. Next week we will accompany our readers up the valley among the wheat fields, vineyards, hop fields, strawberry and blackberry patches, nurseries, orchards and herds of fine cattle.

Setting Cream for Butter.

A correspondent of the *Bulletin*, A. B., in the course of his peregrinations through a portion of Marin county, makes the following note in regard to a method of setting milk for cream, which, as it may be new to some of our butter makers, we give as follows: "On our way we stopped at the ranch of Mr. Crawsen, a Swedish farmer, who has adopted the new system of dairy farming.

His milk is set in 20 gallon cans, which are kept for about thirty-six hours immersed in cold water. Mr. Crawsen claims that by his system the yield of butter is increased fifteen per cent.; that the butter is always sweet and clean, and the skimmed milk, instead of turning sour, is available for making cheese."

This method of setting milk in deep cans is not new. It has been tried during the past three years by some of the most scientific and careful dairymen of the Eastern States, and in every instance, as far as reported, resulted in favor of shallow setting, at a depth of three or four inches, as regards the actual quantity of cream.

It was found that shallow setting yielded the most cream, and in the shortest time; but that the milk soured sooner than when set in cans eighteen inches deep, rendering the milk in twenty-four hours unfit for cheese-making. The fact is established in England, Switzerland, and more recently in the Eastern States, that the presence of cream in milk is not absolutely required in the production of a perfectly marketable cheese, that pays well for the making.

Hence the system of deep setting may be advantageous, by using the skimmed milk for cheese, where the necessary cold spring water can be made available for keeping the milk at the proper temperature.

CALIFORNIA FISH AND BIRDS.—It would seem that the New Zealand people do not have a very lively appreciation of the fish and birds of California. The Auckland Acclimatization Society, who are in correspondence with the San Francisco Acclimatization Society, resolved recently not to have anything to do with American birds. As to the fish, they came to the conclusion that the California salmon was a very inferior kind of fish, of no use for sporting purposes, and would not jump at a fly. Some one stated that it very much resembled the hall trout of Scotland, from which we infer that the hall trout of Scotland do not amount to much. The Society acknowledged the letter of the Secretary of the San Francisco Acclimatization Society with thanks, and said that they would exchange anything they had, but that there were plenty of California quail in the Province at present, and they would wait for further instructions concerning the trout.

Revolution in California Wine Cask Making.

Hitherto all the lumber used for the manufacture of wine casks has been Eastern oak, and this of course has had to be imported at very high rates. For example it now sells retail, at \$100 to \$125 per thousand, whereas redwood costs only \$37½ retail in this market. Now it is quite evident, that if redwood could be substituted for it there would be an

An Immense Saving

Effectuated in the cost of the casks, and these have always formed the most expensive of the items connected with the manufacture and export of wine. Redwood has been frequently attempted to be used as a material for the manufacture of wine casks, but the experiments with it have generally proved failures, inasmuch as the coloring matter contained in it, has given a bitter and disagreeable taste to the wine. Several manufacturers of wine in the country districts have, however, steamed the casks after making them, and coloring matter thereby removed, the wine kept just as well in them as in oak built casks.

Among the gentlemen who have joined this business, are Arpad Harasthy, Esq., with Landsberger & Co., Messrs. Pellet & Carver, of St. Helena, Mr. Hood, of Sonoma, and West Bros., of Stockton. The plan of steaming after making, has failed to be entirely successful, on account of the great shrinkage of the wood. However, the Messrs. Fulda and Sons, wine-cask makers, cor. of Commercial and Davis streets, in this city, have solved the difficulty by adopting the process of

Steaming the Lumber

Before making the casks. They are pioneers in the introduction on the coast of steam machinery in the business of coopering, and have introduced several labor-saving machines of their own invention into it, as well as being the first to render of practical use, this change in the material for the manufacture of casks. They receive the redwood at the factory from Mendocino, in large bolts, cut to any size that may be required. These bolts are first cut into thicknesses and steamed for a week, in an air tight-box, twenty-five feet long, and capable of holding at once 10,000 feet of lumber. This box is kept all the time filled with hot steam conveyed thither by a pipe leading from the steam boiler. At the end of the week all the sap, coloring matter, etc., is entirely removed, and the lumber comes out half bleached, much shrunken, and not over half its previous weight. The process, moreover, causes the wood to become much tougher and makes the grain closer, as has been proved by practice. The effect of the steaming may be estimated, when it is known that sawdust taken from the prepared lumber and steeped for a week is as colorless as mucilage, whereas without, the wood from which it has been taken, having undergone the process, it would be as black as a similar solution of logwood. After steaming it is seasoned and dried, and it is then ready for the process of manufacture. The Messrs. Fulda & Sons are, however, making preparations for the future drying of the lumber by heated steam, and thus effecting a great saving in point of time. The saving effected by the use of redwood is just about one-half the cost of the casks, those made from oak costing about 15c. per gallon per cask, while those made from redwood cost in the neighborhood of 7½c.

The First Cask

Manufactured by them under this system has been for J. R. Snyder, Esq., President of the Wine Growers' Association. It holds 1,700 gallons. Its staves are three inches thick at the ends, and two in the middle. The head is made of lumber three inches thick, the central piece being of oak, with a manhole in the middle. It has 12 hoops made of 2½ by 3-16 inch iron. This firm has also commenced to manufacture tanks similarly from redwood, and have now orders for a dozen from Dr. Crano, of St. Helena. They have also invented

An Apparatus for Filling Tanks.

One source of trouble to wine growers has been hitherto that they have not been able to fill the tanks completely, a small space always remaining between the surface of the wine and the head of the tanks. This frequently caused the wine to sour, but the new invention will preclude all possibility of this happening.

The Olive in California.

At the old Mission of San Diego, which is six and a half miles northeast of New San Diego, are three hundred olive trees, that are from 80 to 100 years old. Some of these trees are 18 inches in diameter, near the ground, and from 20 to 40 feet high, branching and spreading like large willows from numerous divisions near the ground. As there are very many persons even in California, who have never seen an olive tree, we will say something of the general features of the tree and its fruit.

The olive in its growth, habit and appearance resembles the willow more than any other tree, except that the wood is very compact and solid, more like the California Laurel; and yet like the willow is grown readily from cuttings. These are prepared by cutting the bodies and limbs of the tree, of from one inch to 4 inches in diameter, into cuttings two feet in length. These are set in the ground perpendicularly their whole length, or so that their tops are just visible.

They are obtained at any time from January to March, but it has been noticed that those set about the first of March, make a quicker and better growth than many that were set earlier. The first year there are several shoots from a cutting all of which are allowed to grow, but the second year all are taken off but the strongest one, which is tied to a stake to keep it straight and upright and this should be kept up for three years, when they will mostly support themselves.

They will make a growth of from 7 to 10 feet in the first 3 years. They have a leaf somewhat resembling the willow, light green on one side and dark green on the other. Thos. J. Davies, of San Diego, who politely furnishes us the information we here impart, and who is the lessee for a term of years of the olive orchard referred to, and who is familiar with the culture, advises the setting of the cuttings in all cases, in the places they are to remain, and would set them 25 feet apart.

All About the Fruit.

The olive blossoms in April and May, a small, white blossom very thickly set upon the limbs, but possesses no particular fragrance, and what there is, nothing agreeable about it. The fruit sets and expands, of a deep green color, till nearly or quite full grown, when it assumes a yellowish green tint; after which they become red like a plum and when fully ripe, black.

It is when they are assuming the yellowish tint, that they are in proper condition for pickling. The olives are picked from the tree and simply immersed in cold water, which water is changed every day for a month, sometimes it requires 2 and even 3 months; the rule is, until the bitterness is entirely removed. They are then put in brine of moderate strength and in one week are ready for eating.

There is a remarkable peculiarity about the progress of growth in the olive; for though the blossoming season is not of long duration, the olives are ripening continuously from September and October till the next May, so that the last of the crop are ripening when the trees are in bloom for the next crop.

Extracting the Oil.

Olives for oil should be fully ripe and gathered only as they drop from the trees. They are then spread thinly and thoroughly dried, generally on floors or tables indoors; in which condition they can be kept until a sufficient quantity are ready for the extraction of the oil. The dried olives are then ground or mashed, then thrown into vats of hot water where they remain till soaked perfectly soft, then put in strong sacks and pressed in any powerful press available. During the pressing, hot water is thrown upon the outside of the sacks. The mixed oil and water as it runs from the press is quite black, partaking of the color of the dried olive. It is run in 15 or 20 gallon jars and allowed to settle. The oil is then poured off into large tin cans for a further settling and the convenience of being drawn off when wanted.

A better quality of oil is obtained by soaking the olive in hot water, and bruising the pulp without mashing the pits, but as the kernel of the pit contains a little oil, a larger quantity of inferior oil is obtained when they are mashed. Mr. Davies finds by test that it requires ten gallons of olives to produce one gallon of oil, and that the cost attending the gathering and rendering the oil in a perfectly commercial condition to be \$1.20 per gallon. The refuse pulp after the oil is extracted is excellent feed for hogs, with a fattening quality fully equal to barley.

Mr. D. brought with him from San Diego 45 gallons of excellent oil of his own make, a bottle of which is in our possession for inspection. The unripe olives for pickling are worth from seventy-five cents to one dollar a gallon. Mr. D. will have cuttings at the proper season for sale at five cents each, at San Diego; large quantities to one order, at a lower rate. Address T. J. Davies, San Diego.

The Fruit Trade of San Francisco.

The orchards of the country are now beginning to pour into this market their wealth of fruit, and our wharves, and the streets in the lower part of the city, are literally flooded with it, and filled with a busy throng of buyers and sellers, and curious sight-seers. One walking through Davis street or the lower part of Clay street, would imagine that fruit was one of the great staples of the country. It will in future be. Millions of acres of otherwise worthless hill lands, when planted with certain kinds of fruit trees and with vines will return far more to the cultivator than if they were so many acres of fertile plain.

The Fruit Season

In a manner extends the year round; there is no month in which we do not receive cargoes from the country, but it chiefly extends from July to December. That is the California fruit season for the trade in imported fruit extends from December to July. Thus our merchants are kept busy the whole year through. The

Extent of the California Fruit Trade,

May be estimated by the following facts. We have a steamer the "Reform," now making regular trips every two days up and down the Sacramento to Old River, and her average cargo consists of 3,840 baskets of peaches, 550 boxes of tomatoes, 850 baskets of plums, 27 do of pears, 100 boxes of apples, 2,100 melons and a few nectarines and figs. The value of these is about \$3,000, at present wholesale rates. Reckoning ninety trips during the season, this steamer alone would bring \$270,000 from Sacramento. Now this is not more than ten per cent. of the production of the State. The value of our fruit product therefore cannot be less than \$3,000,000, when we have included the orange and lemon product of Los Angeles, which last year was 4,692,000 of the former, and 600,000 of the latter. The quantity coming to market this year from home sources, has decreased a little when compared with that of last year. Peaches have been affected by the mildew, and the crop of apricots has been light. But the whole crop is usually so immense, that there is no perceptible difference in the supply to this market.

What Becomes of It.

Probably twenty-five per cent. is packed in this City and Oakland, and by farmers and others throughout the State, a small quantity is shipped East, a very large proportion of the total crop is spoiled in bringing to market and in passing from hand to hand, the rest is used for domestic consumption. The canning of fruit is amongst the most important of our industries and has grown to great dimensions within a very few years. It has given a very great impetus to the business of fruit growing, and will in coming years be able to use up all the fruit that we can produce, inasmuch as there is a large and increasing export trade to the East, to Mexico, Victoria, China, Japan etc.

Fruit Trade East

Is chiefly in choice Bartlett pears and grapes. To this will be added by and by one in oranges and lemons, which are now imported to New York from the Mediterranean. It is evident that when our fruit growers in the southern section of the State have extended their orange and lemon orchards and paid attention to the production of good fruit, that we will be able to secure this trade. The fruit trade East is as yet in its infancy; we will in future supply the principal part of the semi-tropical fruit required in the Atlantic and the Mississippi Valley States. It is now crippled by the high freight tariff. Fruit to Ogden, one-third the distance, is charged the same rates as flour to New York. This requires attention.

The Import Trade

From Tahiti and the Islands has this year been very considerable. Vessel after vessel has come loaded. We have received 20 cargoes of oranges aggregating 4,000,000, as well as 85,000 lime, and 162,000 cocoanuts. About twenty per cent. of the oranges and limes are spoiled during the voyage.

Prices.

The following are the latest wholesale rates: Apples, choice, \$1.25 to \$2.00 per box; do. common 50 c. to \$1.00; Pears, Bartlett, \$2.50 to \$4.00; do. Bloodgood, \$1.25 to \$1.50; do. cooking, 75c. to \$1.00; Apricots, 8c. to 9c. per lb.; Nectarines, 3c. to 5c. per lb.; Plums, Bradshaws \$1.50 to \$2 per box; do. Peach, 6c. to 7c. per lb.; do. Columbia, \$1.50 to \$2 per box; do. Imperial Gage, 75c. per box or basket; German Prunes, 6c. to 8c. per lb.; Cherries, 12½c. to 20c.; Peaches, Choice Crawford, \$1 to \$1.25 per basket; do. Tillotson, 60c. to 70c.; do. Dolly Varden, 30c. to 50c.; Strawberries, \$2.50 to \$3 per chest; Raspberries, 9c. to 12½c. per lb.; Sweetwater Grapes, 3c. to 7c. per lb.; Currants, 5c. to 6c. per lb.; Siberian Crab Apples, \$1.50 to \$2 per box; Oranges, Tahiti, \$35 per M.; Lemons, Sicily, \$14 to \$16 per box; Limes, \$10 to \$15 per M.; Bananas, \$2 to \$4 per bunch; Cocoanuts, \$8 per 100; Pine Apples, \$8 to \$9 per dozen.

Farm Laborers.

We want a great many more intelligent white laborers in California. We say white and intelligent, and we couple these together, because it is a notorious fact, that numbers of white men who claim to be competent farm hands, and hire themselves out for labor in the harvest fields and in the plowing season, are positively not as intelligent as regards the prosecution of ordinary farm labor, as are the darker colored "heathen Chinese."

White men who float out from the cities, with no care but to get employment at high wages, who know no more about farming than what they have learned on shipboard, or beside the mortar bed, or in hanging around the fashionable drinking saloons, are not as competent to do the ordinary work of the farm hand as is the darkest and most vagabondish looking Chinese in the land.

And yet if the latter are employed to do the same amount of work, and doing it better, for less or even the same wages, a great hue and cry is raised because these darker skinned but industrious men are employed in preference to white incompetent drones.

Higher Rates of Wages.

If white men want better wages because they are white, let them at least equal in skill if they do not excel the Mongolian. They should be able to direct the labor of the man of lower cast; teach him how to manage the farm animals, the handling of farm implements, the wagon, plow, harrow and all the diversified knowledge incident to the management of a well ordered agricultural establishment; know enough to be his overseer and director, instead of complaining that the dark skin is made his equal. Then may the white laborer demand higher wages with some show of reason, but not before.

What Gives Value to Labor.

With all industries and manufactures it is the superior quality of the goods, all being held at the same price, that will command the quickest sales, and no one can reasonably complain that he gets a lesser price than another, so long as he produces an inferior article.

Now the goods of the farm laborer are simply the work of his hands and if he cannot produce as good labor as others, he should not expect the same price. It is the skilled workman in all countries, and not the color of the man's face, that commands better wages than the unskilled; and the principle will apply just as properly to farm hands as to any body of workmen in our factories, machine shops or in the construction of buildings.

A Difficulty in the Way.

With the present system of farming so common to California, in which a single staple crop as of wheat for instance, is made the whole business of the farmer for the entire year, it is impossible to give steady employment to the large number of farm hands required during the harvest season.

Were it not for this, the farmer could select from among the laborers offering and put upon trial only those who could earn their wages; but until a more diversified system of cropping is pursued, the labor on which is extended throughout the year, giving employment to a lesser number of men than is now required through the harvest, but that lesser number constantly employed, or for the greater part of the year, so long will inefficient farm hands be found ready to offer themselves, at such wages as the necessities of the employer may seem to warrant.



Tell it Again.

A little golden head close to my knee,
Sweet eyes of tender gentianella blue
Fixed upon mine, a little coaxing voice,
Only we two—

"Tell it again"—insatiate demand!
And like a toiling spider where I sat
I wove and spun the many-colored webs
Of this and that—

Of Dotty Pringle sweeping out her hall—
Of Greedy Bear—of Santa Claus the good,
And how the little children met the months
Within the wood.

"Tell it again"—and though the sand-man
came
Dropping his drowsy grains in each blue eye,
"Tell it again, oh just once more"—was still
The sleepy cry.

My Spring-time violet early snatched away
To fairer gardens, all unknown to me—
Gardens of whose invisible, guarded gates
I have no key—

I weave my fancies now for other ears,
Thy sister blossoms, who beside me sit,
Rosy, imperative, and quick to mark
My lagging wits—

But still the stories bear thy name, are thine,
Part of the sunshine of thy brief, sweet day,
Though in her little warm and living hands
The book I lay.

The Queen at the Paper Mill.

The queen was riding out in her grand carriage, the horses tossing their plumes as if they felt themselves a little better than common horses, and the footman all decked out in red, feeling that they had something royal about them. The queen had always had everything she wanted, and so was quite miserable because she could not think of a want to supply, or a new place to visit.

At last she bethought her that they had just been building a new paper mill, a few miles out of the city. Now she had never seen a paper mill, and so she determined to stop a little way off, there leave her carriage, and walk in, not as a queen, but as an unknown, common lady. She went in alone, and told the owner she would like to see his mill. He was in a great hurry, and did not know that she was the queen, but he said to himself, "I can gratify the curiosity of this lady, and add to her knowledge, and though I am terribly hurried, yet I will do this kindness." He then showed her all the machinery, how they bleach the rags, and make them white; how they grind them into pulp; how they make sheets, and smooth and dry them, and make them beautiful. The queen was astonished and delighted. She would now have something new to think and talk about.

Just as she was about leaving the mill, she came to a room filled with old, worn out, dirty rags. At the door of this room was a great multitude of poor, dirty men, and women, and children, bringing old bags on their backs, filled with bits of rags and paper, parts of old newspapers, and the like, all exceedingly filthy. These were rag-pickers, who had picked these old things out of the streets and gutters of the great city.

"What do you do with all these vile things?" said the queen.

"Why, madam, I make paper out of them. To be sure they are not very profitable stock, but I can use them, and it keeps these poor creatures in bread."

"But these rags! Why, sir, they are of all colors, and how do you make them white?"

"Oh! I have the power of taking out all the dirt and old colors. You see that scarlet and that crimson, yet I can make even scarlet and crimson, the hardest colors, to remove and become white as snow."

"Wonderful, wonderful," said the queen.

She then took her leave, but the polite owner of the mill insisted on walking, and seeing her safe in her carriage. When she got in and bowed to him with a smile, and he saw all the grand establishment, he knew it was the queen.

"Well, well," said he, "she has learned something at any rate. I wish it may be a lesson in true religion."

A few days after, the queen found lying

upon her writing desk, a pile of the most beautiful polished paper she had ever seen. On each sheet were the letters of her own name and her own likeness. How she did admire it! She found also a note within, which she read. It ran thus:

"Will my queen be pleased to accept a specimen of my paper, with the assurance that every sheet was manufactured out of the contents of those dirty bags which she saw on the backs of the poor rag-pickers? All the filth and the colors are washed out, and I trust the result is such as even a queen may admire. Will the queen also allow me to say that I have had many a good sermon preached to me in my mill? I can understand how our Lord Jesus Christ can take the poor heathen, the low, sinful creatures everywhere, viler than the rags, and wash them and make them clean; and how, 'though their sins be as scarlet, He can make them whiter than snow; and though they be red, like crimson, He can make them as wool.' I can see that He can write His own name on the forcheads, as the queen will find her name on each sheet of paper; and I can see how, as these filthy rags may go into the palace and be ever admired, some poor, vile sinner, may be washed in the blood of the Lamb, and be received into the palace of the Great King in heaven."

Corsets on Growing Girls.

A great many little children have corsets put on them at seven and eight years old. It is useless to tell us that they are not tight and do no harm, they are made of firm material, with bones stitched in in every direction. If they do not positively pinch the form, they confine and prevent free motion of lungs, stomach and abdominal muscles. Carefully notice how these children breathe? Do you see? There, place your arm carelessly around her—she does not in breathing use the abdominal muscles with any degree of freedom. Look at that little half-breed girl, innocent of corsets! See how deep she breathes, how straight she stands—her shoulders thrown back, her nostrils distended and eyes flashing! Coax her to your side, mother, and notice the round, firm muscles of body and limbs. Notice how deeply she breathes—how the chest heaves—what a billowy motion of the whole trunk. Contrast it with your white lilies. "Why can they not breathe as freely?" That is what I am telling you. Now contrast the two girls; the half-breed is straight as an arrow, your daughter is stoop-shouldered; the shoulder-blades of the Indian lie flat and close back; those of your child are prominent. The chest is well rounded in the Indian; your child is flat-breasted and has deformed shoulders. The abdominal muscles of the Indian are tense and firm, her waist about her belt large; your child is soft, flabby and correspondingly feeble. The floating ribs of the Indian are in place, giving width and a large waist; in your daughter they have been compressed by her corsets and heavy clothes until the breast-bone is unnaturally prominent, but the waist is delicately tapered.

Please, now you have noticed all these points, undress your daughter, let her jump the rope or play with the baby until she forgets herself; then notice the difference in the freedom and depth of her breathing. Do you not perceive the contrast? "Why can she not breathe with this pretty corset on?" Because the corsets are firm and unyielding in their substance and structure. Because the added weight of garments heavy with thread, and tucks, and folds, and frills, drags down upon the hips and backs of the little victims until all spirit and elasticity departs, and a weary, wau, anxious look creeps into their faces and shadows all their future life.

A LOVING HEART and a pleasant countenance are commodities which a man should never fail to take home with him. They will best season his food and soften his pillow. It was a great thing for a man that his wife and children could say of him, "He never brought a frown or unhappiness across his threshold."

JUST SO.—The poorest men and women, as well as the richest, can keep their houses and yards in good condition. Flower-seeds and grass-seed are cheap, and Nature sends its rain and sunshine to all alike. She is no respecter of persons, and the morning glory and green ivy climb as lovingly up the rugged post at the poor man's door, as at the gay verandahs of the rich.

THE firmest friendship has been formed in mutual adversity.

California Literary Notes.

Ambrose Bierce, formerly "Town Crier," of the *News Letter*, is engaged as London correspondent of the *New York Herald* at a salary of \$8,000 a year. Mr. Bierce was for a long time engaged on *Figaro*.

James Watkins, formerly of the *Times* of this city, and for some time on *Figaro*, has returned to this city.

The present writer of the "Town Crier" of the *News Letter* receives the magnificent weekly salary of \$5. Bierce used to get \$50.

J. F. Bowman is writing novels for Eastern weekly papers, is a contributor to the *Overland Monthly*, and writes miscellaneous matter for the *Call*.

Charles Stoddard is still at Honolulu, luxuriating "under a banana tree," and writing prose sketches for the *Overland*.

Calvin B. McDonald, formerly on *Oakland News*, and one of the best newspaper writers in California, has gone to St. Louis to take a position on one of the leading journals there.

Prentice Mulford is writing letters from England to the *Bulletin*.

W. A. Kendall, the poet, is at Pescadero, in very bad health.

Joaquin Miller has gone East expecting to lecture.

Mrs. Parker is city reporter for the daily *Post*, and performs her duties with ability and credit.

An Eastern Literary Bureau have made negotiations with Lisle Lester (Mrs. L. P. Higbee) for the exclusive control of her writings for one year, and take charge of her public readings at the East, during the coming fall.

Miss Ina Colbrith is credited by the press with being the best poetic authoress on the Pacific Coast.

Fanny Greeu McDougal is writing a book which promises to meet with a great sale.

BEAUTIFUL EXTRACT.—I saw a temple reared by the hands of men, standing with its high pinnacles in the distant plain. The streams beat upon it—the God of Nature hurled his thunder bolt against it—and yet it stood, as firm as adamant. Revelry was in its halls—the gay, the happy and the beautiful were there; I returned, and the temple was no more, its high walls lay scattered in ruins; moss and wild grass grew wildly there. The young and the gay who revelled there had passed away.

I saw a child rejoicing in his youth—the idol of his mother, the pride of his father. I returned, and the child had become old, trembling with the weight of years, he stood the last of his generation—a stranger amidst the desolation around him.

I saw an old oak stand in all its pride, on the mountains—the birds were carolling on its boughs. I returned, the oak was leafless and sapless, the winds were playing at their pastime through its branches. "Who is the destroyer?" said I to my guardian angel.

"It is Time," said he. When the morning stars sang together in joy, over the new made world, he commenced his course, and when he shall have destroyed all that is beautiful of the earth—plucked the sun from his sphere—veiled the moon into blood; yea, when he shall have rolled heaven and earth away as a scroll, then shall an angel from the Throne of God come forth, and with one foot on the sea, and one on the land, lift up his hand towards Heaven and swear by Heaven's eternal, Time is, Time was, but Time shall be no more!"

WOMAN'S POWER.—Those disasters which break down the spirit of man, and prostrate him in the dust, seem to call forth all the energies of the softer sex, and give such intrepidity and elevation of their character, that at times it approaches to sublimity. Nothing can be more touching than to behold a soft and tender female, who had been all weakness and dependence, and alive to every trivial roughness, while threading the prosperous paths of life, suddenly rising in mental force to be the comforter and supporter of her husband under misfortune, and abiding, with unshrinking firmness, the bitterest blasts of adversity.

DEAL CAREFULLY WITH YOUR CHILDREN.—We have no right to cram our own experience indiscriminately down the throats of youth. Children should believe much and sorrow little; it is not necessary that because we—so many of us—believe little or nothing, and sorrow exceedingly, we should impart our doubts and distresses to childhood; we ought not to disturb the naturally healthy balance of their minds, by discussing subjects which it requires really intelligent, thoughtful people to decide.

Young Folks' Column.

Playing School.

Six in a row on the doorstep there;
Nice little schoolma'am, prim and fair;
Funnist noses, dimpled chins;
Listen awhile! the school begins.

"Classes in 'rithmetic, come this way!
Why were you absent, Mary Day?
Now, Miss Susan, what's twice four?
Maybe it's 'leven, maybe more.

"Johnny, don't blow in your brother's ear;
Stop it! or must I interfere?
Say your tables—now begin;
'Trustees' might come dropping in!

"What would they ever say to us,
Finding school in such a fuss?
Baby Jenny, how is that?
D O G, dear, don't spell cat.

"Terrible boy! your face is red—
Why will you stand upon your head?
Class in spelling that will do;
Here's 'sterficates' for you."

Faces as pure as the morning sun,
Voices that ring with harmless fun;
Sweet is the lesson you impart!
Sweet! and I learn it all by heart!

Six in a row on the doorstep there;
Nice little schoolma'am, prim and fair,
Free of the world, and all its pain;
Would I could join your school again?

Pug's Mistress.

"Here is a little 'un lost herself, Guv'nor," said a small street boy to the old tailor in Dark street.

"And Pug, too," said the little one.

"How is it you carry Pug, when he has two more legs to carry him than you have, my little lady?" asked the tailor.

"Those two more legs are the ones that runned him away after the bad dogs, I guess," answered the little lady; "and then I runned after him, and I don't where I is."

"What is your name?" asked the old man.

"Papa's darling," she said.

"But who is papa?"

"He is darling papa," said the little one.

"Where do you live?" asked the small boy.

"In house, and the house all lost," said the child.

"You must not run after dogs," said the old man. "Scripture bids us beware of dogs. As for myself, I give a wide berth to dogs."

The little lady looked cheerfully up into the old tailor's face, in spite of his severe views.

"And mayn't we come in," she asked.

"Bless me! yes, and welcome!" he cried. "But how will you be found? Your folks will be terribly frightened after you."

"Why, said the little lady, "can't I tell God, and can't God tell them, and then wou'd they come and fetch us?"

"That, indeed!" cried the old man, with a tear in his eye. "That, indeed! God hears the young ravens when they cry, and I am pretty sure he will hear you dearie."

"Run up and down street," he said to the boy, "and see if you can see the searchers after the lost lamb. She'll be right soon missed from the fold."

He took her into the shop, and she and Pug dropped down on the nearest stool, quite tired; at least she was. Pug looked good for another run, but he kept quiet, feeling perhaps that he had already done mischief enough for one day.

She then shut her eyes, and said, "Our Father who art in heaven," and the rest of it, which you know. After that she sat still, looking at the old man, and the old man every now and then looked at her. "The dearie!" he kept saying; and the queer thought came into his mind; "Maybe my own little Polly, that God took to heaven nigh fifty years ago, has come back to comfort my old heart these last days."

And the thought, as you may suppose, almost made the old heart young, and it felt bright and gay again, as it used to—when the sound of quick steps in the doorway startled all three. Pug gave a sudden bark.

"Rosa, Rosa! you naughty darlint!" exclaimed Biddy, rushing into the shop with the street boy at her heels, and snatching the little lady in her arms; "yon darlint! you naughty darlint!"

"I 'spected you, Biddy," said Rosa, quietly, "I 'spected you." And that is the way the little one was found.—*Child's Paper*.

Mary had a little corn
That grew upon her toe,
And everywhere Mary went
The corn was sure to go.

DOMESTIC ECONOMY.

A Chapter on Pickles.

Pickles, a "Terrible Temptation"—A "Device of the Enemy."

We know of no more convincing proof of the total depravity in our natures, than the profound desire for pickles, at just the time and moment when we ought not, above all things, to eat of them. The word pickle, in itself, has a dark and evil sound. It is a synonym of unwholesomeness, and undoubtedly had its origin in the period of "The fall," which must have been of considerable duration to comprehend all the evils ascribed to it. But until the world is vastly wiser and better, will pickles go out into utter darkness, and be known no more. There never was such a thing as a wholesome pickle known; but as Sin has a ministry as well as Good, we purpose to lend a helping hand to Evil in giving a chapter on pickling, and afterward, like Pontius Pilate, wash our hands of the whole matter.

GENERAL RULES.—For heating vinegar, use a porcelain lined vessel. Brass, copper or tin should not be used; but if used the greatest care should be observed, both in their cleanliness and in pouring the vinegar out as soon as cooked. Otherwise, serious results may supervene. Use wooden knives, forks and spoons, if such implements are needed in the pickling operations.

VESSELS FOR PICKLES.—Large mouthed, glass bottles for small quantities; wooden vessels for large quantities may be used, but glazed jars must never be used, as the vinegar acting upon the glazing, produces a strong poison.

VINEGAR.—The best is wine vinegar, but it is expensive. The next is cider vinegar. Beer vinegar comes next. Pyrolignic vinegar is exceedingly unwholesome. By the term pyrolignic, we mean that manufactured from an acid distilled from wood. If pickles present an eaten appearance, it signifies that the vinegar is too sharp. The addition of alum hardens the pickles, and renders them still more "villainous." Salt affects the life of the vinegar, and its use should be avoided as much as possible. Much boiling also injures the vinegar.

PEACHES.—Select the fruit fully grown, but not fully ripened. Wipe off the down thoroughly, using either a wet cloth or by pouring hot water over the peaches and then wiping them dry. To a peck of fruit allow a gallon, or thereabout, of moderately weak vinegar, three pounds of sugar, an ounce of cinnamon, and four or five cloves to each peach. The cloves may be stuck into the fruit, or the spices boiled in a bag with the sugar and vinegar. Put the fruit in the vessels to hold it, and pour the ingredients over it, boiling hot. Be careful and skim the vinegar well as it boils; cover well and set in a cold place for a few days, when drain off the vinegar, heat it hot, and pour on; when cold, the fruit and pickle may be put in glass jars and secured like preserves. Some picklers add the well-beaten whites of three eggs to the above quantity of vinegar, scalding and skinning until clear.

PEARS are pickled after the same manner; small pears of uniform size are preferable.

PLUMS.—To six pounds of plums, three pounds of sugar, one quart of vinegar, and one ounce each of cinnamon and cloves. Arrange the fruit, sugar and spices in layers. Scald the vinegar and pour it over the fruit. Repeat the scalding for three or four days in succession.

SWEET APPLES.—To half a peck of apples, make a syrup of two pounds of sugar, and one pint of vinegar. Boil the apples in this syrup until tender; then remove them and make a new syrup of two pounds of sugar, and one pint of vinegar. Add one teaspoonful of cloves, and the same of cinnamon tied in a bag. The first syrup may be used for sauces.

NASTURTIUMS.—Gather the seeds before entirely grown, and drop them into cool vinegar; when a sufficient quantity has been gathered, scald them in the vinegar, and bottle.

GREEN BEANS.—Boil the beans in a little salt and water until tender; drain them and put them in cold vinegar into which spices scalded in a little vinegar have been thrown.

ONIONS.—Remove the outer skin of small onions; boil them until half done in salted water; while hot, drop them into a jar of pepper-spiced vinegar. Another way; soak them for three days in brine; then scald them in milk and water; drain, lay them in a jar and pour over cold vinegar, scalded spices and a little alum; cover closely.

RADISH PODS.—Put them in a brine for three days; drain and pour over them a pickle of vinegar, cloves, cinnamon and pepper scalded together.

BEETS.—Boil until tender, and drop while hot into spiced vinegar. If the beets are large, slice them. Spiced vinegar in which peaches have been pickled is good for beets.—*Rural New Yorker.*

LINSEED OIL VARNISH.—Take eight pounds of linseed oil, and boil for one hour; then add one pound of the best rosin, (powdered,) and stir the mixture until the rosin is dissolved; now add half a pound of turpentine, let it cool, and it is ready for use.

The Inside of Houses.

THE SITTING-ROOM.—The sitting, or living-room, should be the largest and pleasantest room in the house. It should always be located at the front, and on the side where the sun will enter the windows. All means should be employed to render it attractive, comfortable, and convenient, for it is generally used for the dining, as well as the sitting-room, and is occupied for more hours in the day than any other apartment. That indispenable nuisance, the parlor, may be a secondary consideration; it has an air of frigid propriety and disuse, and the north side of the house is good enough for it. The kitchen should be spacious, and the pantry and wash-room handy. There can hardly be too many closets. Every house where civilized beings live, ought to be from nine to twelve feet between joists.

THE LIBRARY.—Every house whose occupants pretend to any degree of refinement, ought to have a room known as the library or study. Especially should every farm-house be so provided. This room is quite as important as the parlor. Almost anything else should be sacrificed to it. It need not be large, but it must be comfortable, and somewhat secluded, and it should be conveniently furnished. Here there should be maps, shelves for the books, boxes or files for the agricultural papers, and a good desk, with apartments for letters, memorandum book wherein to record farm experiments, and a blotter and ledger, wherein to keep the farm accounts with animals, fields, and crops. Farmers ought to read more, write more, and think more, they have no business to be clods or bores. With such a room as this, made attractive, farmer's boys will be less disposed to stroll about during the long winter evenings, or spend their time in idle talk, or in bar-rooms, stores, and other places, where the idle and uncultivated assemble, and where they often acquire the first lessons in smoking, drinking, and gaming, and they are far more likely to spend their lives on the old homestead, too. Rooms ought to be of a size to fit carpeting, which is 24 or 36 inches wide.

LIGHT.—Do not arrange your house so as to violate God's first command. Give it many windows, and then, oh housewife, keep your blinds open during the day, and your curtains drawn aside. If you let in the sun freely it may "fade your carpets," but if you do not it will be sure to the mothers and children. The sun is a good physician; he has never had due credit for his curative qualities—for the bright eyes and rosy cheeks that come from his healing baths. Do you know how puny is the growth of a potato vine along the darkened cellar wall? Such is the health of human beings living where the sunshine is intercepted by the window's drapery. So dark wall paper is not only gloomy, but it is physically unwholesome. Let in the sun—for with it come cheerfulness and strength! A dark room is an enemy of good health, good temper, and good morals.—*American Builder.*

DETECTION OF SULPHURIC ACID IN VINEGAR.—One of the most common and deleterious adulterations is sulphuric acid in vinegar; hence any ready means of detecting such adulteration would be of great convenience to every housewife. The *Journal of Pharmacy* says that the following process will detect the 500th part of free sulphuric acid, and is accurate for all practical purposes. An ounce of the vinegar to be examined is reduced by evaporation on a water bath to about half a drachm, or the consistency of a thin extract; when quite cold, half a fluid ounce of strong alcohol is added, and thoroughly incorporated; the free sulphuric acid will be taken up by the alcohol, to the exclusion of any sulphates; the alcoholic solution should stand for several hours, and then be filtered; add to the filtrate one fluid ounce of pure distilled water, and evaporate the alcohol off by the application of a gentle heat; the remaining liquid is then left for several hours, and again filtered; to the filtrate, previously acidulated with a few drops of pure hydrochloric acid, a solution of chloride of barium is added, which, if sulphuric acid be present, will yield a white precipitate.

A water bath may be readily extemporized in any kitchen by putting some sand on top of the stove and thereupon putting a teacup in the absence of a regular evaporating dish, in which the vinegar to be tested should be placed for slow evaporation.

TO TEST GREEN PAPER FOR ARSENIC.—The tests for arsenic, strictly so called, are suited only the laboratory use, but since it is the arsenite of copper that is employed for the poisonous green colors, a test for copper is sufficient for ordinary purposes. Put a drop of liquid ammonia on the suspected paper, and if it change the color to blue, you may be sure that copper is there, and almost as sure that arsenic is present also. There is not one chance in a hundred that a more critical examination would lead to a different conclusion. At any rate, we advise our readers not to use any paper on the walls of their houses, or for any other purpose, if this simple test makes its character suspicious.

TO REMOVE STAIN FROM MAHOGANY.—Stains may be taken out of mahogany by spirits of salt, (muriatic acid.)

PROTECTING FURS FROM MOTHS.—The secret of the preservation of furs from moths lies in two facts. First, that they are put away in season; that is, before the moth-mother makes her appearance, which she does quite early in the spring, though this year, if she does not desire to get her tender little wings nipped, she will be later than usual. And second, that they are so securely protected that it is impossible for Mrs. Moth, having once been shut out, to coax, bribe, or force her way through the barrier. The conclusion, justified by the experience of several years, is, that the best, the only certain means of preservation, is to put away our furs early in the season, either in perfectly sealed paper bags, inclosed in tin cases, or in paper-boxes, with paper pasted closely over the edges of the cover, or any other opening by which a moth could creep in. Of course paste will be unreliable in any place where mice can obtain access.

A TEST FOR THE QUALITY OF POTATOES.—It is generally understood that the value of potatoes depends upon their specific gravity, and that the heavier the potato the greater the amount of nitrogenous matter it contains. This has suggested the idea of a convenient test by which the excellence of different varieties can be readily determined, and which consists in the use of saline solutions of different degrees of strength. If, assuming one variety as a standard, we make a solution of such strength that the potato will float at about the middle of the mass, neither falling to the bottom nor rising to the surface, and apply the same test to the other potatoes, we may conclude that if one fall to the bottom it is better, or if it rise to the top it is poorer, than the standard.

WORMS IN FLOWER POTS.—Many ladies are puzzled how to get rid of the detestable worms that will infest the earth in their flower-pots. The following recipe which we find in an exchange is recommended to destroy the pests:—"Put one ounce of ammonia into one gallon of warm water, and water the plants with it once a week; they will be free from these worms, and be beautiful and green. To kill the little bugs that get on the oleander, take a piece of lime the size of a hen's egg, and dissolve it in about two quarts of water, and wash the stock and branches of the tree; they will disappear."

Practical Receipts.

POTATO PUFF.—Take cold roast meat—beef or mutton, or veal and ham together—clear from gristle, cut small, and season with pepper and salt, and cut pickles, if liked; boil and mash some potatoes, and make them into a paste with an egg, and roll out, dredging with flour. Cut round with a saucer, put some of the seasoned meat with one-half, and fold it over like a puff; pinch or nick it neatly round, and fry it a light brown. This is a good method of cooking meat which has been cooked before.—*Denver Tribune.*

STEWED FIGS.—Put into a stew-pan four ounces of sugar, the thin rind of a large lemon, and one pint of cold water. When the sugar is dissolved add one pound of best figs, and place the pan on a stove so that the fruit may swell gently and stew very slowly. When quite tender, add the strained juice of two lemons. Arrange in a glass dish and serve cold.

CORN BREAD.—Take four cups of sour milk, one of these partly filled with cream; one egg, a little salt, two even teaspoonfuls pulverized soda; mix the soda with a little corn meal, and stir altogether, till it foams; then add cornmeal till a thin batter is obtained, and pour into hot tins, oiled, an inch deep, and bake in a quick oven.

PEACHES AND CREAM.—Peel soft juicy peaches, quarter them, put a layer of peaches, one of sugar, sprinkling on very thick until the desired quantity is prepared. Spread thickly over the last layer of peaches powdered loaf sugar. Set the dish upon ice or in a very cool place an hour before using; do not bruise them. Some persons like them best mashed fine, sweetened, and a little grated nutmeg added; in either way serve in small deep plates; eat with rich cream.

BAKED PUDDING.—The following is said to be one of the best puddings ever used in the Metropolitan Hotel of New York: Five tablespoons of corn starch to one quart of milk; dissolve the starch in a part of the milk, and heat the remainder of the milk to nearly boiling; having salted it a little, then add the dissolved starch to the milk; boil three minutes, stirring it briskly; allow it to cool, and then thoroughly mix it with three eggs well beaten with table-spoons of sugar, flavor to your taste and bake for half an hour.

TO POLISH FURNITURE.—Melt together in a small vessel, $\frac{1}{2}$ pound of beeswax, and $\frac{1}{4}$ of an ounce of alkali root, until the former is well colored; then add linseed oil, and spirits of turpentine, of each $\frac{1}{2}$ a gill; strain through a piece of coarse muslin.

HAM TOAST.—Chop some lean ham, put in a pan with a little pepper, a lump of butter and two eggs, beaten; when beaten thoroughly spread it on buttered toast, and serve hot.

"EVERY DAY" PUDDING.—Half a loaf of stale bread soaked in a quart of milk, four eggs, four tablespoonfuls of flour; a little fruit, dried or fresh, is a great addition. Steam or boil three-fourths of an hour.

TO BRIGHTEN COLORS.—Soda in the rinsing water will clear up and intensify almost any blue and purple. Vinegar will do the same for pink or green calicoes. It is said that a strong decoction of common haw will preserve the color of French linens and lawns.

The Effect of Strikes on Commerce.

All the commercial papers of America are now discussing the effects of the recent great strike in New York. The majority regard strikes as an unmitigated nuisance, and as greatly hurtful to the industrial interests of the nation; but the minority, including some first-class journals, take quite a different view of the matter. They regard the workmen as completely justified, and charge the great banking concerns and the capitalists with the usurious rates of interest that they exact as being the real impedimenta in the way of progress. We have not here to do with either, we have not to question whether the strikers are right or wrong—we consider merely the effect on the world's commerce. Hitherto the United States cannot be said to have had any foreign commerce worthy of the name. One reason was, that they had no manufactured goods which they could sell; another, and one having very considerable influence, of late years, was, that the high prices of labor made our manufactures too dear, and that England and France could from this reason undersell us in the markets of the world. This last condition of things is being wholly changed, and that through the medium of strikes. The price of labor is being raised and a reduction of the hours of labor effected all over the old world, principally in the great manufacturing countries. The movement thus begun will continue until the price of labor and the hours of working become the same in all parts of civilized Europe and America.

The advancing intelligence of workmen the world over, is making them see that their interests are everywhere the same, therefore when they strike, they strike in unison. Thousands of dollars came from the treasuries of English trade societies during the strike which is about being terminated, to assist their affiliated societies on this side of the Atlantic. Whatever affects a particular trade in one country, will affect it in every other. If, therefore, the American strike had succeeded universally, it would in six months have been followed by a gigantic strike in Europe. As we have before stated, the result of all this would be to assimilate the cost of production in Europe and America, and thereby we would be vastly the gainers. We could then without fear throw off the restrictions on commerce imposed by the heavy duties still existing, and we could compete with England and France, on every land and on every sea. The eight-hour movement would not eventually have raised prices in America, the manufacturers would have to be contented with smaller profits. It would have been a positive benefit to this coast to have had it succeed. For combined with it was, in many instances, a strike for higher wages, and we have suffered from the circumstance of paying higher wages than in the East, thus being unable to compete with Eastern manufacturers, even on our own ground. In fine, strikes by tending to equalize the cost of production everywhere, result in preventing particular nations having a monopoly of the commerce of the world.

PROVISIONS FROM THE EAST BY RAIL.—During the last month as well as previous ones, Hams, Bacon, Lard, Eggs, etc., have flowed in upon us in almost unlimited quantities from the East. Every day from the 24th of June up to the 13th inst., every train came loaded, but now the arrivals are comparatively light. One cause of the great import has been that our farmers have raised very few hogs last season, and therefore the enforced idleness of our principal factory for the preparation of canned and smoked meats, that of Messrs. J. Y. Wilson & Co., left a great void in the market which could be only thus filled.

AMERICAN LOCOMOTIVES FOR EUROPE.—The Baldwin Locomotive Works of Philadelphia, build locomotives cheaper and better than similar works in England or Belgium, and this establishment exports engines constantly to foreign countries. Its business in this particular line has not been restricted by any inability to compete against European builders, but solely by the enormous extent of the American market. Since the accession of the present management, M. Baird & Co., the concern has been enlarged very greatly, and is now producing at the rate of four hundred and thirty locomotives a year. It is now working upon a Russian contract, but at the same time is making engines for all parts of America.

THE RAILROAD WAR.—The contest between the Central Pacific and the promoters of the St. Louis Atlantic and Pacific, is thus far provoking the Directors of the former to efforts which largely tend to benefit the community. Taking time by the forelock they are purchasing lots everywhere about Mission Bay, filling in, building depots and expending millions of dollars. We want a few more railroad contests.

The Presidency of the California State University.

At the meeting of the Regents on Tuesday last, it was expected that an election of President would be had. The meetings of the Board are private, but the reports given out by the Secretary are to the effect, that the election was postponed one week, but no reasons are assigned therefor.

We understand that Prof. Gillman, President of the Sheffield School of Science, of Yale College, has consented to accept the Presidency of the University if elected. Unknown to himself, he was proposed and elected some two years since; but for certain and satisfactory reasons, he was not at the time able to accept the position. Prof. G. was then the choice of even the member of the Board whose name is now used (without denial) as a candidate against him.

Much regret was expressed at the time by the friends of the University, who knew Professor Gillman best, his excellent fitness for the position and his sterling qualities; and now as then, we consider him in the highest degree acceptable. The election of a man to fill this position should be above any consideration of individual favor rendered on the part of any man. Higher than mere personal friendship are the enduring interests of the institutions, and they should be guarded and fostered and be the pride of every intelligent Californian.

No practical politician can hardly be found pure enough to serve in the capacity of President of the University without bringing dissensions. No more headful of money-making brains can be popular enough to secure the full unity and the best efforts of all interested in the University. There are well informed men and business talent enough in the Board of Regents to carry on all the strategy necessary for the good of the concern or the interests of the people.

There are strong arguments in favor of securing the services of a man like Professor Gillman, who is in active training and spirit, and alive with the best experience of the day for such a position and we hope the Board will act with an eye single to the best and future interests of the University, and not with reference to personal friendship or other individual relations or lesser considerations of any nature, nor let the opportunity be lost of making a grand, bold step toward securing the future onward progress of the institution.

Moreover, we had supposed that this high position was reserved to be occupied by one so entirely removed from all connection with previous efforts and movements touching its creation, that not one objection could be raised on this or any other grounds.

No man can do too much gratuitously for the University to be fully rewarded by the satisfaction of aiding the noblest work yet undertaken on this Coast. Its influence on future generations is beyond human reckoning. What man shall say who has done most for the institution? Who has a right to seek material reward?

Here is an institution eminently the creation of the people of the State, and therefore in all its departments should be made in the highest degree subservient to the public good, and we earnestly hope that through friendship and favoritism the Board will not do itself the injustice to elect one of its own wealthy and influential members to the highest and largest salaried office when the best, most practical and desirable talent in the Union is offered—a person known and esteemed throughout the nation.

The people want the Presidential chair of the University, filled by a man of the highest literary attainment, coupled with that of a genial heart, that can go out in all its cosmopolitan fullness towards the people, and far above all suspicion of any exercise of personal favoritism.

Such a man we believe has been found in Professor Gillman, and we hope his election will be by the unanimous vote of the Board. The magnitude of the interests involved in this question have caused us somewhat reluctantly to indicate this article, which, however, is rendered without personal ill will; or a desire to detract from the just merits or praise of any one.

ON FILE.—Letter from J. S. W.—What Sacramento needs—Colfax Correspondence—Mrs. W. R. M.—White River Nevada—G. D. C. Riverside, 2. An article on California Wines by Maj. Snyder. From some one at Riverside about fruits and markets.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

(The prices given below are those for entire consignments from first hands, unless otherwise specified.)

SAN FRANCISCO, Thurs., A. M., July 25.

FLOUR—The interior and local demand is reported good, with a fair inquiry for export. As soon as low grade wheat comes in more freely a more active foreign demand is expected. We quote prices as follows:

Superfine, \$4.25@4.50; extra, in sacks, of 196 lbs. \$5.75@5.85; Oregon brands, \$5.25@5.87½ in sacks of 196 lbs.

WHEAT—The market has been active at unchanged rates since our last review. Receipts are free. Four cargoes, aggregating 122,000 centals have been cleared this week from this port, and there are now nineteen vessels under engagement to load. Sales aggregate 25,000 sacks ordinary to choice, at \$1.50@1.75. The range for shipping grades is \$1.50@1.55, and choice milling, \$1.57½@1.60 per 100 lbs.

The latest Liverpool market quotations come through at 11s. 9d. @12s. per cental.

BARLEY—Market firm. Sales embrace 10,000 sacks, at \$1.10@1.15 for new, and \$1.50@1.55 for old. The range at close is, new bay 1.05@1.15; old feed \$1.45@1.55; old brewing \$1.52½.

OATS—Market is steady. Sales ordinary coast to choice bay, at \$1.50@2.00 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.75@1.90 per 100 lbs. **CORNMEAL**—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs. **RYE**—Is quiet at \$1.75@1.80 per 100 lbs. **STRAW**—Quotable at \$6@7.25 per ton for cargo lots.

BRAN—Is selling at \$20 per ton from the mill.

MIDDLINGS—For feed, are now \$30.00 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been pretty free during the week. Quotable at close at \$8@16.50 per ton.

HONEY—In the comb, is selling at 10@20; do. strained, 12@15c. per lb.

POTATOES—There has been a pretty fair demand this week, but prices show a further decline. Sales of Red at \$1.10@1.35 per 100 lbs.; Peachblows, \$1.40@1.45; Carolina, \$3@3.50 per 100 lbs.

WOOL—Is still very quiet and prices are nominal. Sales for the week were about 20,000 lbs., private. The range of prices is nominally 30@35c. for clean, and 20@25c. for burry. **TALLOW**—Good quality of Cal. 8c.

SEEDS—Flax 3c.; Canary, 4½@5½c. Alfalfa, 16@20; mustard, 3@6c. per lb.

PROVISIONS—California Bacon 12½@14c. per lb.; Oregon, 13½@14c.; Eastern do. 10@12 for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 13@14; Eastern do. 16@18c.; California Smoked Beef, 13½@14c. per lb.

BEANS—The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25; large \$3.75; Bayo, 5.25@5.50.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 6c. Pecan, 25c. @ lb.; Hickory, 12c.; Brazil, 15c.; Chili Walnuts, 15c.; French Almonds, 25 @ 30c.; Princess Almonds, 35@40c.; Los Angeles Walnuts, 18c.; Cocoa-nuts, \$7.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7@8 ¢ lb. do. 2d quality 6@7 ¢ lb.; do. 3d do. 4@5c.

VEAL—Quotable at 7@10c.

MUTTON—6@6½ ¢ lb.

LAMB—8@9c.

PORK—Undressed grain-fed is quotable at 5½@6½ ¢ c. dressed, grain-fed, 8@9½ ¢ c. per lb.

POULTRY—Live Turkeys, 25c. @ lb.; dressed, 27c. per lb.; Hens 9.00@9.50; Roosters, \$6.00@8.00 per dozen; Spring Chickens, \$1.00@1.50; Ducks, tame, \$7.00@8.00 per doz.; Geese, \$12@15 ¢ dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 25@30c., with a few choice lots at 32½; New firkin is quotable at 25@27½c.; pickled, old 18@20c.; Eastern firkin 18@27½c.

CHEESE—New California, 11@13½ ¢ lb.; Eastern is jobbing at 13@14c. @ lb.

Eggs—California fresh, are 42½@45c.; Eastern, 18@22c. @ doz.

LARD—California 12½@14; Oregon, none in market. Eastern in cases 14@14½ ¢ c.; do in tes. 11½@12c. per lb.

FRUIT—The fruit market will be found in another column under its appropriate head.

DRIED FRUIT

Apples, 9½@10c. Pitted, do 20 @ 25

Pears, 9 @ 10 Raisins, 5 @ 15

Peaches, 10 @ 11 Black Figs, 6 @ 8

Apricots, 5 @ 10 White, do 15 @ 20

Plums, 5 @ 10

VEGETABLES.

Cabbage, 3 @ 4 Cucumbers, 75 @ 1.00

Garlic, 1 1/2 @ 2 Summer Squash, 50 @ 75

Rhubarb, 1 @ 1 Asparagus, 50 @ 62½

Green Peas, 1 1/2 @ 2 Tomatoes, 50 @ 62½

Sweet Peas, 2 @ 2 String Beans, 2 @ 2½

Green Corn, 6 @ 25 Egg Plant, 2 @ 2½

Mitrowat Squash, 2 @ 2 Peppers, 2 @ 3c

per ton \$10 @ 15 Okra, 6 @ 8

for jobbing lots; Flour sacks 9½@9¾ ¢ c. for qrs. and 13½@14½ ¢ c. for blfs. Standard Gunnies are jobbing at 20@21c.; Wool 75@80c. The price of 40-inch Burlap, has been reduced to 12½ ¢ c.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS.

The demand for lumber in the interior is light, and the export trade is light also. Dealers pay for cargoes of Oregon as follows:

Rough \$16@17; do. surfaced at \$26@28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @ 2.75; Shingles \$2.50@2.75. Sugar Pine \$35 @ 45; Cedar \$27½@37½. Pickets: Rough, \$11; pointed, \$16; dressed, \$25. The following list of retail prices is continued by the Lumber Dealers' Exchange.

Puget Sound Pine—

Rough, 3 ¢ M. 22 50

Fencing and Stepping, 3 ¢ M. 35 00

Fencing, second quality, 3 ¢ M. 25 00

Laths, 3 ¢ M. 3 00

Fencing, 3 ¢ lineal foot. 3 ¢ c

Redwood—

Rough, 3 ¢ M. 22 50

Rough refuse, 3 ¢ M. 17 00

Rough Pickets, 3 ¢ M. 18 00

Rough Pickets, pointed, 3 ¢ M. 20 00

Fancy Pickets, 3 ¢ M. 30 00

Siding, 3 ¢ M. 25 00

Tongued and Grooved, surfaced, 3 ¢ M. 37 50

Do do refuse 3 ¢ M. 25 00

Half-inch surfaced, 3 ¢ M. 35 00

Rustic 3 ¢ M. 40 00

Batten 3 ¢ lineal foot. 3 ¢ c

Shingles, 3 ¢ doz. 3 00

Sugar Pine is jobbing at \$55 for clear and \$45 for second quality.

COFFEE—Costa Rica 20½ ¢ c; Guatemala 18c. Java 26c; Manilla, 19½; Rio 19½@20;

Ground Coffee in cases 30c.; Chicory, 12½.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole

Pepper 20c. Groundspices—Allspice \$1.00 @ doz.; Cassia \$1.50; Cloves \$1.12½; Mustard

\$1.50; Ginger and Pepper, each \$1.00@1.12 ¢ doz.; Mace \$1.50 ¢ lb.; Ginger 15c ¢ lb.

FSH—We quote Pacific Dry Cod in bundles at 4½ ¢ c; Salmon in blbs. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2.50 for 2½-lb. cans, \$2.25 for 2-lb. cans, and \$1.75 for 1-lb. blbs; Pickled Cod, \$4.50 in hf blbs and \$8 in blbs; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf blbs, \$8.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.15; do No. 2, \$1.50@1.62½.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 ¢ ream.

PAINTS—Standard White Lead 12½ ¢ c; Whitening, 2½ ¢ c; Chalk 2½ ¢ c; Paris White 3c.; Ochre, 3½ ¢ c; Venetian Red, 3c.; Red lead, 11½ ¢ c; Litharge, 11c. @ lb.

RICE—Sales of China No. 1 at 7@7½ ¢ c. and No. 2 at 6½@6¾ ¢ c; Siam, quotable at 5½@6½ ¢ c in mats; Carolina Table, 10@11; Hawaiian, 9@10c per lb.

SUGAR—We quote Cal. Cube at 13½ ¢ c; Circle A Crushed, 13c. and Granulated 12½ ¢ c; Golden C. 11c; extra Golden 11½ ¢ c; Hawaiian 8@11c. as extremes ¢ lb.

SYRUP—Prices may be given as follows: 57½ ¢ c in blbs, 60 in hf blbs, and 65c in kegs.

SALT—California Bay sells at \$6@8½; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 ¢ ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c. and Castile, 13@13½ ¢ lb.

TEA—We quote as follows for bulk descriptions: Amoy—Common to fair, 30@45c.; superior to fine, 55@65c.; extra fine, 75@85c. Fooehows—Common to fair, 25@45c.; superior to fine, 50@60c.; extra fine, 75c. Souehong and Congon—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Japans—Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55@75c. @ lb.

San Francisco Metal Market.

PRICES FOR INVOICE.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, July 25, 1872.

IRON.

Scotch Pig Iron, 7 ¢ ton. \$69 00 @ 65 00

White Pig, 7 ¢ ton. 50 00 @ 55 00

Refined Bar, had assortment, 3 ¢ lb. 04 00 @ 05 00

Boiler, No. 1 to 4. 05 00 @ 06 00

Plate, No. 5 to 9. 06 00 @ 07 00

Sheet, No. 10 to 13. 08 00 @ 09 00

Sheet, No. 14 to 20. 09 00 @ 10 00

Sheet, No. 21 to 27. 09 00 @ 10 00

Horse Shoes. 7 50 @

Nail Rod. 10

Norway Iron. 5

Other Irons for Blacksmiths, Miners, etc. 5 @ 6

COPPER.

Sheathing, 3 ¢ lb. 40 @ 45

Sheathing, Yellow. 30 @ 33

Composition Nails. 28 @ 30

Composition Bolts. 28 @ 30

TIN PLATES.

Plates, Charcoal, 1X box. 19 00 @ 20 00

Plates, 1X Charcoal. 17 00 @ 18 00

Roofing Plates. 16 00 @ 17 00

Banca Tin, Slabs, 3 ¢ lb. 45 @ 50

STEEL.—English Cast, 3 ¢ lb. 15 @ 16

Drill. 15 @ 16

Flat Bar. 17 @ 18

Pough Point. 3 75

Russia (for mould boards). 12½

QUICKSILVER. 3 ¢ lb. 65

LEAD.—Pig, 3 ¢ lb. 10 @ 06

Pipe. 9 @ 10

Bar. 06½ @ 07

ZINC.—Sheets, 3 ¢ lb. 11 @ 11½

BORAX.—Refined. 28 @ 30

Borax, crude. 5 @

San Francisco Retail Market Rates.

THURSDAY NOON, July 25, 1872.

MISCELLANEOUS.	
Butter, Cal fr. lb.	25 @ 35
do Oregon, lb.	25 @ 30
Honey, 7 lb. do.	25 @ 30
Cheese, 3 ¢ lb.	20 @ 25
Eggs, per doz.	45 @ 50
Lard, 3 ¢ lb.	19 @ 20
Sugar, cr. 7 lb. do.	9 @ 10
Brown, do, 7 lb. do.	9 @ 10
Boet, do, 12 ¢	12 @
Sugar, Map, lb.	25 @ 30
Plums, dried, lb.	15 @ 20
Peaches, dried, 20 @	30
Wool Sacks, new	82½ @ 85
Second-hand do.	82½ @ 85
Wheat-sks, 22x36	15 @

PRODUCE, ETC.	
Flour, ex. 55 lb. do.	60 @ 65
Superfine, do. 60 @	65
Corn Meal, 100 lb. do.	30 @ 35
Wheat, 3 ¢ 100 lb. do.	20 @ 25
Oats, 3 ¢ 100 lb. do.	15 @ 20

FRUITS, VEGETABLES, ETC.	
Apricots, 16 @	18
Pine Apples, 1 ¢ 50 @	30
Bananas, 3 ¢ bunch	50 @
Cantaloupes, 25 @	30
Watermelons, 25 @	30
Cal. Walnuts, 20 @	30
Cranberries, 10 @	30
Strawberries, 10 @	30
Raspberries, 15 @	30
Cranberries, 10 @	30
Gooseberries, 25 @	30
Cherries, 15 @	30
Oranges, 100 @ 20	30
Lemons, 100 @ 30	30
Apples, per 100, 20 @	30
Figs, fresh, 12 @	30
Asparagus, wh. 7 @	30
Artichokes, doz. 50 @	30
Brussels sprouts, 10 @	12
Beets, 3 ¢ doz.	25
Potatoes, New York 14 @	25
Potatoes, sweet, 10 @	25
Broccoli, doz. 50 @	25
Cauliflower, 1 ¢	50
Cabbage, 3 ¢ doz.	15 @ 25
Carrots, 3 ¢ doz.	15 @ 25

Cantelcoups.....	25	@	50	Cress, 3 doz bun	20	@	25
Watermelons.....	25	@	50	Dried Herbs, h'h	25	@	50
Cal. Walnuts, lb.		@	20	Garlics.....	5	@	
Cranberries, 3 g		@	1 00	Green Peas, 3 lb	4	@	
Strawberries, lb	10	@		Green Corn, doz.	15	@	20
Raspberries, lb	15	@		Lettuce, doz	12	@	

A Good Binder for \$1.50.

Subscribers for this journal can obtain our Patent Elastic Newspaper File Holder and Binder for \$1.50—containing gilt title of the paper on the cover. It preserves the papers completely and in such shape that they may be quickly fastened and retained in hook form at the end of the volume, and the binder (which is very durable) used continuously for subsequent volumes. Post paid, 25 cts. extra. It can be used for Harper's Weekly and other papers of similar size. If not entirely pleased, purchasers may return them within 30 days. Just the thing for libraries and reading rooms, and all who wish to file the Press. 1ambp

PHILADELPHIA AGENCY.—W. H. Daffin, formerly of San Francisco, is our correspondent and business agent, Frankford, Philadelphia, Pa.

H. BAHLEN & Bro., formerly of Havillab, Kern county, will please communicate with this office.

Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plants, Catalogues, 20c. F. K. PHOENIX, Bloomington Nursery, Ill. 2v4-16t

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A sure thing. CABLE SCREW WIRE Boots and Shoes will not rip, leak or come apart, and are the easiest ever worn. Try them. All bear the Patent Stamp.

UNIVERSALLY PRAISED

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400 pages. Fine Singing School Course. Large collection of the best Anthems and Tunes. 20,000 copies already ordered. The Banner Church Music Book of the Season. Price, \$1.50; \$13.50 per doz. Specimens sent, post-free, for the present, for \$1.25.

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Nichols, Shepard & Co.,

MANUFACTURERS OF

"VIBRATOR"

Thrashing Machines,

BATTLE CREEK, MICHIGAN.

Branch Office, - - - Sacramento, Cal.

We beg to announce to our friends and patrons on this Coast our past progress and present situation as to the demand for and supply of our "VIBRATOR" THRESHING ESTABLISHMENTS.

This is the second year of our active operations in California, though we had previously sent over a few machines from year to year, some of them as long as five years ago, which have made a splendid record, and are still "vibrating" to the satisfaction of purchasers. Last year (1871) the inquiry for VIBRATORS in this region had become so large that we felt justified in sending out about thirty machines, all of which found ready sale, notwithstanding the short crop, and we were obliged to decline many orders. This year (1872) we have already brought over and sold upwards of one hundred, which we have good reason to believe is more than have been sold in California this year, up to this date, by all other dealers and manufacturers combined. Still, as is well known, we have been wholly unable to supply the demand for VIBRATORS, and had we had a fully supply we have no doubt but we could have sold two-thirds or three-fourths of all the Thrashers sold in California this year, our short supply and inability to furnish enough machines alone enabling dealers in the "old style" to work off a portion of their stock. During the past two weeks we have declined many orders. We now have several carloads of machines in transit from our Factory, but these are all sold to arrive. This success, in the face of the combined opposition of the active and alert dealers in all the "Endless Apron" machines, speaks for itself. We shall ship

No More Vibrators

To this Coast this year, because the requirements of our customers "in the States" will exhaust all we are making and leave them short of their wants.

Another Year

We will be on hand with an increased stock of machines, prepared with special reference to the peculiar needs of this region, and containing such improvements as are suggested by experience with the multitude which we now have in operation here. Those who desire to buy these remarkable GRAIN-SAVING, TIME-SAVING and MONEY-MAKING Thrashing Establishments, are invited to address us at our "home office" in BATTLE CREEK, MICHIGAN, and to put in their applications early in order to secure machines. We have already had the most flattering reports from the great bulk of the machines sold this year, and we respectfully invite all interested to examine and post themselves so that they may know what sort of Thrashing Machine they had better invest their money in, and what kind to employ if they don't want to waste their grain.

JOHN NICHOLS, President.

Sacramento Office, July 18th, 1872. 1t

ARCHITECT J. J. NEWSOM No 430 MONTGOMERY ST S.F.

KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

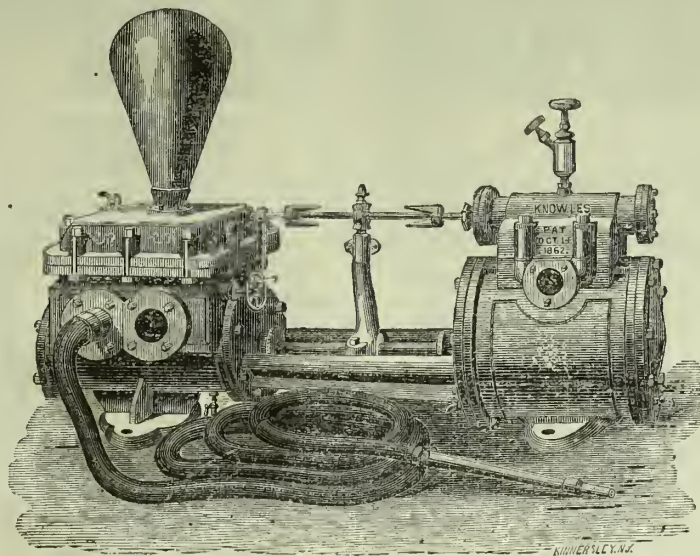
"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded)." Signed by the Committee:

v113-awbp

G. W. DICKIE,
CHAS. R. STEIGER,

W. EPPELSHEIMER,

H. B. ANGELL,
MELVILLE ATWOOD."



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

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BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, JAS. SPIERS, WM. H. BIRCH. (Signed)]

From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGELL, CHAS. R. STEIGER,
W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for which we are also selling agents.—See official Report of the above Committee.]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

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Our intimate knowledge of the various inventions of this coast, and long practice in patent business, enable us to abundantly satisfy our patrons; and our success and business are constantly increasing.

The shrewdest and most experienced Inventors are found among our most steadfast friends and patrons, who fully appreciate our advantages in bringing valuable inventions to the notice of the public through the columns of our widely circulated, first-class journals—thereby facilitating their introduction, sale and popularity.

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In addition to American Patents, we secure, with the assistance of co-operative agents, claims in all foreign countries which grant Patents, including Great Britain, France, Belgium, Prussia, Austria, Victoria, Peru, Russia, Spain, British India, Saxony, British Columbia, Canada, Norway, Sweden, Mexico, Victoria, Brazil, Bavaria, Holland, Denmark, Italy, Portugal, Cuba, Roman States, Wurtemberg, New Zealand, New South Wales, Queensland, Tasmania, Brazil, New Grenada, Chile, Argentine Republic, AND EVERY COUNTRY IN THE WORLD where Patents are obtainable.

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We can and do get foreign patents for inventors in the Pacific States from two to six months (according to the location of the country) sooner than any other agents.

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Our long experience in obtaining patents for inventors on this Coast has familiarized us with the character of most of the inventions already patented; hence we are frequently able to save our patrons the cost of a fruitless application by pointing them to the same thing already covered by a patent. We are always free to advise applicants of any knowledge we have of previous applications which will interfere with their obtaining a patent.

We invite the acquaintance of all parties connected with inventions and patent right business, believing that the mutual conference of legitimate business and professional men is mutual gain. Parties in doubt in regard to their rights as assignees of patents, or purchasers of patented articles, can often receive advice of importance to them from a short call at our office.

Remittances of money, made by individual inventors to the Government, sometimes miscarry, and it has repeatedly happened that applicants have not only lost their money, but their inventions also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency.

The principal portion of the patent business of this coast has been done, and is still being done, through our agency. We are familiar with, and have full records, of all former cases, and can more directly judge of the value and patentability of inventions discovered here than any other agents.

Situated so remote from the seat of government, delays are even more dangerous to the inventors of the Pacific Coast than to applicants in the Eastern States. Valuable patents may be lost by the extra time consumed in transmitting specifications from Eastern agencies back to this coast for the signature of the inventor.

Confidential.

We take great pains to preserve secrecy in all confidential matters, and applicants for patents can rest assured that their communications and business transactions will be held strictly confidential by us. Circulars free.

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We have superior artists in our own office, and all facilities for producing fine and satisfactory illustrations of inventions and machinery, for newspaper, book, circular and other printed illustrations, and are always ready to assist patrons in bringing their valuable discoveries into practical and profitable use.

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A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

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Brooders and Importers of the

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FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed. Persons living in Utah or Nevada, by giving timely notice, may have stock delivered on their way westward, thereby saving the cost of freight back. 26v3-tf

ROBERT BECK.

WATT & McLENNAN, WOOL COMMISSION MERCHANTS,

625 Sanson street, corner Jackson, SAN FRANCISCO.

Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

DURHAMS.

TEN HEAD OF THOROUGHBRED
DURHAMS FOR SALE.

All Superior Animals,

For particulars inquire of
1v4-4t E. S. HOLDEN, Stockton.

To Parties About Building.



A person who is competent to prepare plans and take charge of the construction of Dwellings, Mills, Bridges, or other architectural improvements, will make favorable engagements with persons or corporations in the city or the interior. Has had full experience on this coast, and can insure good satisfaction.

tion. Address EDW. W. TIFFT,
5-v24-sa No. 626 Jessie street, San Francisco

THRESHING AND REAPING Lubricating Oil.

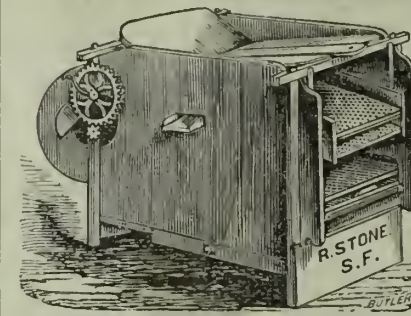
We invite attention to this superior Lubricator, specially for all out door machinery exposed to the dust and dry air of a California climate. Being of HEAVIER GRAVITY than Sperrin, a less quantity is needed. It neither gums or becomes thick and sticky, like the ordinary machine oil in common use, with a saving of from 15 to 25 per cent. in reduced friction, and at a cost 50 per cent. less than the best Lard Oil.

W. STRINGER & CO.,

20v4-3m 424 Davis street, SAN FRANCISCO.

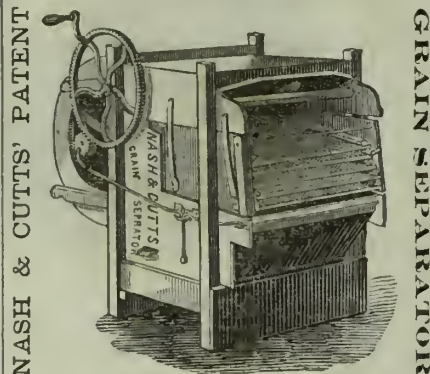
CHINESE SERVANTS AND LABORERS of all kinds furnished at the shortest notice by applying to WOLF & CO., 510 Pine Street, San Francisco. 13v24-3m

THE PATENT Novelty Mill and Grain Separator



Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

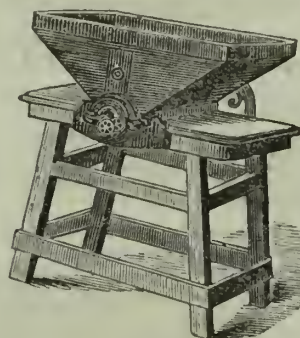
For further information apply to
1v4-3m R. STONE,
422 Battery street, San Francisco.



Three sizes, warranted to clean from 60 to 200 bushels per hour, according to size. Prices, \$40, \$50 and \$75. First Premiums at California State Fairs in 1870 and 1871. Warranted to separate Mustard Seed, Cheat, Barley and Oats, from Wheat. Cleans the Morning Glory Seed from Alfalfa.

Circulars mailed on application. Address
NASH, MILLER & CO.,
Sole Proprietors and Manufacturers, Sacramento, Cal.
N. B.—All the Nash & Cutts Steam Separators are fully warranted. 3v4-15t

THE CELEBRATED CHALLENGE FEED MILL.



For Farm use and Custom work. The only Practical Farm Feed Mill ever invented. Can be used with from one to eight-horse power, and grinds from 250 lbs. to one ton of barley per hour. Price of Mills from \$75 to \$100, according to size. Adapted to Wind, Water, Steam, or Horse Power. The grinding surface is adjustable, and can be replaced in fifteen minutes at an expense of one dollar to one dollar and a quarter. Over 3,000 now in use. Every Mill warranted to give satisfaction. For sale by all leading agricultural firms on the coast. For further particulars send for circular.

M. S. BOWDISH, General Agent,
With Hawley & Co., cor. California and Battery sts.,
18v3-sa San Francisco.

Endless Chain Elevator, FOR RAISING WATER FROM WELLS.

BALL & CRARY, Patentees.



The inventor claims that his ELEVATOR excels any other apparatus that has ever been brought before the public for the purpose of raising water from wells. Its chief merits are: First—The water is obtained from the well in a purer and colder state, for the reason that it is drawn from near the bottom. Second—It is operated with the least difficulty, particularly in lifting a great amount of water from any depth in a given time, as compared with any other mode. Third—It obviates all necessity for going down into the well in putting in the machinery, or for repairing the same, as such labor can be performed at the surface. Fourth—It can be easily taken out of one well and transferred to another. Fifth—It is less liable to get out of repair—but when repairs are necessary they can be easily made by any one; the action made by the Endless Chain and buckets keeps the well properly ventilated; there is no possibility for the person operating it [nor for a child] to fall into the well.

For circulars and particulars address
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2v4-tf Grass Valley, Nevada Co., Cal.

THE FLORENCE



Will sew everything needed in a family, from the heaviest to the lightest fabric.

IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,
Than any other machine.

If there is a Florence Sewing Machine within one thousand miles of San Francisco not working well and giving entire satisfaction, if I am informed of it, it will be attended to without expense of any kind to the owner.

SAMUEL HILL, Agent,
19 New Montgomery Street,
Grand Hotel Building, San Francisco.

Send for Circulars and samples of the work. Active Agents wanted in every place.

THE OLD Maple Leaf Nursery.

Has constant varieties of ORNAMENTAL GREEN and SHRUBS; also a large assortment of Choice Green House plants and Bulbs, and Flower Seeds of all kinds, are for sale by

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

H. K. CUMMINGS, 1858. J. M. MAXWELL 1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission House,
ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer. 4v23-1y

GEORGE HUGHES,
FRUIT, PRODUCE,
And General Commission Merchant,
313 and 315 Washington street,
Between Front and Battery.....SAN FRANCISCO.

HOUSE ESTABLISHED IN 1850.
11v3-6m

WONDERFUL AUTOMATON COW MILKER.

Will Milk any Cow in Two to Four Minutes.

NO LABOR!

Can be used by a child of 12 years. All you have to do is to hold the pail and LET THE MILK RUN. Right for sale. Retail price \$5. Address or apply to

W. WARNER HENRY,
2v4-1m 421 Clay street, San Francisco.

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

WIESTER & CO.,
3v4-3m 17 New Montgomery street, S. F.



IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful TEST. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are,

1st.—A JOINTED PITMAN, which allows the knife or cutter-bar to work on ANY ANGLE without EXTRA STRAIN OR FRICTION.

2d.—It can be run with a STIFF or LIMBER POLE, as DESIRED.

3d.—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.

4th.—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.

5th.—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.

Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow, Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at Marysville by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,

14v2-3m

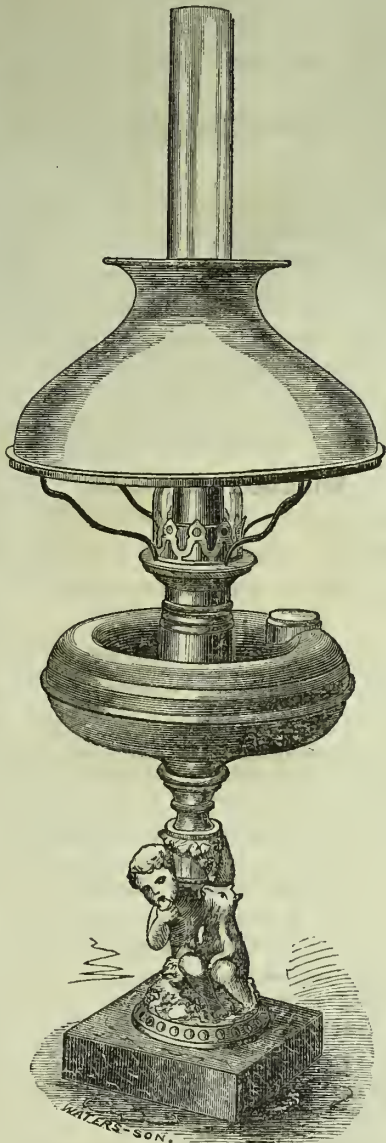
Stockton, Cal.

A New Firm.

JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento. G. H. JEWELL, T. B. FLINT, 16v3-3m

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

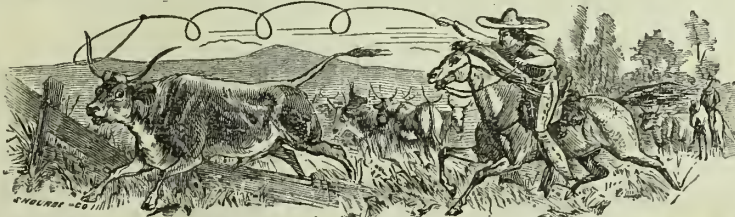
State and County Rights for Sale. Agents Wanted.

The "BRIGHT UNION" and all Trimmings can be had by addressing the Manufacturer and Patentee,

I. L. MERRELL,

No. 148 J Street, Sacramento.

MINING AND HOISTING ROPES. ROUND BELTING.



FULLED RAWHIDE BELTING AND LACING.

The best article in the market. Full Stock of 12 inches wide and less on hand. All sizes made by

H. ROYER, - - - 437 BRANNAN STREET, S. F.

3v25-lambn

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (alike on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

E. W. HAINES, General Agent,

17 New Montgomery street, Grand Hotel Building, SAN FRANCISCO.

Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine, Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address S. WYNKOOP & CO. 2054, Ridge Avenue, or P. O. Box 2726, Philadelphia, Pa. 22v3-3m

O. P. SHEFFIELD. N. W. SPAULDING. J. PATTERSON.



Pacific Saw Manufacturing Co.,

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REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted. 15v3-3m

WILCOX'S IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most Economical of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

STUDEBAKER WAGONS

Have become

The Standard Wagons of the Pacific Coast.

For QUALITY, DURABILITY, LIGHT RUNNING, GOOD PROPORTION, AND EXCELLENT STYLE, They Have no Peer.

IRON AXLE, THIMBLE SKEIN, HEADER AND SPRING WAGONS, Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

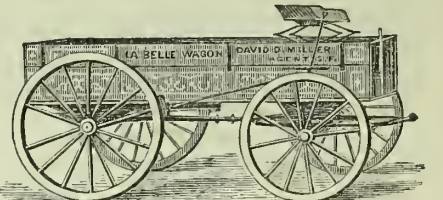
Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed, As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

16v4-3m E. E. AMES, General Agent. Factory and Depot, 217 and 219 K street, SACRAMENTO.

Thimble-Skein Farm Wagons.



JUST RECEIVED FROM THE CELEBRATED ZUFELT & CO., Sheboygan Falls, Wis., established in 1850. Also the

Celebrated La Belle Wagon,

Manufactured by FARNSWORTH, WOODWARD & CO., At Fon du Lac, Wis.

PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.

3 in Thimble Skein. \$120	3 in Running Gear. \$90
3 1/4 " " " 125	3 1/4 " " " 95
3 1/2 " " " 130	3 1/2 " " " 100
4 " " " 140	4 " " " 110

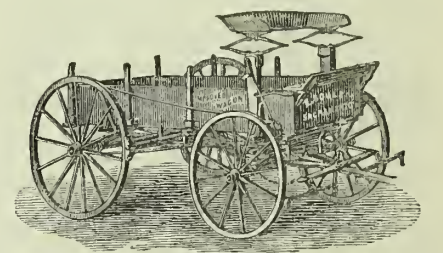
Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

DAVID D. MILLER'S,

IMPORTER AND MANUFACTURER,

715 Market street, near Third, San Francisco. 19v4-9m



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best Improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E SOULE,

San Quentin, Cal.

ap22-3m

THE CALIFORNIA Safety Gas Lamp.



This New Gas Lamp takes the place of the Candle, the Coal Oil Lamp and Coal Gas, and costs only

One-Half Cent per Hour. Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. No CHIMNEY IS REQUIRED.

It makes its own gas as fast as it is required, and when the light is blown out the gas ceases to be generated.

One Burner is Equal to Six Candles. This Lamp burns Refined Petroleum, Gasoline, Danforth's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit.

WIESTER & CO.,

17 New Montgomery street, Grand Hotel, S. F.

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO.,

Manufacturers of and Dealers in

Monuments, Headstones, Tombs,

MANTEL PIECES, ETC.,

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ENGLISH AND CLASSICAL BOARDING SCHOOL. Boys prepared for the Universities or for Business.

Healthy location. New and large Buildings. Military discipline. First grade Teachers.

References in San Francisco: Right Rev. Bishop Kip, Rev. Drs. Lathrop and Tynan, and numerous patrons.

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ILLUSTRATED CIRCULARS FREE.

DEWEY & CO.,
Mining and Scientific Press, S. F.

"Clear as Crystal."



PEBBLES ARE MADE from Rock Crystal cut in slices and ground convex, concave or periscopic, for Spectacles. In Europe and in the Eastern States they are superceding glasses.

Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.

They are COOLER to the Eyes—a very important gain. They are much harder than glass, and DO NOT SCRATCH.

The best quality of Crystal is found in Scotland and the Brazil, and is manufactured into lenses by the best workmen in England and France, for

Thomas Houseworth & Co.,
OPTICIANS,

No. 9 Montgomery street, Lick House,

Where they can be obtained, already fitted, in frames, or may be fitted to order.

Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses.

Illustrated Circular for style of frames sent to any address free.

77 Pebbles sold as such by us, are Warranted.
15v3awbp3m

H & L AXLE GREASE.



The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

HUCKS & LAMBERT.

The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into this business; and as the H & L AXLE GREASE can be obtained by consumers at as

LOW A RATE

As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

HUCKS & LAMBERT

Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of this package, and take no other.
3v24-cowr

MOWER and REAPER SECTIONS

On hand and made to order at Lowest Prices by the

PACIFIC FILE WORKS,
53 Beale Street, S. F.

New FILES on hand. Old FILES Re-Cut.
19v3-2m

Attention, Owners of Horses.



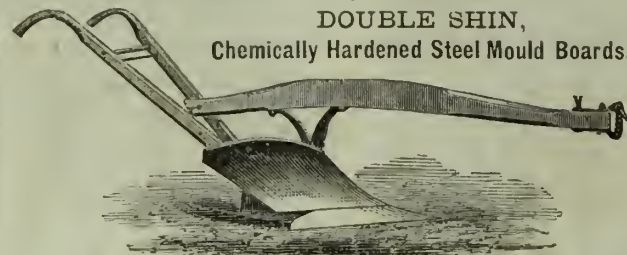
The ZINC COLLAR PAD is guaranteed to cure the worst case of raw and inflamed sore neck in Ten Days, and work the Horse every day, or money refunded; and will not chafe or wear the mane off of the neck. For sale by Saddlery, Engine, For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 cowbp

THE "JONES" PLOW.

Manufactured by the Naperville Agricultural Works, Naperville, Illinois.

First they are unlike other Plows—Because they completely pulverize the soil, and run perfectly true. Because—They all have Adjustable Beams, and CAN BE USED BY EITHER TWO OR THREE HORSES. Because—THEY SCOUR WHERE ALL OTHERS FAIL. Because—THEY DO TWO KINDS OF WORK, thus saving to the farmer ONE PLOW.

Because—They are the lightest draft plow made, and will not kill your horses. Because—every plow is warranted and can be tried, and if it fails may be returned. Because they are honestly made, and will wear one third longer than and the best quality of Lumber. They are HARDENED ALL THROUGH (not case-hardened, or merely hardened on the surface,) but by the use of CHEMICALS KNOWN ONLY TO OURSELVES, we refine the steel and MAKE EVERY MOULD BOARD CLEAR THROUGH AS HARD AS FLINT.



DOUBLE SHIN,
Chemically Hardened Steel Mould Boards.

this common run of plows. Because they ARE VICTORIOUS OVER ALL OTHERS in the various plowing trials in which they have been used. Only the best class of material is used in them—the finest grade of steel

The Jones Plow completely refutes the old notion that no plow can work equally well in stubble or sod. We warrant them to do it in every instance. No matter if every other plow manufacturer has failed to make such a plow. We have succeeded. Let true merit decide; if you have any doubt, TRY THEM—WITH YOUR FAVORITE, and keep the one you like best.

TREADWELL & CO.,

Sole Agents for the Pacific Coast, San Francisco.

ONE DOLLAR A YEAR

—FOR THE—

**PACIFIC COAST
Mercantile Director.**

This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

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TANK MAKING

As their specialty, are now prepared to manufacture
Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood

FOR THE SPECIAL PURPOSE OF MAKING

LARGE

WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.

1,000 to 2,000 gallons, bound with 5 hoops 1 1/2 x 3-16.

2,500 to 4,500 gallons, bound with 4 hoops 2 1/2 x 3-16

4,500 to 7,500 gallons, bound with 5 hoops 2 1/2 x 3-16

2 hoop 2 1/2 x 3-16.

7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 3-16 and 2 hoops 2 1/2 x 3-16.

15,000 to 20,000 gallons, bound with 8 hoops 3x 1/2 and 3 hoops 3x 3-16.

PRICE, - From 11-4 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2 1/2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manholes and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.

REDWOOD CASES (split lumber,) with oak middle piece and gate, from 7 to 9 c. per gallon.

OAK CASES (full stock,) from 12 1/2 to 15 c. per gallon. Send for Price List.

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El Dorado, El Dorado county, California.

5v3-tf



Volume IV.]

SAN FRANCISCO, SATURDAY, AUGUST 3, 1872.

[Number 5.]

Hog Husbandry.

We believe no other farm stock can compare with the hog in its large, immediate, annual returns upon a money investment. We know of men who have realized nice little fortunes from the hog business in a very few years, and from a very small investment of capital. We might have headed our article *swine* husbandry, and so in speaking of cattle, we might say *bovine*; both, however, would look a little like putting on "airs," so that "for short," and real convenience we shall say hog; and though the culture and management of the animal may be looked upon by many as a hoggish business, we can assure all such that the money derived from the business is as clean as any other money.

To raise hogs to the best advantage requires a locality adapted to the peculiar habits of the animal; and this again varies with the mode intended to be pursued in their rearing and fattening for market. The hog is a very accommodating animal; he can live and grow fat upon food given him in his pen, or he can be made to work for his living almost from the time he is a month old, till he is fitted for the market.

Hogs in Grain-fields.

The large grain-grower under certain circumstances, has it in his power to raise hogs cheaply and profitably. If he has a range where they can be kept from growing crops, by fence or river surroundings, yet producing sustenance sufficient if only of clover, to keep them in a tolerably thriving condition until harvest time, and then the fields are in such condition as will allow of the hogs ranging through them, a very profitable business can be realized; because without any cost beyond an occasional supervision of the herd, the whole will maintain a steady, healthy growth till the corn, peas or other material, more particularly intended for their fattening shall be in readiness.

And then the fact that, pork for use in California or other hot climates, is not required to be as fat as it is usually desired in the East, renders the bringing of pork up to a fit condition for the market a comparatively easy and cheap process.

Hogs in the Tules.

The best ranges for hogs during the early season of the year, indeed at any season when they are not up for fattening, as furnishing the largest amount of available nutriment at comparatively no cost, is unquestionably the low grounds around and among our tules and marshes; and whatever the food may be that hogs obtain from such grounds, the fact that they invariably thrive when having access to them is sufficient evidence of their value as natural feeding grounds.

If the hog grower would introduce into these low grounds, the chufa or earth almond, and the artichoke, as late fall and winter feed for their stock hogs, they would find them, we believe, unsurpassed in value by any other description of cheap, available food. Hogs eat them greedily, and owing to their highly nutritive qualities, rapidly fatten upon or make an easy living, being themselves their own harvesters.

Their Rapid Increase.

When we look at the very rapid increase from a given number of old sows—for none other than old ones should be permitted to rear pigs—we are no longer surprised that money is still annually coined by those engaged in the business. From sows two years old and upwards, it is perfectly safe to calculate upon two litters of pigs each year, numbering five each or an increase of ten to one, and from very

many sows a larger number can be safely calculated upon.

What other farm stock can at all compare with this in natural increase? Another thing is, they attain to nearly full size in a single year, quite unlike horses or neat cattle, that require three or four years to arrive at a like maturity.

The Future of the Business.

The steady annual increase of the consumption of pork, incident to our increasing population and particularly that of the Chinese, who are great consumers of pork, and the continued importations of the cured meat and even live hogs in large numbers from the Eastern States, are certainly so many evidences that for a long time to come, hog husbandry will rank among the most lucrative in which the Pacific Coast farmer, favorably situated for its prosecution, can possibly engage.

Big Trees of California.

In early times there used to be a good deal said about the cedars of Lebanon, of certain Cyprus trees, and the great Chestnut of Mount Vesuvius, the celebrated Banyan tree, indeed of

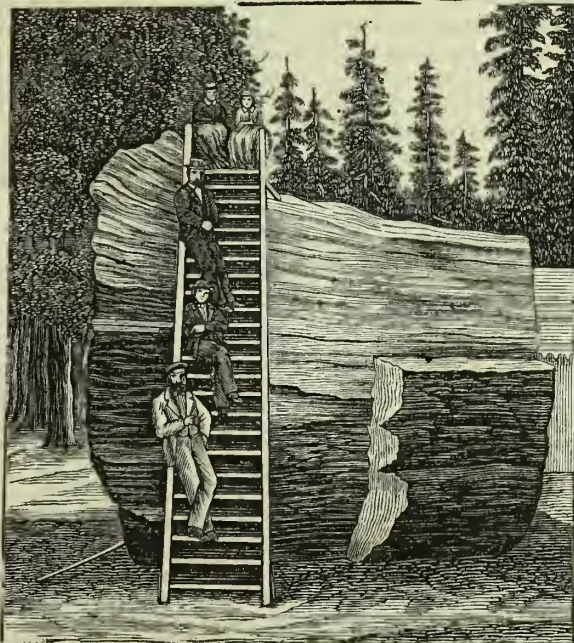
We have allowed a portion of the bark to remain on a small part of the trunk as showing its relative thickness, which is from fifteen to twenty inches.

These trees are among the many objects visited by all travelers who come to look upon the wonderful scenes that make California famous.

Vine Growers' Association.

A called meeting of the California Vine Growers' Association was held at the pavilion in Sacramento on Thursday last. In the absence of the President and Vice-President, the Hon. Robert Chalmers of El Dorado was called to the chair. After the minutes of the previous meeting were read and approved, Secretary Hoag read the list of premiums on wine, braudy, grapes, etc., as agreed upon by the Board of Directors.

J. R. Snyder of Sonoma called attention to the fact that premiums were offered for wines and brandies of the vintage and manufacture of 1870 and 1871 only. The restriction to the



SEQUOIA OR WASHINGTONIA GIGANTEA.

many and all that were then considered remarkable for size. But now all these seem dwarfed and comparatively forgotten while contemplating the wonderful "Washingtonia Gigantea" of California. These trees are, many of them more than three hundred feet in height and a few over four hundred feet, and one, the largest of all, which was prostrate when the grove was first discovered, could not have been less than four hundred and thirty-five feet.

As the tree now lies, it measures one hundred and nine feet in circumference near the roots. It is nearly two hundred feet to the first branch and hollow, so that a person can ride a horse through its entire length and come out at a knot-hole. There are very many of these trees now in full health and vigor measuring from 25 to 30 feet in diameter or from 75 to 95 feet in circumference above the roots.

A section of one of these wonderful trees is represented in our illustration; it was felled by being bored off with augers, and occupied five men for twenty-two days in felling it. The ladder which is represented as resting against it, is exactly thirty feet in length so that a better conception of its real diameter can be had from it, than by any word description.

last two years had given very general dissatisfaction so far as he was informed. He knew of no reason why the vintage of earlier date should be excluded.

A general discussion ensued, in which W. McPherson Hill and Leonard Goss of Sonoma; I. N. Hoag, R. B. Blowers and N. Wychoff of Yolo; R. Chalmers of El Dorado; and J. F. Bailey, R. Beck, S. L. Wilson, George Johnson, J. H. Carroll, C. W. Hoyt and E. F. Aiken of Sacramento participated. It was determined to review the list of premiums, and, on account of the scarcity of money, reduce some of those already named and offer diplomas for certain classes of wines. The meeting finally agreed upon an amended list of premiums—which will be found in our advertising columns.

Representations of Grapes.

The subject of procuring for the use of the members of the association chromo pictures of different varieties of grapes raised in the State was discussed at length. It was finally decided to ask for proposals from artists for furnishing in oil colors some fifty pictures of different clusters of grapes from which the chromos may be taken. J. H. Carroll, George Johnson and I. N. Hoag were added to a committee

previously appointed to take charge of the subject. This committee will ask for specimens from the competing artists and award the contract to the most acceptable competitor.

They have some \$600 in their hands to be awarded in premiums to the successful competitor.

When the paintings are obtained they will have chromos struck off and bound in a book, together with a full description of the grapes, their habits, time of ripening, etc. The book will be of great value.

The association also amended some of the rules which had been agreed on by the Board of Directors. As amended, they will be published in pamphlet form, with the list of premiums, and circulated free by the Secretary of the Society.

OUR RIPE FRUITS.—We are in the midst of an abundance of ripe fruits of wonderful excellence. Strawberries still continue in goodly quantity; cherries are abundant, and never before equalled; apricots are plentiful and cheap; plums of numberless varieties are also abundant and low in price; peaches are coming in more freely than ever before known at this season of the year, quality fair, but some of them seem touched with blight in appearance, if it does not affect their flavor; it is new to this fruit, and is seen in an irregular brown patch upon the skin. It is generally attributed to an attempt of nature to give them simply the Dolly Varden touch.

Apples, figs, watermelons, canteloups, blackberries, currants, raspberries, tomatoes, squash, new sweet potatoes and cucumbers, with green corn, peas and beans are simply among the common and abundant things to be seen on every corner.

STATE FAIR.—From present indications the coming fair of the State Agricultural Society will be a superior exhibition in every department. In every section of the State and among the representatives of all the industries, active preparations are being made for the exhibition. The Board of Directors and all the officers of the society are preparing to meet general expectations and from their well known ability and experience in this line, it is safe to calculate that their part of the work will be timely, and well done.

THOROUGHbred SHEEP COMING.—Robert Beck, of Sacramento, has received advices that his lot of Silesian sheep from William Chamberlain, of Red Hook, New York, are on their way and will arrive about the 10th of August. He will also receive a few days later, two car loads of the best Spanish Merino sheep that can be found in the Eastern States, selected by W. T. Wilson of Ohio. Here is an opportunity for improving the flocks of the Pacific Coast.

THE CALIFORNIA COTTON GROWERS' ASSOCIATION.—The crop of cotton now maturing on Kern Island, which embraces 300 acres, is developing itself with great satisfaction to the company, and it is the great center of admiration at Bakersfield. The army worm has been awaiting railroad connection with the locality, and it appears not to have yet arrived at the Kern Island Head Quarters of the Cotton Growers' Association.

THE AUSTRALIAN HARVESTER.—We went to Livermore Valley on Tuesday last to see the working of the newly introduced Australian reaper. To say that it worked well, is not enough in its praise; it worked admirably and to the entire satisfaction of those who witnessed its operation. A full notice will be given of the peculiarities and properties of the machine as soon as we can execute the proper engraving to accompany it.

CORRESPONDENCE.

Los Angeles County.

EDITORS PACIFIC RURAL PRESS:—Citizens of Los Angeles County may with some reason claim theirs as the garden of the Pacific Coast; and although there is at present a fair share of energy displayed in the development of its resources, it is only in its infancy.

A few hundred Bannings (by the way, the General came rushing out of his back office in high dudgeon because your correspondent, he thought, was insinuating that he was so far behind the age, as to be without the RURAL) added to the population of Southern California would, in a very few years, place us in the front rank in regard to productive industries. Among the manifold projects that occupies his busy brain, I was particularly interested in a propeller pump which the general was about putting in operation for irrigating purposes, of a capacity of twenty-seven hundred gallons per minute. Very simple, only three parts, the tube, the screw or propeller, and the air tight gear of the elbow. We hope it may realize all that is expected of it by the stirring and sanguine General.

While upon the subject of irrigation, it may be noted that an old favorite of the miners of this coast, C. L. Strong, familiarly known in Nevada as Charley Strong, has expended \$12,000 in getting an irrigating ditch to his ranch, although he has a very fine crop of grain without it this season, principally rye.

Irrigating Corn.

An experiment made last season in Los Nietos by F. M. Mathew, in irrigation, may be held to show that that mode of cultivation is not always the best. Eighty acres was divided fairly,—one half of which was irrigated, the other, not. The result was six bushels more corn, and weighing $4\frac{1}{2}$ lbs. more per bushel for each acre not irrigated; the whole was treated alike in all other respects.

Before leaving the water subject it may be well to note that there is a section of country below Santa Ana, partly owned by the McFaddens, the owners of which propose to sell lands in tracts to suit, furnishing artesian water with each tract. The water is of the purest. The Richmond Land and Irrigation Co., represented here by W. T. Glassell, also propose to dispose of lands in a similar way.

Legislation Needed.

This water question is eventually to assume gigantic proportions in this State, and some careful legislation, immediately defining rights, which under our newly developed system of irrigation are quite indefinite, will save a world of trouble and litigation in the future. But it is now getting to be generally understood that laws are so artfully contrived, as to be fruitful to the originators, and manipulators, if not always resulting in justice to the people at large.

Wheat and oats may be said to be a failure in most places in this county, especially the Norway oats, which are pronounced without exception, to be unfit for hay, and altogether unprofitable for grain. A grain that bids fair to fill an important place here, is the Russian or bald barley, a nice plump grain, free from smut or rust, and which, if properly handled, will furnish a most wholesome food for man or beast, but more particularly for man.

It appears that in many communities all modes are studied, of producing fine breeds of animals; but as a man recently remarked who came from an old and well known section for fine horses, "they can beat the nation in breeding horses but they have got to let down on their men." Now why not attend a little to matters connected with the improvement of the breeds of men?

This Russian or pearl barley, is in its nature calculated to conduce toward that end by furnishing a cheap and wholesome food, used in soup or made into a drink, by boiling a handful two hours in two quarts of water, to be drunk cold; or ground, not too fine and unbolled, made into bread. This grain is one of the most valuable cereals for any country, but especially so where wheat has a tendency to rust or smut. It is more prolific and equally easy to clean from hull or chaff as wheat; but there may be one objection to it, it has not cost a dollar per quart for seed, like "Startle Oats," or Simpkin's early thoroughbred potatoes, that were just seven minutes earlier than the earliest variety known.

Los Angeles, July 15th, 1872.

Riverside Settlement.

EDS. PRESS:—In your paper of the 6th inst. I noticed a letter of H. M. Shaw, of San Diego, which goes quite out of its way to mention unfavorably the Riverside settlement. To those of us who have tried San Diego for several years, and left it for Riverside, his little fling seems especially absurd. He says: "Passing from San Bernardino toward he southwest, down the Santa Ana, we leave Riverside with its parched fields and its victimized hunters

for earthly paradises, on our left." Now permit me to say that if Mr. Shaw had visited Riverside, instead of passing down on the opposite side of the river two miles away, he would have known much more about it. He does not seem to have learned that it is a part of the trade of interested land dealers in other localities to disparage places that are drawing settlers from them. Now if he had visited Riverside we would have shown him fields of wheat, barley and corn, that are unsurpassed in the lower counties of California; vegetables that would do honor to any country, and so abundant that they are already beginning to supply San Bernardino market; and young trees that would have astonished him with their numbers and luxuriant growth. This settlement that has had but one year in which to cultivate trees and vines, can already supply San Bernardino and even San Diego if they desire, with many varieties of choice trees, at Los Angeles prices, and of much larger growth than is common in the State. Orange trees of one year's growth, three feet high; lemon, four feet, and limes three feet, from seed the present year; peach trees four feet high; pepper trees, three feet; Australian blue gum, two and one-half feet; Acacias, two and one-half feet; Monterey cypress, one foot; figs, from cuttings the present season, two and one-half feet, and bananas that have grown more than four feet from the bulbs, planted in February, and will doubtless bear fruit the present season. We have here the best of soil, a good climate and an abundance of water for irrigation, and in addition to that a public library, one of the best school houses in the county, a lyceum and an intelligent population. The people of Riverside are not only content, but are delighted with their place and prospects, and do not seek to detract from other places in order to build up their own.

Yours truly

G. D. CARLETON.

July 15th, 1872.

White River, Nevada.

Nevada as a Fruit Growing Country.

EDITORS PRESS:—In the face of opposing views as to the adaptability of this climate and altitude to the growing of fruit successfully, I have made the experiment, and that others may do likewise, I will give my opinion on the subject.

I find through all the rolling country and even on the high and rugged mountains, many wild fruits and berries, maturing; thus through nature, we are taught that here as elsewhere our tables may be supplied with nearly all the fruits of the temperate zones. We find the wild cherry, gooseberry, currants, and serviceberry in great abundance, and this too after one of the coolest springs and summers we have had for several years; I find, however, that the places where wild fruits grow are not the warmest and most sunny locations, but as a rule, are the northern exposures, hence to grow fruits successfully we must not only select cool, northern slopes, but places where dry winds can keep off the killing spring frosts, and where the sun has full play during the summer months.

I received a package of fruit scions, and grape vines last April, consisting of apples, peaches, cherries, plums, pears, and grapes and a few strawberry sets, with many cuttings, all of which are growing finely and bid fair to do well; they have borne some fine well matured strawberries but in place of ripening in April, it was June, so it may be with all fruits, but what is the difference so we have the fruits.

I remember of planting fruit trees in California in the early settling of the State, and while California was thought to be worthless except for the gold placers. I was ridiculed for my folly; this was in El Dorado county, at an elevation of 2,000 ft., now one of the finest fruit growing countries to be found. I predict the same for Nevada, and my advice to every person with a home is to plant fruit, shade and timber trees, at the proper time, say March or April, send for trees, cuttings, and seed, the latter can be sent by mail when less than four pounds; if we will do this, in a very few years, Nevada will be what California now is, a State to be sought after for wealth, health and a comfortable home. We have no right to conclude that because Nevada is unlike many other countries deficient in water, large timber, and with a dry climate that it is unfit for habitation; in my opinion no country was ever opened to settlement with a more hopeful future.

Rock.

Wines of California.

[Read before the Napa Wine Growers Association, by Maj. Snyder.]

We have observed an article recently published, stating that many of our largest wine growers and wine makers are in the Atlantic States looking for a market for their wines; and that the principal objection against our wines is that they are too strong in alcohol.

Also that our wines contain all the way from 15 to 20 per cent. of alcohol; and that the cheap and popular French and German wines contain only from 8 to 10 per cent. It is stated that the German Rhenish wine contains only 7 per cent. of alcohol.

The statement as regards the strength of California wines does not apply to the counties north and bordering on the bay of San Francisco.

The alcoholic strength of European wines given by Prof. Brande and taken from Redding on wines which is considered good statistical authority is as follows:

	Per cent. of Alcohol.
Burgundy average of 4 samples.....	14.37
do. lowest of the 4.....	11.95
do. highest of the 4.....	16.60
Champagne 4 samples.....	12.61
do. still.....	13.80
do. Mousseux.....	12.80
Cote Rotie.....	12.32
Frontignan.....	12.70
Red Hermitage.....	12.32
Sauterne.....	14.22
White Hermitage.....	17.43
Vin de Grand.....	13.94
Vin de Grand 2d sample.....	12.80
Claret, lowest of several samples.....	12.91
Hockheimer.....	14.37
do.....	13.00
do. Old.....	8.88
Rudesheimer.....	12.22

The average temperature of Sonoma Valley is about the same as that of the Burgundy district, and therefore give the same proportions of sugar; and in France it is well known that they require 24 per cent. of saccharine matter to make a good wine; that would yield if thoroughly fermented 12 per cent. of pure alcohol. It will be found on inspection that the average strength of our wines is not above those of Europe; say 12 per cent. on the average.

The following assays of wines made in Sonoma Valley were made by myself from samples furnished me by the parties whose names stand opposite the percentage of strength.

	Per centage of Alcohol.
White, Mr. Craig, Vintage 1867, Foreign Grapes.....	14 4-10
" " " " 1870, Mission.....	13 4-10
" Dressel & Gundalock 1861.....	14 4-10
" " " " 1870.....	13 3-10
" " " " 1862.....	12 5-10
" J. R. Snyder 1867.....	13 6-10
" " " " 1865, Mission.....	12 5-10
" " " " 1866.....	12 6-10
" " " " 1867.....	13 3-10
" " " " 1868.....	12 8-10
" A. F. Harazythy 1871, Foreign.....	11 5-10
" " " " 1870, Foreign.....	12 4-10
Red Buena Vista 1866.....	16 5-10
White " " 1871.....	13 1-10
Red " " 1871.....	12 6-10
White, H. Winkle 1869, Mission.....	13 2-10
" " " " 1871, Mission.....	12 5-10
" L. Goss 1871, Zinfandel.....	12 8-10

To reduce the strength of the wine it has been suggested that an addition of a small quantity of water be made to the must prior to fermentation; this has been tried and found to detract from the wine those fine qualities that nature alone can impart. It would be better to gather the grapes before they get too ripe and contain an excess of sugar by being left too long on the vines until a portion of the watery substance has evaporated.

If water must be added to reduce the strength, it would be better to add it when the wine is used at the table.

The French generally add a portion of water to their red wines at the table, more particularly to claret. The bad effects said to be produced by the use of California wines is in consequence of their newness.

All wines, that have not age, as soon as introduced into the stomach, commence a fermentation, and if persons would place the wines they purchase of the more temperature as the stomach, the result would be apparent.

California will never have any reputation for good wines, as a wine producing country, until we have more capital in the business, and the wine is kept until it has age and becomes wholesome.

Under the present system we will have no better reputation in ten years from this than we have now, and as for talking about a competition with foreign wines it is simply nonsense, under such circumstances. All persons of sense know that new wines are unwholesome, and where there is one

gallon of wine fit to go in a man's stomach, furnished to consumers, there are hundreds that are not so.

We speak in no disparagement of the wine merchants of California; it is presumed they do all they can, and it is to their interest as well as that of the producer to establish a high reputation for our wines, which reputation our wines do not have in the Atlantic States.

We have been told by persons who have travelled extensively in the East, that there are no wines offered to the purchaser such as they drank at the cellars in California. This is constantly repeated by all the visitors that come into the valley of Sonoma, and it is presumed that the same state of affairs exist elsewhere in the State. It is a very easy matter to give statistics to substantiate what we say, for every gallon of wine passed out of the valley of Sonoma can be accounted for and traced to the consumer.

The encouragement which should be given to this branch of industry by the wealthy classes of California has never yet been perceptible to the producer, and we have been informed that one gentleman alone has \$40,000 worth of foreign wines in his cellar and not one bottle of California wine among the stock, and California wine is never seen on his table; and others of the wealthy classes think anything weaker than brandy only fit for invalids. And still you will find all these persons asking for money for railroads to bring emigration and business; setting forth in glowing terms the richness of our lands and salubrity of the climate and their adaptation to the growth of all kinds of productions.

They have land for sale and houses for rent, but no use for our domestic products, the very source of the real wealth of California.

It is true that manufactures have been encouraged to some extent, but nevertheless the balance of trade is against us and has been for years.

The Government too has taken the same track and given the iron work of the United States Branch Mint to parties in the Atlantic States when it should have gone into the hands of our home artisans.

These are subjects that cannot be to often agitated by the grape growers and wine makers of the State, and if they understand their own business and interests they will agitate these subjects and agitate them violently.

We strongly urge them to look into all the business departments of their business channels not only at home but abroad; wherever the wine goes there is their business.

Let there be no lukewarmness about the matter; we have not been working enough abroad; we have not obtained that information from abroad relative to the business that is of vast importance to us; it is true that some of our members have gone on a tour through the Eastern and Western States, and have written back their experience about the wine interests there, and it will not be long until we are better posted as to our interests than we are now.

We hope that some of our members will turn their attention to the matter of statistics from the East, as well as those at home. We have had but very few reports as regards statistics, although we have a standing committee on that subject.

We have thought proper to make this statement to the association about the strength of our wines, as an erroneous impression has gone abroad that our wines are too strong.

There is another matter that we wish to speak of; it is as well for the grape growers and the wine makers to know that they have a fight to make against the foreign importers of wines. And we have to make the same fight against our countrymen who encourage the foreign article and exclude the native product. This is an uphill business, and the hotter the fire and the heavier the blows the better the steel. A thing that is not worth fighting for is not worth having, so gentlemen take off your coats and develop your muscle for the contest.

HOLDING BACK THE MILK.—F. Gross, Gordonville, Va., says in Switzerland a wet rag is laid on the back of a cow that holds back her milk, and is a very good remedy. Another correspondent says a weight laid on the back—as a bag of earth or sand, or a chain in the bag—will make her give her milk. As all the remedies in vogue for this vice relate to an application to the back, there probably may be something in it. We never could succeed in it, and shall be glad to hear more about it from those who have.

MECHANICAL & SCIENTIFIC.

A Manageable Balloon.

The Advocates of the possibility of utilizing the balloon for the every-day purposes of life have been greatly encouraged by the result of a series of experiments lately made in Paris by M. Dupuy de Lome, and recently communicated to the Academy of Sciences. This gentleman is an eminent French engineer, and well acquainted with both the theory and practice of his profession; and his attention was especially called, during the siege of Paris, to the importance of having a balloon which possessed some power of steerage.

He has completed the first construction according to his new plan, and made, as he claims, entirely successful experiments with it. The balloon is in the shape of an enormous egg, the longer axis is horizontal, with an oblong bar suspended from it. The total length is 118 feet, and its diameter at the point of greatest circumference 49 feet. The rudder by which the balloon is steered is a plain triangular surface, made of unvarnished calico, and constructed so as to turn easily on its forward extremity. The car is of wicker-work, containing a windlass for the screw, eight men to manage it, and is capable of carrying fourteen persons.

The rudder is fixed to the balloon itself, and the screw is below it and immediately attached to the car, and having only two blades, so that when the ground is touched they can be placed horizontally to escape injury. The windlass which turns the screw is worked by four to eight men. The envelope of the balloon is composed of white silk.

The constructor does not pretend to be able to make a direct movement against the wind, but only to deviate from its direct set when running before it. He expects to be able to tack to the right or left, but does not hope to be able to beat to windward. There is a second balloon attachment to the bottom of the main balloon, forming a kind of compartment, occupying about one-tenth of the cubic space of the balloon, and serving to keep it stiff and of the required shape.

In the experimental trip of M. De Lome a half gale was blowing, and the result answered entirely to his expectations. The screw drove the balloon about five miles an hour quicker than the wind was blowing, and by the use of the rudder the course of the balloon could be altered eleven degrees, either way, from the set of the wind.

Soldering Fluids.

There are several soldering fluids in use. Among these is one for

Soldering Iron and Steel.

Which we quote as follows: "Take a solution of phosphoric acid in alcohol at 80 per cent. The parts to be soldered are moistened with this solution either by dipping in or with a hair brush. Another solution is that of the double chloride of zinc and ammonium, to be made by dissolving equal parts by weight of zinc and sal ammoniac in strong hydrochloric acid, and evaporating to dryness at a gentle heat. The saline residue is afterward dissolved in water, so as to make a strong solution. It is obvious that after soldering, the metal has to be carefully cleaned so as to remove any excess of adhering soldering salt solution, because both the liquids here alluded to would, if left on the iron or steel, cause it to rust.

Alloy Suited for Soldering Steel and Iron to Brass.

Take 3 parts of tin, 39½ of copper, and 7½ of zinc. It is stated, by this alloy in molten state, steel and iron, as well as these and brass, can be so joined together as to prevent any breakage.

IRON IN THE BLOOD.—Boussingault finds the amount of metallic iron in aliments as follows: the minimum, in carrots, 0.0009 gram; the maximum, in the blood of hogs, 0.0534; in beer, .0040. In vertebrates the quantity of iron does not exceed a thousandth of the weight; in invertebrates, probably not four ten-thousandths. It is usual to attribute the red color of the blood to the presence of iron. Yet the white blood of invertebrates contains almost as much iron as the red of vertebrates. Also, plants not green, like mushrooms, contain as much iron as the green plants. Boussingault concludes that of all substances the blood is that which contains the largest amount of iron, and of assimilable iron, since it has already been assimilated.

COPPER IN COCOA AND CHOCOLATE.—Careful chemical analyses show that cocoa and chocolate always contain a small percentage of copper. The husks of the cocoa have been found to contain as high as 0.025 per cent of copper, while the kernel of the bean only contained 0.004. Samples of chocolate contained 0.0125 of copper. Substances containing copper, even in the smallest proportions, cannot be very desirable for the diet of invalids, for which the above articles are quite extensively used.

A New Motive Power for Ships.

The *Liverpool Albion* reports that recently a number of gentlemen interested in shipping met at Canada Basin to examine a new means of propelling ships, which has been invented by Mr. J. J. Allingham, of Hamilton-road, Everton. Mr. Allingham's idea is to make the waves, acting upon the hull, propel the ship; and this he proposes to do by a very novel contrivance. Beneath the keel of the vessel he would fix two oblong steel frames, each fitted with two sets of blades to open and shut crosswise. One frame he would secure to the forepart, and the other to the stern. Both the frames would be fixed at an angle. When the vessel rises on the sea, the pressure of the water upon the frames would of necessity force her forward; and when she sank, the blades, opening, would form the opposite angle, and the outward motion would thus be continued. The apparatus would also have the effect of steadying her. When she rolled over to the right, the blades on the left side of the frame being shut, the frames would tend to bring her back to the perpendicular; and, when she rolled to the left, the closing of the blades on the right side would have a similar effect. The angles of the frame would have to be increased or lessened, according to the state of the weather. To stop the vessel it would be simply necessary to close the blades in the frames. The action of the appliance depends entirely upon the motion of the waves; but at sea it is rarely the case that there is not a sufficient motion in the water to raise a vessel several feet.

The inventor believes that the apparatus would be a sufficient propelling power for ships not required to travel at a great speed; but would supply ships with a limited quantity of rigging as auxiliary power, and to provide against accident. The working of the invention was shown upon a model ship seven feet in length. The little vessel held its way against the tide, and, even in comparatively calm water, traveling at considerable speed. The opinion of the spectators seemed to be that the invention is in a somewhat crude state at present; but that it is founded upon a sound principle which, skillfully applied, would be of great value to the mercantile marine.

AN IMMENSE BRIDGE STRUCTURE.—Our country has some vast structures comparatively unknown. The Tensas and Mobile bridge, or bridges, on the Mobile and Montgomery Railroad, in Alabama, extends from Tensas station, on the Mobile and Montgomery road, to the city of Mobile, a distance of fifteen miles, crossing both the Mobile and Tensas rivers, and including ten draws, one for each of the navigable channels into which the rivers are divided. The bridge itself is constructed of wood, but its pillars or supporters are iron cylinders, which rest on a solid surface of wooden piles, driven down evenly with the bottom of the stream and the mud of the intervening morasses. It has been three years in the course of construction, at a cost of about \$1,500,000; and now that it has been successfully completed, it is perhaps the longest structure on the globe.

THE WEATHER AND THE GULF STREAM.—It is worthy of notice that although the weather during the last few months has been altogether remarkable—the winter unusually mild, and some of the spring months singularly bleak—we have heard scarcely anything of our once familiar friend the Gulf Stream. Those who used to be most ready to ascribe all weather peculiarities to its influence, seem afraid now even to mention its name. The notion has spread abroad, that the Gulf stream is a detected impostor, a convicted sham; having no more to do with our climate (or rather with our weather), than "with the ripening of oranges at Naples, or the maintenance of Catholicism at Rome."

USE OF POTASSIUM IN SOILS.—According to Nobbé, the presence of potassium in soils is necessary in order to enable the chlorophyll grains of the leaves to form starch, sodium and lithium being unable to replace potassium in this function, the latter indeed being actually injurious. He has also ascertained that the different combinations of potassium vary very much in their value, the chloride being by far the most efficacious.

PUTTING TIRES ON WAGON WHEELS.—A mechanic gives the following method of so putting tires on wagon wheels, that they will not get loose and require resetting: I use a long cast-iron pan or dish made for the purpose; linseed oil is brought to a boiling heat, the wheel is placed on a stick over the dish, so as to hang in the oil, each fellow an hour. The timber should be dry, as green timber will not take the oil.

MOVING RAILROAD TRAINS BY SAIL.—The Peteler Portable Railroad track has been laid down by the party engaged in constructing Matagora Light-house, and transportation has been greatly facilitated by using a sail on the cars. As great a speed as a mile in 2½ minutes has thus been attained, and it was found that the cars would sail almost as close to the wind as a boat.

ARCHITECTURAL ERROR.—A modern architect says we should no longer lath and plaster our houses; other modes of finish are more desirable. By the present system we build one house for ourselves, and two for the rats. No one can controvert the last assertion.

HOME AND FARM.

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

I doubt if it is possible to train children with the right mixture of firmness and fairness, unless we keep up a lively remembrance of our own childish experiences.

Reaching the middle-ground of life we are able to look both ways, and ought to have sense and judgment enough to determine what is of real advantage and highest value in the formation of character; and whatever we remember that we wish might have been different and pleasanter for ourselves, can we not without grudging, turn it to account for the benefit of our children? Some people use the

Back Track of Memory

For a most disagreeable purpose. They drag up from misty childhood the most astonishing examples of their own smartness, industry and precocity, and use them with unsparing tongue to lash their children with. It is possible for stories to be interesting that begin with the words—"When I was of your age I"—but 'if this style of narration is made to take the place of the ancient birchen rod, and is flourished unsparingly, *but without real application to the case in hand*, it soon loses all effect and becomes stale, flat and unprofitable in the ears of the rising generation.

Even children can see that they should not be blamed for non-performance of tasks that no longer exist; and if loving parents aim to stimulate the ambition of boys and girls with stories of long ago, they must serve up those model traditions with plenty of good-natured spice and a keen discrimination of the difference between "now and then."

Some of us can remember the melancholy days that came "the saddest of the year," when potatoes without poetry were presented for youthful manipulation. Ah, those nipping October mornings when we marched with bare feet over frosty fields day after day, and all day long trained youthful muscles in the homely art of digging and picking potatoes. The work was just the thing for us; but shoes and stockings, good, firm hoes, and baskets with handles would have given a more comfortable "tone" to the impressions just then forming with regard to farm labor.

Picking stones in early spring-time—hoeing corn when summer was fresh and splendid—bearing the burden and heat of the day in the hay-field and harvest—cleaning out frozen stables in mid-winter—helping at all sorts of work outdoors and indoors—this was the discipline of farm-children when I was young and I note its differing results in men and women of to-day. Some make the grave mistake of excusing their children from all routine of duties, upon the plea that their own childhood was altogether too thickset with uncongenial "chores." Others sternly indorse "the way our fathers trod," and shake their heads sadly over the generation which has no such rugged road to travel over.

'Don't be in too Much of a Hurry.

Our beloved country offers so many examples of stout-hearted poverty trudging straight upward to the tip-top results of high-est prosperity, that we are apt to be dazzled and forget that average humanity must be satisfied with a more hum-drum, but also more comfortable rate of progression.

At the "Old Sem," in Newbury, Vt., it was the fashion each spring and fall term for the whole school to climb to the top of Mount Pisgah or, as it was more modestly known, Prospect Hill. A few venturesome spirits were always ready to swarm up the rocky face of the bluff, risking their necks and tearing their clothes for the sake of being the first at the top; and there—spent and lolling—they were always found by the throng who were content to go up the winding way and reach safely and gradually the same commanding position.

So the rough-and-ready climbers in life will often pin their faith to the boulders, bruises and brambles that beset their upward course, and will even sniff loftily at the milk-and-water souls who choose to avoid those "means of grace," and save

their energies from such useless wear and tear.

Not that rugged experiences are useless in every case; nay, they work over and over again as lovely miracles, as the jeweler who takes your "diamond in the rough," and shows you presently a perfect gem. But "roughing it" will not always yield such shining results; and when the roughee presents himself for our admiration, heavy with dollars and self-conceit, we are not all ready to applaud when he cries out. "O, you big fools! why don't you go and do as I have done? Rise in the world by hard knocks! that's the way—hard knocks pay!"

Yes, hard knocks pay if they give us self-reliance and fortitude; if they broaden instead of hardening our sympathies; if they knock out of us arrogance and self-conceit, instead of putting more in.

Poverty Not Unfrequently a Blessing.

Just here I opened a book (from the Farmers' Club Library), entitled, "Farming for Boys"—such an excellent book as deserves a place in all your homes. On page 232 Uncle Benny reads to the boys: "Poverty is one of the best tests of human quality in existence. It demonstrates stuff and stamina. A young man who cannot stand the test is not worth anything. He cannot rise above a drudge or a pauper. * * * Poverty saves a thousand times more than it ruins; for it only ruins those who are not particularly worth saving, while it saves multitudes of those whom wealth would have ruined."

And there follows much more of the same sturdy doctrine that has the genuine ring, and I like it, but cannot quite heartily say amen to it. For while I remember many characters that have come out beautifully from a thorough course of poverty, grind and hard knocks, I recall several others that would have done better on a smaller allowance of those excellent tonics; and I believe that poverty and ignorance combined ruined thousands who are just as well worth saving as the rest of us.

So, for the sake of our children we may pray with ancient Agar—"Give me neither poverty nor riches." Also for their sake we must recall personal experience and all we have learned of human nature, growing or grown; for we don't want to spoil them by over-indulgence, and we don't want to put in the stimulating hard knocks at such a rate as to make their young lives hard and dry, and barren of jollity. I hope we all want to give them such book-education as will place them fairly with other intelligent men and women; and such a home-training of head and hands as will enable them to fight poverty if they must, and come off victorious; for it should be as possible in this age as in any other to teach a child industry and fidelity, and those two lessons well engrafted on a sound constitution will make sure growth and bear choice fruit.

At least, let no one bemoan the past, belittle the present and distrust the future by believing that the present generation is spoiled and "done for," because it cannot be put through exactly the same line of labor that once excited our own youthful ambition or—detestation.

Have we not met people who are doing their share of life-work fairly and honestly, but will frankly "own up" that as children they were "awful shirks" as to special tasks then set for them? They spent much energy in scowls, growls and tricks of discontent that sorely grieved the parents, who failed to see that they were forcing the children into wrong grooves, and working "against the grain" of nature.

Patience and Careful Study of Dispositions

Are needed in the family circle more than anywhere else in the world; and it is a pity so few parents will take the trouble of a genuine interest in the growth of character that goes right on under their eyes.

They fail to realize how soon the little folks will be big folks—grown away from parental influence—men and women who glorious country. This sounds a little like Fourth of July oration, but is good for us to remember all the year round. There is reason to believe that our farm boys and must in turn make or mar the future of our girls, if fairly trained and taught, may stand in the front ranks of those bright and strong men and women who will shape the future and guide the destiny of millions yet unborn. And as in the past, so it may happen again that farm boys and girls will make their way to the front unhelped by anybody, for a strong growth is sometimes found in the most neglected corners; but this fact does not prevent our wise heads from urging thorough cultivation of all farm products.

FARMERS IN COUNCIL.

Oakland Farming, Horticultural and Industrial Club.

The usual semi-monthly meeting of the above society was held in the lecture-room of the University on Friday evening, July 26th. Professor Carr occupied the chair. Owing to the united charms of music and politics, (the Republican meeting being held a short distance away on Broadway street,) the attendance was at first rather slim, but towards the close there was quite a respectable attendance, including a large number of ladies who took great interest in the proceedings. After the reading of the minutes, Mr. Dewey, the Secretary, briefly explained a lengthy communication from Alexander Campbell, of Sacramento, with plans and drawings showing the designs of his improved steam plowing apparatus, on Fowler's English system, recently illustrated in the *RURAL*.

Combination Against Monopolies.

Another communication was read, from the Napa Farmers' Club, forwarding the following resolutions:

Whereas, It is notorious that the farming interests of the State have suffered and are now suffering serious damage from monopolies or "riugs," which take in hand and control the prices of our produce, and increase the cost to us of putting the same in market; and

Whereas, The farmers of this State are peculiarly exposed to extortion by being so far removed from competing markets; therefore, be it

Resolved, That we deem it expedient and necessary for the farmers throughout the State to organize a system of county, district and State clubs, with representative delegates from county clubs to district clubs, and from district clubs to a State club, with the sole object in view of self-protection;

Resolved, That we invite the respectful attention of other county clubs to the foregoing proposition, and urge them by correspondence to bring about a meeting of delegates for the furtherance of the object sought to be attained.

The communication was received and ordered filed. Remarks were made by several members, stating the following: That Mr. Pryal had spoken of his determination a month since to recommend the Club to move for a State organization and convention; that the motive is a good one and much good may be done; that other objects might be effected for the great interest of farmers by united efforts throughout the State; that action had better be taken by the Club when more farmers are present, etc.

Professor Carr then called upon Vice-President Webster to read his essay on

"California—Its Past and Future."

The essay which was most interesting, dealt with the exhaustive system of farming which, inaugurated in consequence of the uncertainty as to titles, resulting from the treaty of Guadalupe Hidalgo, had been continued ever since. He reprobated this exhaustive system very severely, and a great part of the essay was devoted to considering the means of restoring the soil to its original vigor. Mr. Webster thought that it was impracticable to follow the system adapted in the Eastern States inasmuch as none of the grasses usually sowed there on crop lands could withstand the summer drouths. Neither could Alfalfa. Burning stubble and straw was useless too, as only a few pounds of ashes were obtained from tons of vegetable matter. The best method was summer fallowing, which returned to the land the elements taken from it. Deep plowing was not sufficient. Mr. Webster then related his experience. Through a system of summer fallowing, land that would produce nothing but weeds in a few years gave 3 1/2 tons to 9 acres, thus leaving him after various expenses were paid \$50 per acre less the cost of seed and plowing. The land next his which was of the same quality and subjected to the old exhaustive treatment, did not produce more than half a ton to the acre. The old system of scratching the land and praying for rain to flood the land should cease. Thrifty farmers would not pray for more than fifteen inches of rain, that being sufficient with good cultivation to produce fine crops. We were beginning to understand the capabilities of the State. We were beginning to take a pride in the State of our adoption. Towns and cities were the centers of the intelligence of nations. Mr. Webster's essay closed with a brilliant peroration wherein he gave Oakland a place as one of our future *Alma Maters*, and predicted that she would be a modern Athens. (We will give more of the essay at another time.)

On motion of Mr. Pryal a vote of thanks was unanimously accorded Mr. Webster for his very able and interesting essay.

Mrs. Prof. Carr—What kind of hay do you raise, barley or oats?

Mr. Webster—Oats. There is an objection to barley hay on account of the beard hurting the mouths of horses.

About Summer Fallowing.

Professor Carr—How deep do you plow in summer fallowing? Is it necessary to plow nine or ten inches after the second year?

Mr. Webster—I do not plow very deeply. It is only necessary to turn the vegetation under. The second year I have not plowed more than six inches at most. In common seasons it is not necessary to sow before the first of January. I had three tons to the acre of nice, clean hay, by sowing at that time. Summer fallowing has a tendency to retain the moisture in the earth, later than can be retained in any other way. With it, ten inches of rain in the winter is sufficient.

Professor Carr—Ten inches would not be enough; I recognise that summer fallowing will keep moisture in the land, because even in the driest seasons the air always contains moisture, and a light porous soil will attract and retain moisture better than a compact one; cultivation will always operate favorably in this respect as cultivation helps to keep the soil light and porous. A little reflection will show that this is so.

Dr. Gibbons—After the first year would you not like more than fifteen inches of rain.

Mr. Webster—No; when the land is fallowed every alternate year. You improve the land every time you fallow it for a subsequent crop.

Exhaustion of Moisture and Soil by Ripening Crops.

Mr. Bagge—I had peas growing in a field, some of which I picked when green, and cleared the vines from the ground while I left others to ripen. I afterwards sowed with wheat. When I came to gather the crop in, there was a distinctly marked line between where the green peas and ripe ones had been. The place where the green peas had been, produced from 2,400 to 3,000 pounds of wheat, while where the peas were allowed to ripen, produced but 1,800 pounds off the same area.

Mr. Webster—(referring to the land mentioned in his essay). The land I spoke of was rolling land. When I began cultivation there was not more than three or four inches of soil on some parts of it; the average was not more than six inches.

Mr. J. Howard—Which would you prefer, to crop every two years or to take six crops off in ten years?

Mr. Webster—If the land was exhausted it would be better to take one every alternate year. My land improves every year. I can afford to run a second year in grain.

A gentleman—Do you think that by summer fallowing the land retains more moisture than otherwise?

Mr. Webster—The green coat decaying under the surface of the soil keeps the whole porous. I have found moisture at three inches deep in September.

Professor Carr—Will not the common grasses grow here in summer?

Mr. Webster—I cannot say. Alfalfa will not grow except it is well irrigated. It does not get enough hold the first season to withstand the dryness of the earth.

Mr. W. H. Wood—If grasses keep alive the first year without irrigation, will they grow afterwards without? Can Kentucky Blue Grass take hold enough to do without irrigation? I had some at the Point which was not irrigated except in spots here and there. The first year it died—the second it lived and grew high and strong. I think it might live without irrigation if the surface was covered.

Mr. Webster—Your theory is substantially correct. Summer fallowing, you can always raise a good crop. By ploughing three inches deep, I have got a crop six inches high; by ploughing six inches, sixteen inches, and always had a good one without irrigation.

Prof. Carr on Summer Fallowing.

Professor Carr—Summer fallowing is some advantage but it returns nothing to the soil, except what is added to it by the atmosphere, and some little phosphates, nitrates and ammonia from the weeds. These are all necessary to a green crop. When we turn in, we retain a certain amount of these materials. We do not retain phosphates, sodas, etc., when we remove barley, oats, etc. The largest portion of these that make the ash of plants, do not exist naturally in a condition whereby plants can avail themselves of them as food. There must be a certain exposure to the air—a mixture, and this summer fallowing helps. By being exposed to the air and moisture they are brought into a condition of plant food. Let summer fallowing be carried on for ten or twenty years and the land would become barren. We render aid to it in certain ways. We add ammonia, etc., from the weeds; Nature herself helps. The effect here of a dry season is the same as when in the East a dry season produces a failure of the crops. I said to the members of the Wisconsin State Agricultural Society that

A Drought Would be a Blessing,

With it each particle of water brought up by evaporation brings up the salts, and deposits them on the surface. The longer the drought, the more phosphates are brought up and remain on the surface. We must restore to the soil in some way or other, phosphates and mineral substances.

If we allow the straw to remain, and plow it in, we leave a certain proportion; summer fallowing can not restore them. They pass away through human agency into sewers, etc., and are thence carried to the ocean and distributed by the currents over its surface. We task all our ingenuity to get rid of these phosphates, which are borne out to sea, and finding a resting place there constitute a large proportion of the substance of sea plants and sea animals.

From sources such as this, have grown the mighty coral beds and coral islands that stud the Pacific. The great problem of agriculturists now-a-days, is how to restore these materials to the soil that the crops have taken, and are taking away from it, and that will, if the waiting process is not checked, eventually render it barren; for the question of its total exhaustion by the present processes is only one of time.

Value and Waste of Manure.

Mr. Pryal—I have been in England and have seen the result of the English system of treatment on the farms. There is not a particle

of manure there lost. I have seen small children following horses in the streets and collecting their droppings. All this is taken to the farmer, and the result is that the country is one great garden. In Liverpool the canal boats carry it all away. It is taken into the country and spread on the soil, and makes everything green and beautiful. In Oakland, on the contrary, all kinds of manure are dumped into the creek and bay. The consequence will be, that in the future we will have barren lands."

Mr. Bagge—"We must keep domestic animals on our farms, to consume the hay, etc., and to enrich the land by their droppings. I have seen farms in the old country, (Germany) which were entirely worthless, rendered fertile by this means. I knew one man who made himself a fine farm in ten years by this process. Where he could not get 10 sacks of grain at first, he could get from 20 to 30 after that length of time. On my farm, four or five years ago, I had only two cows, now I have a dozen, and I never allow straw to be carted away. At first I bought hay for the purpose of feeding the animals in order to produce the manure. I now haul it from San Leandro—ten miles.

One Crop in Two years Not Enough.

Mr. M.—"Farmers ought to plow their land and put in Lucerne, Lupine, or some other kind of grasses, and plow them in before putting in grain. A poor man with only fifteen acres cannot lose half of it one year, in order to get heavy crops the next. Owners of big farms can afford to lose so much land every year, but those possessing poor ones, must sow with grasses and plough them under. There are several kinds of clover which flower at the beginning of May, which are suitable for this purpose.

Mr. Webster—"There is an objection to this, that the second crop would come too late. The grasses would not rot quick enough, and it would be too late to raise grain."

Mr. M.—"When turned under, the layer of grasses would not be more than one and a half inches in thickness, and the heat of decomposition would make the grain germinate more quickly."

Mr. Pryal.—The land ought to have rests. Have we not extensive beds of marl in California.

Dr. Gibbons—"This matter of summer fallowing has been agitated for half a century. It is one of the oldest questions of agricultural disquisition. (To Mr. M.) Can you produce a crop on bad land by this method of plowing under sown grasses.

Mr. M.—I have seen a large extent of land sown with clover furnish the best crops in the country, when turned in and sowed to grain.

Professor Carr—"This question will hold over.

Mr. Pryal has informed us that he wishes to exhibit some interesting experiments on

Rose Budding and Grafting.

Mr. Pryal—I would thank Professor and Mrs. Carr on behalf of the county for the action that they have shown in matters that interest this Club. They are a real blessing to the country.

Mr. Pryal then exhibited several interesting experiments in flowers on budding and grafting, of which we intend giving a full report with illustrations in a future issue.

While giving illustrations in budding, Mr. Pryal remarked that it was a work peculiarly suited to ladies, and one easily learned. A proficient in it could go round among the farmers and easily earn \$10 per day. Four or five hundred would be budded per day, and the market gardeners paid two cents each for them. While going round budding, there was, too, a capital chance for handsome young ladies to captivate the hearts of bachelor farmers. It was work much better suited to them than going about the country, highfalutin on the rights of women. (Applause from the ladies.)

Mrs. Carr moved, and Mrs. Moore seconded, a vote of thanks to Mr. Pryal for his interesting experiments and address, which was unanimously accorded.

Mr. Pryal then announced that on a future occasion he would show the ladies how to propagate roses and hybridize them.

Mr. Pryal recommended that at another meeting the subject of improving the Oakland plazas be discussed. They are now a barren waste, and a burning shame to our enterprising citizens.

Mr. Dewey in view of the importance of the subject, suggested that some gentlemen at their next meeting address them on the subject of the best varieties of summer fruits, and offer suggestions as to the best means of preserving them and keeping them fresh.

Mr. Pryal suggested that the plazas should be let to horticulturists for a term of years on condition of their eventually turning them over to the city in their improved condition. He himself would rent one of them. He moved that the ladies be appealed to to suggest a subject for discussion. Mrs. Carr said that the preservation of fruit was peculiarly appropriate as a subject for the next meeting, and that it was of vital importance to the ladies at this season. She suggested that the gentlemen obtain statistics on the cost per acre of the culture of strawberries, raspberries, etc. Horticulture was a very appropriate occupation for women. She would move that the next subject be, "The Production and Preservation of Small Fruits."

Mr. Dewey suggested that correspondence on the subject be invited by the Club from parties posted on the question and the best varieties of fruits, and that they be requested to send in their suggestions.

Mrs. Carr's motion with Mr. Dewey's suggestions added thereto, was carried.

Mr. Pryal suggested that an exhibition of products be held, for the purpose of obtaining funds wherewith to found a gardener's library. Such an institution was very much needed by our young gardeners.

Professor Carr thought the suggestion a good one. Adjourned to Aug. 9th.

Sacramento Farmers' Club.

Meeting, July 27th. The committee appointed at the last meeting, to prepare a basis or rules for the organization and government of a co-operative grocery store, reported that the committee had been corresponding with persons who had been or are engaged in such organizations, for the purpose of learning the specific principles by which the different systems are governed and the practical operations of each system. That they had not received answers to all letters written, and until they had gained more information on the subject did not think it advisable to report any plan. That they desired to start right rather than to find errors after they had made them. The committee read a letter from a gentleman in San Francisco upon the subject, as follows:

"I see by the report of the Sacramento Farmers' Club that you propose establishing an agency for the sale and shipment of fruit; also, a co-operative farmers' grocery store. I would like to suggest to the club the outline of a plan for successfully carrying out the objects proposed. I have seen it in practice and know it can succeed. First—A large and suitable building or depot is built or rented for the uses of the association; every or any member thereof, day by day, or as often as he pleases, deposits his produce at the depot, labeled with the lowest price he is willing to sell it for, the agent in charge allowing him full and free access and examination of the rates of sales on the previous day and the quantity and quality of all produce on hand and prices asked. Every day, or as often as he pleases, the owner of produce on hand can change his price, higher or lower, as the quality of his fruit or the quantity in market, at the depot or elsewhere, would seem to warrant; but when sold, twenty per cent. is retained to meet the expenses of the concern, and the balance is paid over at once to the owner. Every Saturday a general clearing out sale is held, and as many as please having fruits on deposit can have them disposed of at what they will bring at auction or any method of sale thought best; but when sold, twenty per cent. to be retained as though sold at private sale. At the end of every month the expenses are paid out of the twenty per cent. reserve fund, and all over the expenses is divided pro rata among the members in proportion to the amount of his sales. A large one-story building on a large lot would be needed to accommodate the members with each his own particular section, and, on clearing days, for bidders and buyers, Saturday or any other day deemed better. I know the minutiae and business of such a concern to a dot."

The committee stated that while they saw no difficulty in the way of success, and a great saving to all the stockholders in a co-operative movement of the kind proposed, they desired to obtain all the information possible, and to move cautiously and surely when they did move. They therefore desired more time, which was granted.

The committee to whom was referred the subject of a fruit depot and shipping agency especially, reported that after consulting with the fruit-growers in the vicinity they found that while nearly all were in favor of the move, and believed it not only practicable, but when in operation would prove beneficial to the producer and consumer of fruit, so many had made engagements for their fruits this season that they had concluded to recommend that no establishment be opened this season, but they would keep the subject in hand and make all the necessary arrangements, both here and at the different shipping points east of the mountains, for opening the agency in time for the sale and shipment of the spring fruit next season.

The committee were continued and empowered to act in the premises as they deemed advisable.

The committee on the City Market reported that the city ordinance proposed by them had been passed by the Board of Trustees, and was to be enforced on and after Monday next. After that date, Sixth street, between I and K, was to be the market place for all farmers' produce.

On motion, the subject for discussion at the next meeting is "Fertilization of California Soils."

Adjourned one week.

San Joaquin Farmers' Club.

Meeting, July 27th. Dr. Holden, President, in the chair. Reports of committee laid over.

The Daily Independent reports: Mr. R. K. Eastman sent a specimen of new grass from Santa Cruz. The sample proved to be a recent introduction here on rather a large scale, and none of the members thought it of any particular value, some pronouncing it only a new variety of cheat, with a smaller grain. On motion of Mr. Smyth, the following, offered by the President, was adopted:

Whereas, the tax-payers of San Joaquin

county are convinced that the taxes on real estate and improvements are too high by at least ten per cent., therefore,

Resolved, That the San Joaquin Farmers' Club most respectfully petition the honorable Board of Equalization of California to grant a general reduction of ten per cent. on the valuation of all real estate on this year's assessment book of this county.

The Secretary, Mr. Walthall, read the following communication:

STOCKTON, July 29, 1871.

We desire to call the attention of the Farmers' Club to the "Dickey Fan," which we are about to introduce among the farmers of San Joaquin valley. We claim that its capacity for separating and cleaning grain, and afterwards grading it, is far superior to anything we have ever seen. We daily expect an invoice of these mills, and as soon as received we will invite the members of the Club to call and see one of them in operation at our warehouse on Eldorado street.

J. B. WEBSTER & Co.

The President suggested that the Club do well by patronizing sundry agricultural journals and magazines to which attention was speedily called.

The President introduced to the Club the representative of an Eastern house engaged in the grain sack trade, Mr. Winne, who agreed to furnish our farmers with a first-class quality of Burlap sacks at lower rates than they could be supplied by the California market. He exhibited a sample sack with which the farmers present appeared to be much pleased.

San Jose Farmers' Club and Protective Association.

The Club met as usual, July 27th, President Casey in the chair.

"The best and most economical method of harvesting and preparing the grain crops for market," is the subject selected for discussion at the next regular meeting of the Club.

Mr. Holloway, Jr., spoke of the apathy displayed by farmers in regard to supporting protective associations. He said it is not so with men in other callings. Doctors and lawyers have their associations, and they do not fail to support them. They stand on their dignity and claim to belong to the "learned professions" while the farmer has the greatest need of learning, and has every opportunity to make his the most learned of all professions. (While Mr. Holloway was talking there were not more than two or three real farmers in the hall.)

Mr. Jessie Hobson opened the discussion on the question of the day, the

San Jose and Alviso R. R.

He did not know as the people were interested in the railroad question.

Two years ago we had been called upon to vote a subsidy of \$150,000 to this same road. He went through the streets and rang a bell and spoke to the people against the subsidy, and the people voted it down. They did not want to give any more money to enrich companies who had made their money from us. He was satisfied that a road to Alviso would pay, and wondered that some rich company had not built it. The old company were shrewd money makers and hoped to get \$150,000 out of the people. He knew several men who would build the road and put it in running order for a gift of that amount, but what we wanted was some company that would build and run the road as a fair business transaction without any donations from the people.

Mr. Dubois expressed fears that the road would soon be in the hands of the old monopoly or some other just as bad. He thought the company might enter into an agreement with a hundred or more farmers to carry all their grain and passengers at some set fare, and might mortgage their road to insure the fulfillment of the contract. Then if they sold, the new company would be compelled to continue the same rates of charges. Mr. Burgland thinks the road will not pay, and that the shareholders will sell sooner than pay assessments and taxes on their stock, so it will be a hard matter to keep it out of the hands of the strong company.

Mr. Hobson does not consider the mortgage to insure the delivery of freight practicable. He believes the road will be built by somebody, and soon, too. The old company that two years ago wanted \$150,000, are now willing to build it if the farmers will only subscribe stock to help them—soon some company will go to work and build the road without any such conditions. Capitalists will not always be able to get one and a half per cent. compound interest for their money, and when interest comes down we will have roads built and manufactures built up and then farmers will live at home.

Mr. Peter O. Miner said that the company were desirous that the stock should all be owned in this valley, and that the road should be built especially for the interest of the people, and as a guarantee that the company would not sell to any monopoly they had got the franchise and right of way in such a manner that it would be void if ever the company sell.

Mr. Bishop considers it the natural channel for trade, and it belongs to us, and the road to Alviso should be built by us without any debts or mortgages. Santa Cruz has the right to vote five per cent. of her taxable property for railroad purposes, which she will likely do and connect with us above Lexington. That will open up to us all that vast wooded region lying

over the mountains. This road is an enterprise of the county, and as many as possible should subscribe to the stock and not have it owned by a few. Every man that has a ton of freight to ship will save a dollar.

We must creep before we can walk; first let us build from San José to Alviso, then after a time we can extend to deep water out of the profits of the road or connect with Santa Cruz if desired.

The Club now adjourned to accept of an invitation to witness the workings of one of Best's Improved Grain Separators which was in operation on Mr. Martin's lot. The grain was mixed, wheat, oats, and chess in nearly equal parts; in going through the mill once nine-tenths of the foul grain was removed from the wheat. The separator was worked by a common two horse-power.

AGRICULTURAL NOTES.

BUTTE.

FRUIT GOING EAST.—The Marysville *Appeal*, July 23d, says that on that day a car load of fruit was shipped from Denver City, Colorado. On Friday another was to follow for Chicago, and two will be sent every week by the express trains for the Eastern States during the fruit season. The low prices of fruit in San Francisco has had the effect of turning the shipments East, as it will not pay to pick and ship fruit to San Francisco from that vicinity at the present prices. The owners of large orchards can readily load a car at once, and the smaller fruit growers, by combining, can follow their example. By sending at one time a car load, freight is reduced and their fruit finds a market which leaves them a profit. The middle men do not get quite all the profit of a cargo when this course is adopted, and the fruit grower has something left for his labor and trouble. On the other hand, if the fruit shipper to San Francisco gets his boxes back without going in debt for them he may be considered very lucky at this season of the year, and from this time forward until the rush of fruit is over.

GOOD WHEAT.—The Proper wheat of Ogden & Hamblen, of Sutter county, of which we made mention some time since, says the *Appeal*, has been threshed and yielded an average of forty-five bushels per acre. Had all been saved it would have averaged fifty bushels, but a portion which was down was cut and stacked too green, and it spoiled in the stack.

Appeal, July 23: OPIUM POPPY.—Yesterday we were shown a genuine Eastern Opium Poppy, grown on Butte Slough by some East Indians, who planted a bed about ten feet square with this plant. From this bed they have gathered about one pound of opium by tapping the poppy balls. The planters say that the plant flourishes even better here than in the East Indies, and they intend to plant a much larger area the coming season.

CONTRA COSTA.

Gazette, July 27: THE HARVEST.—Although most of the grain in the valleys of the central portion of this county has already been cut and stacked, comparatively little of it has yet been threshed, but so far as it has been the yield has been quite satisfactory; and the later matured grain that has had the benefit of the favorably cool weather, will undoubtedly turn out better than that which was hurried to maturity by the short spell of hot weather in June. The threshers of this section that have been employed upon the San Joaquin are now returning, and will find plenty of occupation at home for the coming month or six weeks, and the roads will shortly be deep in dust with travel of the loaded grain teams.

FRESNO

Alta July 31: Yesterday we were shown specimens of this year's growth of various kinds of farm products raised near the banks of the Fresno Canal, Fresno county. The farm is situated near Centerville. On it are growing luxuriantly cotton, sugar cane, castor beans, corn, figs, pomegranates and other valuable plants and trees. There are here large plantations of cotton, which are looking well. The bolls of the plants are swelling out handsomely and will in a few weeks burst and be ready for picking. Most of the fields have received no irrigation this year. There are several acres of sugar cane, which is now ten feet high and promise to yield a fine crop of saccharine matter. The experiment alone has proved the great value of irrigation in our warm valleys and opens up a new field for industry. Corn is sixteen feet high in many places. There is a castor bean tree, which is three years old and which measures thirty-four inches in circumference at the trunk and twenty-one inches six feet above the ground.

There are many other prominent indica-

tions of the latent wealth of the soil, which foretell the future value of the region in which they are growing.

MERCED.

LARGE VOLUNTEER YIELD.—Mr. George Faucher, who resides on Bear Creek in Merced county, has just finished threshing the wheat from 600 acres of volunteer which yielded thirty-five bushels per acre, of a fine quality, weighing sixty-two pounds per bushel. The above statement is from a well-known machine man, a Mr. Eddy, who threshed the grain.

NAPA.

SERICULTURAL.—Messrs. Hallin and Ammerup, at their cocoonery near Napa City, are feeding some 75,000 silkworms at present. These gentlemen had bad luck with their first lot of eggs, it having been their intention to raise several hundred thousand worms.

A SEVERE LOSS.—On Saturday of last week a fire broke out on the ranch of Mr. R. B. Woodward, and before it could be extinguished did much damage. The railroad employes had kindled a fire along the track to burn of the grass and stubble, so as to prevent accidents by sparks from the locomotives, and the field in question caught from this fire. Besides much other damages, the fire consumed two large stacks of headed wheat, that would according to good estimates, have yielded over 1,700 bushels. The farm had been leased to Jessie Grigsby. The yield had been a large one, and Mr. G. had fair prospects of making a profit, from the lease, but now the whole is a loss. He was away in Lake county at the time of the fire.

SACRAMENTO.

Antioch Ledger, July 27: SHERMAN ISLAND.—Between four and five thousand acres have been sown to wheat on Sherman Island, and the earliest sown is now nearly ripe for harvest. The late sown promises well. Potatoes, beans and vegetables of all kinds have been planted. The planting season being over, farmers will now prepare the ground for sowing grain or hay. A large number of men have been employed by the trustees to construct levees which will be three feet higher and about twenty-three feet wider than the present one. The islanders hope to be prepared against any floods that may come before winter.

SAN JOAQUIN.

Republican: WHEAT COMING IN.—The wharves on both sides of the channel are lined with wheat for a long distance. The amount coming in is greater than can be shipped away. Every farmer who can possibly avoid selling is storing his grain for better prices.

THE CROPS.—A San Joaquin correspondent of the *Vallejo Chronicle* says that the farmers in the valley find their harvest to far exceed their most sanguine expectations, and many of them have to buy a second installment of sacks to hold the unexpected increase of crop.

Independent: POULTRY AT THE FAIR.—The Board of Managers of the San Joaquin Valley Agricultural Society having in view the fact that all classes of the community, whether farmers are amateurs, are much interested in this department, and desirous of improving the breeds and rearing the best class of poultry, are disposed to make this department a leading feature in the forthcoming Fair. In order to encourage the exhibition of the several varieties of poultry a suitable space will be set apart for that purpose, proper food supplied, and a competent person employed to take care of all the poultry on exhibition without charge to owners.

Alta, July 31: A PROMISING COUNTY.—Not many years ago the San Joaquin Valley was universally considered a desert. During the last few years enterprising capitalists have succeeded in attracting public attention to their locations of land in the upper portion of the valley, and have expended large sums of money in providing facilities for irrigation. Comparatively speaking, only a very small section has been rescued from the danger of droughts; yet that portion is capable of sustaining a population of many hundreds of families. The old notion of sterility has been exploded, and with water on, we know that the San Joaquin Valley is not excelled for fertility and variety of productive power by any known section of country in the world.

SOLEANO.

Vallejo Chronicle, July 27: AGRICULTURAL FAIR BUILDINGS.—Architect Gunning, who is the author of the plans and specification for the new Fair buildings, has given us an inspection of the drawings. The hotel, which will be a very handsome specimen of architecture is to be a two-story building, 32x50 feet in dimensions.

The front and rear of the house are to be furnished with piazzas which will add much to the general appearance of the structure. The lower floor will be divided off into four rooms. A fine wide hall runs through the middle of the building. The upper story will contain nine rooms for the accommodation of visitors. The grand stand from which the races will be viewed by the spectators, will be 34 feet in height, and 25 in length by 60 in breadth. In addition to these buildings will be a long array of shedding 600 feet in length, for the accommodation of race horses and cattle brought to the Fair for exhibition.

SUTTER.

GOOD THRESHING.—The thresher of R. McIlmoil, Sutter county, fed by Hank Hendrickson and C. Ellis, recently, turned out in one day, 1,750 bushels of wheat at the ranch of McCausland, Sutter county. The boys claim the belt for their machine, as the champion thresher of Sutter county.

NEVADA.

Truckee Republican, July 18: CHARCOAL AND LUMBER SHIPMENTS.—About five car loads of charcoal are shipped daily from Truckee to Salt Lake. This does not include shipments from Boca or other points below that place. Each car will hold about 900 bushels. Yesterday eleven car loads of lumber were shipped East, and to-day eight more went forward. This does not include other merchandise manufactured from lumber.

FREIGHT.—A large amount of freight is now lying at the depot for shipment to the surrounding country. About 50,000 lbs. is for the Eureka Mills in Plumas county, and 80,000 pounds goes to the Lake Tahoe region.

LASSEN.

Plumas National, July 20: We recently paid a visit to our neighboring county of Lassen, and were surprised and pleased to note the signs of improvement and prosperity in that region. Business appears to be very brisk, and the "circulating medium" plenty. Farms are changing hands daily, at good prices, and wealthy men, who are looking for permanent homes are the buyers in almost every instance. Immense droves of stock—cattle and sheep—are being pastured in Honey Lake and the valleys to the north, and the amount of hay being cut indicates that the stock men intend to winter them in that section. We think that the future of the "land of the sage brush" is bright, and gives flattering promise of good times coming.

The alfalfa grass is rapidly gaining ground in Nevada. It it well adapted to soil that usually produces sage brush, and bids fair to supplant that questionable product in several of the recently cultivated districts beyond the Rocky Mountains.

OREGON.

Oregonian, July 27: PROLIFIC CHERRY.—We have been shown a cherry tree growing in the yard of H. F. Bloch, in this city, which certainly presents an anomaly in the fruit bearing line. A new variety, the name of which is not known, has been grafted into another variety. The grafted limb bears fruit every month, commencing at the usual cherry season, and extending to about the first of October. On the same branch can be found the fruit in every stage of maturity from the size of a garden pea up to a full-grown dimension. The fruit of this strange variety is very large, luscious, and of a delightful flavor. Whether this is a freak of nature, or the natural result of grafting, is not known; but if it is the latter, it will be a great acquisition to the fruit growing interests, as the average yield is very materially increased.

BLACKBERRIES.—Blackberries in abundance are being brought in from Vancouver. The crop is reported very fair. One man at that place has raised several thousand pounds of berries from one-quarter of an acre. The yellow jackets are said to be committing havoc with the prospects of the crops, however.

ON Tuesday last, a little son of Mr. Thomas, living on Norman Lilly's place, in King's Valley, about eight years of age, was playing in a field where a mower was at work. The driver of the machine did not observe the little fellow until the sickle was too close to stop the team in time to avoid an accident. The boy's leg was taken off close to his body. Surgical assistance was immediately sent for, but the sufferer died from loss of blood before aid could reach him.

GREEN CORN.—The Dalles boat brought down Monday a quantity of green corn from east of the mountains. These are the first roasting-ears of the season, and will be a great delicacy in the market—prices ranging accordingly.

The Economic Value of Certain Australian Forest Trees, and their Cultivation in California.

[Delivered before the Academy of Sciences by ROBERT E. C. STEARNS.]

Australian forest trees propagated from the seed, with perhaps a few exceptions, thrive remarkably in California; the climate and soil appear to be nearly or quite as favorable to the growth of these exotic as of the native forest forms.

In many of the principal towns in this State, especially in and around San Francisco, in the neighboring city of Oakland and adjoining towns on the easterly side of San Francisco bay, fine specimens of many of the Australian forest species are exceedingly numerous. The most popular of these belonging to the genera *Acacia* and *Eucalyptus*, have been planted for ornamental and shade purposes; the light feathery fern-like foliage of some of the *Acacias*, their gracefulness, beauty and color combined with rapid growth, present so many advantages as to fairly entitle them to popular esteem. Of the *Acacias* recommended by Dr. Mueller on account of their economic value, I am not aware of any being cultivated in this State for that object. *A. decurrens* (*A. mollissima*) also *A. lophantha* and some other species, are frequent, and highly prized for ornamental purposes; from twenty to thirty species are enumerated in the catalogues of the principal nurseries.

The many valuable properties of the species mentioned, with rapidity of growth, would warrant cultivation on an extensive scale, which if judiciously conducted would be highly advantageous to the State and yield a handsome return upon the capital invested. Mueller says that the wood of *A. decurrens*, properly known as the "Black Wattle or Silver Wattle," can be used for staves, but its chief use would be to afford the first shelter, in treeless localities, for raising forests. Its bark rich in tannin, and its gum not dissimilar to Gum Arabic, render this tree also important.

A. Homalophylla,

Has a "dark brown wood, is much sought for tanner's work on account of its solidity and fragrance; perhaps its most extensive use is in the manufacture of tobacco pipes."

A. melanoxylon "is most valuable for furniture, railway carriages, boat building, casks, billiard tables, pianofortes (the sound-boards and actions) and numerous other purposes. The fine-grained wood is cut into veneers. It takes a fine polish and is considered equal to the best walnut." Under favorable circumstances it attains "a height of eighty feet with a stem several feet in diameter." This species requires a deeper and moister soil than *A. decurrens* and *A. lophantha*, which are especially recommended for their ability to resist drought, and therefore particularly applicable to treeless and sterile areas in the southern part of California, and the adjoining country, where the temperature does not decline below 10°.

The peculiar yellow displayed in the China silks and other articles, is obtained from the yellow flowers of a species of *Acacia*, and of an exceedingly permanent character.

The *Acacias* are easily propagated from seed, as I have (with some species) practically tested; and it is not unlikely that the flowers of most of the species, which are yellow, might be equally as valuable for the dyer, as the variety cultivated or used by the Chinese.

Of the *Eucalypti*, *E. globulus* is very common in California, and easily cultivated; it is the Blue Gum of Victoria and Tasmania. "This tree is of extremely rapid growth and attains a height of 400 feet, furnishing a first-class wood; shipbuilders get keels of this timber 120 feet long; besides this they use it extensively for planking and many other parts of the ship, and it is considered to be generally superior to American Rock Elm. A test of strength has been made between some Blue Gum, English Oak and Indian Teak. The Blue Gum carried fourteen pounds weight more than the Oak, and seventeen pounds and four ounces more than Teak, upon the square inch. Blue Gum wood, besides for ship building, is very extensively used by carpenters for all kinds of outdoor work, also for fence rails, railway sleepers—lasting about nine years—for shafts and spokes of drays, and a variety of other purposes.

Rapidity of Growth.

Of the rapid growth of this species of *Eucalyptus* and the facility with which it is propagated, most people in California who have had any experience with it are familiar; but as perhaps few persons who have specimens of it growing upon their grounds or in their yards are aware of its value otherwise than for ornamental purposes, I have deemed it a matter of interest as well as of importance to quote from Dr. Mueller's valuable paper. Having propagated the Blue Gum from the seed and raised many specimens under not particularly favorable circumstances, I can indorse the remarks of the author from whom I have quoted. An instance of rapid growth immediately under my observation, is that of a specimen purchased by me of a nurseryman, which at the time of planting (Jan. 5, 1871) measured from the ground level to the extreme tip six and one half feet, and in about eleven months (Dec. 8, 1871) had reached a height of a trifle over fifteen feet; the diameter of the stalk when set out was half an inch, and at the final measurement one and three quarters inches. I am prepared to hear of instances far exceeding my figures, but it should be borne in mind that we had very little rain after this tree was planted,

and furthermore that the locality was upon nearly the highest ground in Petaluma. This tree was occasionally, but only moderately watered during a part of the time. Other trees of this species planted at the same time, also made a remarkable growth; specimens raised by me from the seed, whose growth I have noted, show a gain of ten and a half inches in twenty-one days, or half an inch per diem.

The development of the lateral branches is as surprising as its perpendicular growth.

George C. Potter, Esq., of Oakland, informs me that specimens upon his grounds nine years old, show a diameter of twelve inches.

Of the large plantation of *Eucalyptus* of the Blue and Red species made a few years ago by Mr. J. T. Stratton, of Alameda, I hear indirectly that the trees have done well. I hope at a future meeting to be able to learn from Mr. Stratton, and inform the Academy more definitely of the success thus far, and prospects of this highly commendable and important enterprise. The many

Valuable Properties.

Of the *Eucalyptus* attracted the attention of the French Government several years ago. A specimen in the Jardin d'Acclimation at Algiers, excited the admiration of the Emperor while on a visit to that place, and upon measuring the tree it was found, according to the *Paris Moniteur*, to have made "a height of 30 feet and a diameter of six inches in two years." Since that time it has been extensively cultivated in Algiers, and of late it has been stated that it "is making rapid progress in the south of France, Spain and Corsica, especially on account of its alleged virtues as a remedy for fever. It furnishes a peculiar attractive matter, or alkaloid, called Eucalyptine, said by some to be as excellent a remedy against fever as quinine.

In Spain its efficacy in cases of intermittent and marsh fevers has gained for it the name of "fever tree." It is a powerful tonic and diffusible stimulant, performs remarkable cures in cases of chronic catarrh and dyspepsia, is an excellent antiseptic application for wounds, and tans the skins of dead animals, giving the fragrance of Russia leather. The tree prefers a marshy soil in which it grows to a great height very rapidly. It dries the earth under it by evaporation from its leaves, and shelters it from the sun, thus preventing the generation of marsh miasm."

Of the medicinal properties of *E. globulus* we have additional testimony in a recent number of the Practitioner, where Dr. M. C. Maclean relates the results of his experiments on patients in the Hospital Wards at Netley, England. He says in connection with certain cases of chest aneurisms and cardiac asthma, "With the exception, perhaps of the subcutaneous injection of morphia, I know no remedy so efficacious in allaying pain, restoring dyspnoea, calming irritation, and procuring sleep in such cases, as to be compared to *E. globulus*. He also refers to the use in Germany of a tincture made of the leaf, which "has been used successfully in 3½ doses in the treatment of intermittent fevers. It appears that it is not only used medicinally in form of a tincture, but also that cigars are made from the leaves, and its palliative influence obtained by smoking.

"German physicians, as appears from medical journals, have found a tincture of the leaves of the *Eucalyptus globulus*, or Australian gum-tree, to be a remedy for intermittent fever. Dr. Lorimer gave it to fifty-three patients, of whom forty-three were completely cured. In five others there was a relapse, owing to a failure in the supply of the tincture. In eleven of these cases quinine had been used without effect, and nine of these were cured by the *Eucalyptus*."

Other species of the *Eucalypti*, of great value and well worthy of consideration, are recommended by Dr. Mueller.

E. Amygdalina,

Labill, which is sometimes met with 400 feet in height; one specimen in the Dandenong ranges measured 480 feet, surpassing in altitude the gigantic Sequoias of our own State; the wood of this species is said to be well adapted for "shingles, rails, housebuildings, for the keelson and planking of ships, and other purposes;" in rapidity of growth it equals the *E. globulus*, but is not so easily satisfied with any soil.

E. diversicolor, *F. v. Mueller*, a native of S. W. Australia, sometimes reaching 400 feet in height, with a proportionate growth of stem. The timber is excellent, and young trees are reported as doing well even "in dry, exposed localities in Melbourne." It is regarded by Dr. Mueller as a valuable shade tree for avenues, as it makes a dense growth.

The *Eucalyptus citriodora*, *Hooker*, a native of Queensland, "combines with the ordinary qualities of many *Eucalypts* the advantage of yielding from its leaves a rather large supply of volatile oil of excellent lemon-like fragrance."

E. gomphoccephala, *Candolle*, grows to a height of "fifty feet, wood close grained, hard and not rendering."

Eucalyptus marginata, *Smith*. "The Jarrah or mahogany tree of S. W. Australia, famed for its indestructible wood, which is attacked neither by Chelms nor Teredo nor Termites, and therefore so much sought for jetties and other structures exposed to seawater, also for underground work, and largely exported for railway sleepers. Vessels built of this timber have been enabled to do away with copper-plating. It is a very strong, of a close grain and a slightly oily and resinous nature; it works well, makes a fine finish, and is by shipbuilders here considered superior to either Oak, Teak, or indeed any other wood." The tree does not grow as rapidly as the Blue Gum in the neighborhood of Melbourne, but Dr. Mueller expresses the

opinion that it would make a rapid growth in a more favorable locality.

The E. Rostrata.

Schlecht, the Red Gum of Victoria, is a very valuable species for the "extraordinary endurance of the wood underground, and for this reason highly valued for fenceposts, piles and railway sleepers; for the latter it will last a dozen years, and if well selected much longer. It is also extensively used by shipbuilders, for mainstem, sternpost, innerpost, deadwood, floor timbers, futtocks, transoms, knightheads, hawsepieces, cant, stern, quarter and fashion timber, bottom planks, breasthooks and riders, windlass, bowsails, etc. It should be steamed before it is worked for planing. Next to the Jarrah, from W. Australia," this is the best wood for resisting the attacks of seaworms and white ants. This species reaches a hundred feet in height, which is also the height of the next and last of the *Eucalypti* referred to herein, viz.: *E. sideroxylon*, *Cunn.*, which produces a wood of great strength and hardness, and desirable for carpenters, shipbuilders, and wagonmakers, being suitable for wheels, trenails, belaying pins, and is considered the strongest wood in the colony; also valuable for railway sleepers, underground work in mines, etc.

The wood of the Gums is "so soft at first as to render the feeling, splitting, and sawing up of the tree, when green, a very easy process, but when thoroughly dry becoming as hard as oak."

When we consider the fact of the great number of farms in California that are nearly or wholly destitute of wood, and the great and continuous expense entailed by our system of fencing, the importance to the farmer of dedicating a portion of his land to the cultivation of forest trees, from which he can obtain fuel, and fencing materials, is too palpable to admit of debate. The comparatively small expense and labor with which the cultivation of a few acres for the purposes I have named is attended, its absolute feasibility and practicability, with the beneficial results that would flow therefrom, should commend itself at once to every farmer, as a few acres of timber land for economic purposes would add much more than the cost to the cash value of a farm. The boundaries of a farm should be marked by a row or rows of trees, thus defining its limits by living monuments, and greatly adding to its beauty—from these rows as the trees advance in growth and age, some wood could be cut, and where the farm is of considerable size, enough in the way of trimmings or prunings to supply the fuel of the house. In the treeless areas of the southern part of the State, the varieties of the *Acacia* above named would prove an important aid in assisting by their protection the planting of other species of timber; as they are easily taken care of and will stand excessive drought. They would also be useful as is our Monterey Cypress, (*Cupressus macrocarpa*) for belts to break the force of the winds in exposed places, and it is to be hoped that before many years, timber belts for this purpose will be common wherever the coast winds prevail, as a protection to orchards and vineyards.

Our Native Trees.

We have many native trees well adapted for timber or wind-breaks, and while calling the attention of land owners and others to the exotic forms above mentioned and their special qualities as enumerated in Dr. Mueller's excellent paper, I do not wish to be understood as making an unfavorable comparison as against indigenous species, as for some of the purposes mentioned they will answer equally well.

It must be remembered, however, that our forests are unfortunately deficient in many of the hardwoods much used in the arts, and which we are now compelled to import from localities more favored in this respect. The aggregate amount annually sent out of the State for the purchase of this material could by proper foresight and enterprise, in a few years, be retained within our own borders, and here expended in the establishing of new industries pertaining to the very material, the manufacture of which in other portions of the Union employs large communities, to whose support we are now contributing.

As in Germany to anticipate a future need our own *Sequoia peruviana* or Redwood tree is extensively cultivated, so here by the cultivation of the Australian *Eucalypti* we can in a few years supply a positive want, and reap the advantages above indicated.

Since the reading of the above paper I have had many questions asked me by persons not present at the meeting of the Academy, and as an answer to said inquiries and to various propositions I have added the following:

Planting and Trimming.

Some objection has been made to the *Acacias* and *Eucalypts* by persons who have planted them for shade or ornamental purposes in the neighborhood of San Francisco, for the reason as alleged that they do not withstand the winds. So far as the observations of myself and others who have investigated the matter extend, it is really surprising that so few are prostrated. The fault is not with the trees but the purchasers; as trees of from four to six feet in height are sold at a low price, they are bought by parties who require only a few, in preference to smaller trees, as they make a greater immediate show. As most of the growth of the trees as usually purchased, after having attained a height of six inches, has been made in the pot or box in which they are sold by the dealers, it

will be readily perceived that the tap-root which in a natural state descends, is diverted from a perpendicular into a rotary direction, analogous to a spiral spring, and is also crossed and recrossed on itself—with the liability as it increases in size to strangle the tree by one portion of this root making a short-turn or twist upon another part of the same, or by being wound about and restricted by the lateral roots. It is therefore apparent that the better policy would be, even where only a few trees are wanted, (and this remark applies with equal pertinence to all trees) that other things being equal, such as comely shape and healthy condition, the younger and smaller trees are resily cheaper at the same price than the larger, and can generally be obtained for much less. For forest culture the smaller trees are indispensable to success.

Again it is frequently the case that the lower branches are trimmed off to a mischievous extent, which also is a mistake; for where a tree has sufficient space to grow in, but little trimming is necessary, and it is a false taste which seeks to improve (?) upon nature by depriving a tree of its normal physiognomy and distinctive character by carving it into grotesque or inappropriate shapes; it is simply mutilation, and is certain to result in the premature decay and death of the victim. The flattening of the head by certain aboriginal tribes, and the distorted feet of the fashionable Chinese ladies, are further and pertinent illustrations of analogous hideous violations of natural form.

In compliance with my request to Dr. Arthur B. Stout, of this city, for a relation of his experience with the *Eucalyptus* in connection with his medical practice, I have received the following:

MR. STEARNS:

Dear Sir: In response to your invitation, I am happy to contribute to your important article on the culture and uses of the *Eucalyptus* in California, my experience of the medicinal properties of that valuable plant. The *Eucalyptus* is not less precious for its medicinal virtues than it is ornamental in arboriculture and useful in the arts. Several months ago, incited by information derived from the *Practitioner* and other sources of knowledge, I collected and dried the leaves. The agreeable empyreumatic oil of the leaves, in evaporating, diffused a balmy odor through the house. I therefore considered that as this oil, as well as the catechu gum and kino, and the cajuput oil, are all similar hydrocarbons, their qualities must resemble the creosote, pyroligneous and carbolic acids in their disinfectant and hygienic properties. I have no doubt that *Eucalyptus* has these properties in a milder or weaker degree, only differing in being accompanied with an agreeable perfume, wanting to creosote and carbolic acid. As a purifier, therefore, of the musty atmosphere and unpleasant emanations in basements and cellars, I have recommended the scattering of the dried leaves in such places. The powder of the dried leaves scattered in trunks and among clothes will no doubt be as useful and more agreeable than tobacco or camphor to prevent the growth of moths or other insects.

Medicinal Value.

Its chief value is, however, as a sedative and antiseptic in asthma and throat diseases, nasal catarrhs, and affections of the mucous membranes. To utilize these properties I had a concentrated tincture with alcohol at 95° prepared by Messrs. Steele & Co., and also contrived an inhaler with which to introduce the vapor of the essential oil to the throat and lungs. I can testify to the excellent effect of this mode of medication. The paroxysms of chronic asthma are relieved and shortened, and acute attacks are quickly allayed. The inhaler is a simple instrument made of tin. It is a cup of a capacity of 4 fluid ounces; the lid, attached by a hinge, has a tube from the centre about three inches high, bent near the end at a right angle, and terminated with a month piece like that of a speaking trumpet. The cup is on legs so that a spirit lamp may be placed underneath, and has a wooden handle to move it about when heated. Put two ounces of boiling water, (4 tablespoonfuls) in the cup; add one tablespoonful of the tincture; and inhale the vapor, while the fluid is kept gently boiling with the spirit lamp. Again, I had prepared cigarettes with the coarsely powdered leaves. These produce a decidedly anodyne and antispasmodic effect. An agreeable syrup may also be prepared, useful in infantile maladies.

There can be little doubt but that the oil of *Eucalyptus*, and *Eucalyptine* when it can be procured, will be available remedies against malarious diseases of all types, and that the presence of the trees, cultivated in gardens, contribute to sanify the atmosphere from those emanations which give origin to epidemic diseases. That the parasitic insects which infest other plants do not relish the *Eucalyptus* is evident from the general cleanness of the leaves and the fact that the hydro-carbon oils are fatal to animal life. The balmy perfume, therefore, that exhales from them, must have an influence in destroying the parasites which frequent shrubs growing in their vicinity, tending to diminish if not suppress them.

Its General Acclimation.

In corroboration of the advantages to be obtained by the cultivation of this *Myrtacea*, may be shown the efforts made during the last fifteen years to acclimate it in Europe and elsewhere. Ramel has succeeded admirably in introducing this tree in Provence (France), in Spain, Italy, the islands of the Mediterranean sea, and in Algeria. It appears in the botanical gardens of Germany (Munich); and in Vienna, Austria, an apothecary, Lamalsh, has

raised 3,000 specimens from seeds. From these he has prepared tinctures and oils for medical purposes.

See annual report of Wiggon and Husemann of progress in Pharmacy, etc., Göttingen, 1871.

By the assiduity of Dr. Pigne-Dupnytren, this tree has been carefully cultivated in the garden of the French Hospital of the Mutual Benevolent Association. So, that institution enjoys already the benefit of the tree hygienically, and has its supply of leaves for tinctures and syrups. The leaves steeped in boiling water are also used as a pitane or beverage.

However obnoxious to parasites in general this tree may be, it appears it nevertheless has its own species in the *Psylla Eucalypti*. This insect is an Hemipteron, and appears on the *Eucalyptus*. It deposits a species of manna, called in Australia *Lerp* or *Laap*. It is a white substance, 53.1 per cent. of sugar syrup and 46.9 p. c. of a special modification of starch. This is prized by the inhabitants as a Manna; and is greatly sought for by the bees, who convert it into honey. Dobson (entomology) describes it as the cup-like coverings of the *Psyllidæ*, but Wittstein mentions six varieties of *Psylla*, and that one species produces a colored *Lerp* handsomer than the white, but as a deposit beneath the cup like shields of the insect. See same annual, Göttingen, 1870.

If this insect derives his *Lerp* from the aromatic and halmly oil of the *Eucalyptus*, and furnishes an agreeable aliment for the inhabitants, and a *Mt. Hymettus*-like honey stuff for the bees, certainly the husy little insect manufacturer, parasite as he is, may be freely pardoned. Very respectfully yours,

A. B. SROUT, M. D.

From experiments recently made upon myself, I find that small doses, 3 ij to 3 iij, of the infusion of the leaves (of young trees) drank when cold, quiet the nerves and induce sleep; quite likely, in ordinary cases of wakefulness, a pillow stuffed with the leaves would produce the same result. My friend, Dr. Kellogg, has prescribed the infusion in dyspepsia, and reports favorably. In addition to the many valuable properties of the Blue Gum herein recited, I have no doubt but camphor in considerable quantity can be obtained from it.

USEFUL INFORMATION.

Correcting Echos in Large Halls.

We clip the following from the Bloomington, Ill., *Panagraph*. "On Monday we took some observations in the court-room for the purpose of ascertaining the effect produced by the wires stretched across the room, for benefiting the acoustic properties of the same. Most of our readers are aware that it has hitherto been a subject of remark, and noticed by every one, that it was almost impossible to hear distinctly in the body of the court-room what was said in an ordinary tone of voice within the bar. This is now remedied. Mr. W. S. Carlock suggested that the stretching of small wires at a proper height and at suitable distances would be of great benefit. This has been tried, and the effect proves to be a vast improvement.

"We entered the room, Monday, while Mr. Ewing was addressing the jury in an ordinary and easy conversational tone of voice, and found no difficulty in distinctly hearing every word. We tried in various places from the remote corners to the center, and found it about the same. It appears to be a success. The theory is that the wires, although so small as to be hardly visible, break the sound waves, and prevent the reverberation which has hitherto been the chief obstacle and annoyance to listeners. Only three or four wires crossing the room each way produce this improvement."

We invite all who have occasion for it, to verify this experiment and communicate the result to us, for the benefit of those readers interested in this matter.

LINSEED OIL.—Linseed oil is made from the seeds of the flax plant (formerly called lintseed), by grinding them in a mill, and pressing the powder by hydraulic or other power. When first pressed it is of a golden yellow color, but soon collects impurities from the air and turns brown. The impurities can be washed out by stirring water into it thoroughly, and leaving the water to settle. It contains no stearine, and hence does not congeal at a low temperature. Its chief use is in decorative and preservative painting. Being mixed with the powdered colors, and spread on wood, stone or iron with a brush, it soon dries and hardens into a coating which acts as cement, varnish, and shield from weather. To quicken its drying it is often boiled before using. It is sometimes used in medicine as a laxative, and for this purpose is made from the raw seed without roasting. It is quite an important article of commerce.

LONGEVITY IN ECUADOR.—In the mountain town of Coxamarca, in the year 1862, there were seven persons—one of whom was then 114 years old, one 117, one 121, one 131, one 132, one 141, and the seventh had reached the extreme age of 147 years. One of these patriarchs at his death left 200 descendants to mourn his untimely end.

WHAT IS ARSENIC?—It is not yet settled among chemists whether or not arsenic is a metal; it is not absolutely known whether it is not itself a compound; the elements of it, if it is a compound, are of course not known.

GAS SWINDLING.—In alluding to the miserable quality of gas usually supplied to consumers, and the high price generally charged for it, the *Journal of Applied Chemistry* says:—"The custom of paying for gas by the cubic foot, is like buying all cloths at a uniform price per yard, without any question as to the fineness of the wool. No one would like to pay as much for shoddy as for cassimere, and yet shoddy gas is the principal article now furnished to customers, while the price actually paid calls for the best gas that can be made. It is really surprising that a monopoly of such a monstrous character should be permitted to maintain itself so many years in an enlightened community. The city companies should be compelled to furnish gas of a prescribed density, and fixed candle power. Some of the London companies pride themselves on keeping up the illuminating powers of their gas to the maximum standard of fifteen candles.

Besides the loss to the consumer in the amount of light afforded by a poor gas, there is another difference which tells in favor of the company. Assuming the specific gravity of poor gas to be 5, and that of rich gas to 750, the former will pass through the burner much faster than the rich, and increase the hills of the consumer from 30 to 50 per cent., without any corresponding increase in the photometric power of the gas."

From all this it would seem certain that there ought to be a fixed municipal standard, say fourteen or fifteen candles, prescribed by law, and an inspector appointed to see that the companies comply with it; and in case of any breach of contract, a heavy penalty should be imposed. Let us be no longer intimidated by the huggable of a parental government, but insist that swindlers who rob the poor, in order to divide 100 per cent. dividends, shall be huffed and punished.

SAWING WOOD WITHOUT A SAW.—Dr. George Robinson of New York, says *Moore's Rural*, has invented a process of cutting wood by passing a galvanic current over a platinum wire in sufficient quantity to raise its temperature to a red heat. He has found that gently pushing a piece of wood against a red-hot platinum wire, especially when aided by a slight sawing movement, the wood was divided in any required direction as by a handsaw, and, of course, without any effort of skill or appreciable expenditure of muscular power. The *Scientific American* says: "By arranging the wire with handles or other means, so as to guide it readily, the lumber, whether in trees, logs, or planks, may be cut easily as desired. There is here, therefore, a simple and easily applied force, which, in a child's hands, may be employed to fell trees, divide them into logs, and, in short, perform all the operations of the saw and the ax. The surface of the wood where thus divided, is, of course, slightly charred, but the black layer is very thin, and for many purposes not disadvantageous, as it is known to preserve timber. The battery employed need only be of the simplest character, as quantity, and not intensity, of current is required."

MARVELS OF THE INSECT WORLD.—The *Speculator*, in its notice of M. Touchet's work, "The Universe," says: "Man generally flatters himself that his anatomy is about the highest effort of Divine skill; yet that of the insect is far more complicated. No portion of our organism can compare with the proboscis of the common fly. Man can boast 270 muscles. Lyonet, who spent his whole life in watching a single species of caterpillar, discovered in it 4,000. The common fly has 8,000 eyes, and certain butterflies 25,000. M. Touchet treats it as an established fact that so fine are the sensory organs of ants that they converse by means of their antennae. Consequently the strength and activity of insects far surpass ours in proportion. In the whole field of natural science there is nothing more astounding than the number of times a fly can flap its wings in a second; it must in that point of time vibrate its wings five or six hundred times. But in rapid flight we are required to believe that 3,600 is a moderate estimate."

VARNISH TO PROTECT POLISHED METALS FROM RUSTING.—Dr. C. Pascher recommends the use of a solution of paraffine (one part by weight in three parts of petroleum) as a varnish, which may be usefully applied to polish metals, especially as, after having brushed this liquid over the surface of the metals, they may be gently wiped clean with a soft piece of flannel, so as to leave only a very thin film of the varnish, yet sufficient for the protection of the polish.

WHY COLORED PERSONS STAND HEAT BETTER THAN WHITE.—It is alleged that colored persons are never sunburned because the dark color of their skins absorbs the heat and conveys it into the system, so that it is converted into sensible heat, producing perspiration. But the white skin does not absorb the heat; the sun's rays therefore rest upon and burn it.

NON-INFLAMMABLE FABRICS.—Carteron and Rimmel have taken out a patent in England for the use of acetate of lime and chloride of calcium for rendering goods non-combustible. Equal weights of each are dissolved in twice their weight of hot water.

PULVERIZING CAMPHOR.—If a few drops of Castor-oil be added to the alcohol employed, in the proportion of 1 to 24 or 30, the camphor is much more easily reduced to powder.

GOOD HEALTH.

Effect of Arsenic on the Human System.

The first effect of arsenic when administered is local. It is classified as an irritant, but not a corrosive poison—that is it inflames the parts it comes in contact with, without destroying or softening or perforating them; the local effects thus first produced cause local symptoms; these appear generally in an hour after the poison has been swallowed. They are: burning pain in the stomach, which, as the poison passes down, extends along the intestinal tract. It increases in severity, is accompanied by great thirst, dryness and constriction of the throat, vomiting and purging.

The matters vomited are dark, bilious and offensive. By this time more or less of the poison has become absorbed; it enters the blood and produces a second class of symptoms called remote, the action being apparently mainly upon the blood corpuscles; these symptoms are characterized by great prostration of strength, anxiety and depression of mind, a peculiar lividity of the face, a blue line under the eyes, the intellect being as yet unaffected and the mind clear; death may ensue at this stage of the action, due to the prostration; usually taking place under these circumstances, in from one to eight days.

If life be continued, the effect of the arsenic is apparent upon the nervous system and brain; stupor, passing into profound coma, may develop itself in case the action is primarily upon the brain, delirium and convulsions, passing into tonic spasms, in case the spinal cord is also involved, may precede death; all of these symptoms may not be present in any one individual; the patient may recover from all these symptoms, which may be called primary, and may die from the secondary effects of the poison years afterwards.

White arsenic, when taken into the stomach, is dissolved both in the stomach and intestines by the gastric and intestinal juices; spread out upon the posterior surface of the intestines, is a set of blood vessels which compose what is known as the portal system; the arsenic thus dissolved passes into these blood vessels through their walls; these vessels unite, thus forming the large trunk known as the portal vein, which empties itself directly into the liver, so that this organ is not only more fully supplied with blood than any other, but it is supplied with blood charged with arsenic from the intestines; hence the liver is more likely to contain this poison than any other organ. It passes from the liver into the general circulation, and thus produces its remote effects. Most probably it does its fatal work on the blood itself, disintegrating the blood-corpuscles, thus rendering the blood unfit to perform its functions.

From 2½ to 3 grains of arsenic would kill an adult; less quantities than that have been fatal; and more has been taken without producing death. Arsenic would not probably be found if death ensued from the secondary effects. Persons have died from the primary effects of arsenic in eight days, and no trace of the poison has been found in the body on analysis. Constriction of the throat, when arsenic is taken, occurs in from one-half hour to an hour ordinarily.

The effect of arsenic on the heart and lungs is as follows: The pulse during the great prostration is generally small and rapid, and sometimes, when the prostration is very great, the pulse is less rapid than usual; the respiration is difficult, requiring a voluntary effort to breathe; it is sometimes quick and sometimes slow; the action of the poison on the lower intestines is to produce tenesmus; i. e., straining without result; inflammatory action produces a dry and hot skin at the first stages; during collapse the skin is cold and clammy and sometimes moist; the inflammation causes dryness and a folding up of the mucous membrane; there is also more or less faintness; sometimes entire syncope; purging may be wanting; convulsions are exceptional; the same is true of delirium.

Persons have been poisoned by rubbing arsenic on the head; the article that has produced it, is called Fowler's solution. Persons are also known to have died from sleeping in rooms papered with arsenical green.

ASPARAGUS FOR RHEUMATISM AND GOUT.—A medical correspondent of an English journal says the advantages of asparagus are not sufficiently estimated by those who suffer from rheumatism and gout. Slight cases of rheumatism are cured in a few days by feeding on this delicious esculent, and more chronic cases are much relieved, especially if the patient carefully avoids all acids, whether in food or beverage. The Jerusalem artichoke had also a similar effect in relieving rheumatism. The heads may be eaten in the usual way, but tea made from leaves of the stalk, and drank three or four times a day, is a certain remedy, though not equally agreeable.

WASH FOR SUNBURN.—Take two drachms of horax, one drachm of Roman alum, one drachm of camphor, half an ounce of sugar candy, one pound ox-gall; mix and stir well for ten minutes or so, and repeat this stirring three or four times a day for a fortnight, till it appears clear and transparent. Strain through blotting-paper, and bottle up for use. It is said that strawberries rubbed over the face at night will remove freckles and sunburn.

Instinct of Appetite.

It is nearly always best to consult the instinct or appetite as the kinds of food children eat. The quantity needs to be guarded far more than the quality. Where there seems an over-weening desire for a particular dish, it may pretty generally be presumed that some element in it is required by the child's system, and it is better to gratify it even to what may seem an intemperate degree than to unduly restrain it. When the system is fully supplied with the constituent it needs, it will cease to turn greedily toward it.

Dr. Hall's injunction is, "never in sickness or health to force your children (or yourself) to take one single mouthful of food or drink that they do not like." This is against very much of our common practice, and whether or not it be a fact that such a rule should have no exceptions, there can be no doubt that in general it is much safer than the more arbitrary method. It does not, by any means, sanction the giving of a sick child everything it does like, though even if this were done in minute quantities the danger probably would be less than in stuffing it with that for which it has an aversion. In sickness there is often a morbid appetite, which craves more food than can safely be allowed, but a morbid appetite and a prevented one are different things. Most of us can recall occasions when a much craved but forbidden dish justified our instinct by proving really beneficial in spite of being surreptitiously obtained. "Begin by taking a little at a time of what is so urgently craved, and feel the way along to an amount which nature can bear."—Ohio Farmer.

DEATH FROM THE BITE OF A SKUNK.—Mr. N. Douglass, of Kassel, Kansas, recently died from the effects of the bite of a skunk. On the 13th of June last, he complained of an unpleasant sensation in his thumb, which he at first thought was the incipient stages of a felon; but, on consultation with a physician, he subsequently referred it to the bite of a skunk which made a grip at his thumb as he was camping out on the prairie about five weeks previous. The savage animal could not be made to loosen his hold till pounded nearly to death and choked off.

On the 14th the pain extended up the arm, reaching the shoulder, with sharp pains shooting through the chest, the pain in a measure leaving the thumb. On the 15th, Mr. Douglass complained of a choking sensation in the throat and a difficulty of breathing, and could swallow only with great effort, but appeared cheerful and hopeful, and was about nearly all day, visiting different business places in town. In the evening, at about 7 o'clock, the doctor was sent for in great haste, and found him in a raging condition, could not get anything down him or into his mouth, and found that he had eaten nothing during the day. Every breath-stirring, or the slightest disturbance, brought on these paroxysms. The doctor did all that medical science could do to relieve his patient, but to no purpose, only to allay momentarily. From this time on he continued to grow rapidly worse, the paroxysms more frequent, harder, and of longer duration, until death came to his relief at half-past 3 o'clock on the morning of the 16th.

TREATMENT IN SMALL-POX.—A correspondent, "Q. A. T.," sends us the following: "The day dressing may be good in small-pox, but is not so pleasant as a remedy. I tried it when visited by that complaint in its most malignant type, some years ago. We had two cases, and although decidedly 'Eclectic,' we called in a homœopathic physician. The first case was badly marked. In the second, the disease, up to the time the pustules appeared all over the body, seemed as virulent as in the first case, and then almost immediately (in a few days) subsided, without leaving a scar. The progress and usual course of the disease seemed arrested by the free application of thick sweet cream to all parts of the body. In some instances the disease is aggravated by the close room and extra cover, which the kindness of friends force upon the patient. Let them have an open window and light cover in the coldest season, if the ground were covered with snow.

THE COTTON PLANT ROOT IN MEDICINE.—The root of the cotton plant, which is employed as medicine, has been subjected to careful chemical analysis by Professor E. S. Wane. He obtained from the root a dark red resinous mass, insoluble in alcohol, ammonia, chloroform, and ether, but soluble in caustic solutions of soda and potash. It contains no alkaloid principle. He concludes that it is an acid resin, and suggests for it the name of gossypic acid.

REMEDY FOR TOOTHACHE.—Powdered alum, two drachms; spirits of ether, seven drachms; mix, and apply to the tooth. Another: Chloroform, one ounce, alum, five grains; morphine, three grains; mix and apply with cotton.

THE CAUSE.—Paul Bert, in an article in *Comptes Rendus*, ascribes the cause of death of fresh-water fishes when placed in salt-water to the chlorides present in the latter.

CRAMP COLIC.—It is said that two pills of gum camphor swallowed will give relief in twenty minutes.



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SAN FRANCISCO:

Saturday, August 3, 1872.

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DOMESTIC ECONOMY.—Rice—Its History and Value; Salad; How to Distinguish Edible Mushrooms, 75.

RED HEADED WOODPECKER.—We have received a communication from J. S. Williams, Lake Port, asking how he can prevent the woodpecker from eating and injuring his apples. He thinks them a bird of good taste and judgment as they attack his best fruits. Could destroy them with the gun, but does not like to throw shot among his trees. Can any of the readers of the RURAL suggest a means of preventing their depredations, that shall be harmless to the fruit and tree, and yet effective?

Thanks to J. S. W. for his expression of appreciation of the PACIFIC RURAL PRESS.

EDITORIAL VISIT.—We have had the pleasure of a call from Mr. H. D. Emery, of the *Prairie Farmer*, of Chicago. Mr. E. has bestowed the labor of over fifteen years on that journal, and it is now the most widely circulated weekly agricultural journal in the West, while its editorial standard is scarcely excelled by that of any other agricultural journal in the Union. The *Prairie Farmer* did not suspend on account of the great fire, and it is a pleasure to us to learn that its subscription list has been greatly increased since that event. Mr. Emery and associates lost a fine office and building in that conflagration. We trust his visit to S. F. may prove pleasant and profitable to himself, as we are sure it will be to our friends who may meet him.

HELPING US.—Franklin Ritter, of Elliott, San Joaquin Co., has our thanks for three subscriptions in advance, and the coin for the same. Mr. R. may consider this the commencement of a club, and send us additional names at club rates. In small communities and for special reasons we are always liberal about our terms, we appreciate his active effort in trying to get up a full club.

GRAPE CULTURISTS are referred to an advertising notice in this issue, calling for White and Black Hermitage grapes.

ON FILE.—Silk Culture, its Future and Success, is in type. Colfax correspondence, two articles. Silk, by W. H. B. Cor. from F. M. L.

Editorial Notes Among the Farmers.

Five miles out of San José towards the head of the valley, or in the direction of the New Almaden mines, we called at the residence of the old pioneer, Isaac Brenham. Mr. Brenham formerly owned some 2,000 acres of land here, but of late years has sold off till now his farm consists of 450 acres. He has 250 of this in wheat, which at the time of our visit was nearly ready for the header, and will yield from thirty to forty bushels to the acre. He has fifty acres in vineyard, about one-fourth of foreign varieties, the balance of the Mission; has about 5,000 gallons of wine on hand and 1,800 gallons of brandy, both of which are of good quality. Mr. Brenham has not given the brandy or wine business very close attention, but is prepared with vinous machinery, still, etc., for a successful and profitable business. As Mr. O'Donnell remarked, this business alone, if well attended to, is a fortune, with the superior soil and other advantages possessed by Mr. Brenham.

Stockton's Vineyard.

A near neighbor of Mr. Brenham is Dr. N. H. Stockton, who ten years ago bought 100 acres of land and planted vines from year to year until now he has sixty-five acres as a bearing vineyard.

He has on hand, of the vintage of 1870, about 11,000 gallons, and of 1871, 13,000 gallons. He has been giving his strict personal attention to his vineyard, and to him at least wine making and selling has been successful, both in the article produced and financially. He has a large wine house and cellar in which he makes and stores his wines. He has until lately sold his wines at about fifty cents per gallon, and at that price has achieved his financial success; but, for the past two years, has been sending samples of his wines East to his brother, who has established an agency or commission house for their sale at Little Rock, Arkansas. They are liked so well in that vicinity that hereafter he intends sending all he make there, where they find ready sale at very satisfactory and remunerative prices. We noticed the wines of this vineyard partake considerably of the character of the German Rhenish wine, and are quite light in alcohol. Our next call was at the

Vineyard of D. M. Harward,

Whose place is 7½ miles from San José, and who has the largest vineyard in the county—140 acres. Mr. Harward is now East making a market for his wines, but we found a very intelligent German, John Schindler, his wine maker and foreman, in charge of his place. From him we obtained much valuable information. Mr. H's vineyard is young—the first wine made is but four years old. Has only samples on hand of wine made previous to 1871—of that vintage has about 20,000 gallons.

Pruning the Catawba Grape.

Like many other wine growers of the State Mr. H. had concluded that the Catawba grape could not be made to pay for wine or any other purpose in California, on account of its being so shy a bearer, and had cut down many of his vines of this variety and grafted them with other and better bearing kinds, and intended in this way to get rid of them all.

Mr. Schindler who has worked in the Catawba vineyards about Cincinnati for a number of years, protested against this course, and induced Mr. H. to spare two or three acres of Catawba vines and allow him to prune some of them, with a view to increasing their productiveness. We went out to the vineyard to see the result of the experiment, and we assure our readers it was most astonishing. The usual course of short pruning—cutting back the canes intended for fruit, to from two to three buds, had been followed with all the Catawba vines in the field, except four rows. These four rows had been pruned by Mr. Schindler after his plan. He cut all the canes of the last year's wood, except from four to six of the strongest, according to the strength of the vine, off close to the old wood. These four or six canes left, he cut off about three feet long and tied them loosely to a stake until the spring cultivation was done. He then cut the string and laid these canes down on the ground, spreading them around the body of the vine as much as possible so that one would not lie upon another. And now for the result. On the vines pruned in the ordinary way we could find but a few scattering, poorly formed, and poorly filled bunches of uneven sized grapes, not to exceed, on an average, from five to six pounds

to a vine. While the vines pruned as above described, were loaded as we have scarcely ever seen vines loaded before. Each cane had thrown out side branches at each joint and every one of these side branches were crowded full of the finest formed bunches of Catawba grapes we ever saw. The bunches were compact, long and full and the vines will average from 20 to 40 pounds each. Mr. Schindler assures us, that by pursuing this system of pruning from year to year—cutting off the old canes each year and leaving a proper number of young canes for fruit, the Catawba can be made one of the most prolific bearers, and the grapes are much improved for wine purposes. All wine growers should see the result of this experiment to appreciate it.

Corroborative Testimony.

In speaking of this matter to Dr. W. S. Manlove of Sacramento county, he told us that for the last three years he had been pursuing the same course with his Catawba vines, and with the same result. To obtain the best results from this system, the head or crown of the vine should not be over a foot or eighteen inches above the ground, so that the grapes when growing may lie directly upon it. We find that it is becoming the opinion of many of the best wine growers in the State, that vines generally will do better by leaving the bearing canes longer, than it has generally been practiced, and Mr. Schindler shares in this opinion. Longer canes and fewer of them is the coming rule, and more wine and less alcohol is the claimed and desired result.

The next vineyard visited was that of

C. H. La Frank,

About one mile from that of Mr. Harward. This vineyard contains 100 acres—60 of Mission and 40 of foreign kinds, planted from 4, 5 and 6 feet apart, according to requirements of varieties and soil.

Although the proprietor was not at home, his good wife, her little son and the foreman, managed to make our visit very agreeable and valuable to us. We found here one of the best arranged and regulated wine houses and cellars we have seen in the State. It has three stories, one for crushing the grapes, one below for fermenting the wine, and the basement or cellar for storage. It is 70x80 feet square. The entire building is in excellent condition, clean and tidy, and supplied with all the necessary tools and improvements of a modern wine making establishment. This cellar is called the new wine cellar. A short distance from this is another building, partly below and partly above ground—one story—70x30, which is called the old wine cellar intended for storing wines until they become fully ripe. In the two cellars we found about 40,000 gallons of wine; 600 gallons, 6 years old; 1,000, 5 years old; 4,000, 4 years old; 8,000, 3 years old; 13,000, 2 years old, and 18,000, 1 year old. Mr. La Frank makes no brandy.

An Important Fact! Redwood Casks or Butts for Storing Wine.

At this place we saw fully demonstrated the important fact that redwood is equally as good as the best of oak for the storage of wine. Mr. La Frank has redwood butts in which he has kept wine seven years, as well as it can be kept in any other material. He has now in his cellar seventeen of these butts all made of redwood and all full of wine. Two of them are of the capacity of 4,300 gallons each. They are made on the place from split staves obtained in the redwoods near by. Before shaving they are steamed for two or three days, and while steaming are brought to the proper shape, then seasoned, shaved and put together. It is claimed for them that in addition to being only half as costly, they will last longer than casks made from the best of oak. Worms never touch them and they impart neither taste or color to the wine. To Mr. La Frank undoubtedly belongs the honor of demonstrating this important fact, and to him the wine-growers of California are indebted for a discovery that adds millions to the value of their industry. In this connection we would call attention to the premium of \$50 offered by the California Vine Growers' and Wine and Brandy Manufacturers' Association for the best and cheapest tank, cask, or butt for the storage of wine.

Fine Angelica.

We were shown here a sample of angelica, that in our opinion is superior to anything of the kind in the State, and if exhibited at the Vine Growers' Fair can hardly fail to secure the highest award. It is four years old.

The Silk Business.

So much has been written upon the manufacture and culture of silk in California, that the subject has become so exhausted as to leave little room for further argument. As the manufacture and culture of silk is a business requiring great attention and skill to make it one of profit; and as experiments in the growth of the mulberry and raising the cocoons, prove conclusively that the soil and climate of California are well adapted to silk culture, the question presents itself, in what manner shall we prepare ourselves to make the business one of

profit, thereby adding one more branch of industry to the many now being prosecuted, and build up an industry, the wealth of which, when established, will equal the combined products of agricultural departments of the entire State.

From statistics we find the raw silk production of the world is estimated at \$250,000,000, China and Japan, furnishing about one-half of the amount and the remainder grown and manufactured in Europe and India; the United States alone consuming the past year \$125,000,000 worth of manufactured goods, with every prospect of the consumption yearly increasing.

Referring to the last China price current, we find that market drained of the crop of raw silk of 1871, an event that has never before happened in that country, and in speaking of the crop of the present season it says the first feeding of the worm produced two thousand bales of one hundred pounds each, which is of inferior quality, being uneven and full of slugs; that the prospect of the second crop was but little better, while hopes were entertained that the third, fourth, and fifth feedings would be of better quality.

From this it will be noticed that country produces five feedings, or as many seasons of reeling the silk from the cocoons. The first feeding commencing when the young leaves of the mulberry first start into existence; the second, when the leaves remaining become a little more matured, and so continued until the last feeding strips the trees of every leaf. The silk reeled from the first and second plucking not being of the lustre and strength of that which is reeled from the cocoon fed from the leaf when more matured.

These facts are mentioned as the great majority of us have little conception of the management and magnitude of the silk culture interest as well as to impress upon such Californians as have engaged in the growth of silk the immensity of the business, and to call the attention to the extent to which it might be increased in our own country. While China, as well as other nations, have the advantage of immense numbers of cheap laborers, and while there is the prospect now before us of considerable advance in the price of the raw material, with every certainty that labor which heretofore in those countries has worked for mere pitance, will from this time forward, receive advanced wages, it would seem that the present is a favorable time for those who have heretofore devoted some attention to the growth of the mulberry and raising of cocoons to look at the business with reference to its future greatness and with a determination to make a success of that which has heretofore simply been experimental.

In many families there are children and others whose time might be utilized in the gathering of the mulberry leaf, and feeding the worm, a duty, light, neat, and instructive, which would fill many an idle hour, now valueless and unproductive, whereby a clear gain would accrue in a pecuniary point of view to such families, while the influence of their example would stimulate others to do likewise, and the result of which in a few years would be to build up an industry second to none other.

The Silk Manufactory now in operation at South San Francisco, with the exception of some small lots of California silk, purchase the raw material from China; but so convinced are they of the superiority of the California reeled silk, that they would willingly pay quite an advance over that which they import. Since being in operation they have received many letters from different sections of California, and Mexico, asking the price they would pay for cocoons, to many of which they have replied they are not purchasers of the cocoons; but would buy the raw silk. The growing of the worm and reeling of the silk from the cocoon is a speciality entirely separate and foreign to the business of manufacturing.

There is no more reason that they who plant the mulberry, and raise the cocoon should expect the manufacturer to reel the silk, than there is that the cotton planter should consider it the duty of the manufacturer to gin the cotton. Both are separate, and distinct from the business of manufacturing. The manufacturer has sufficient to occupy his time, in preparing the raw material for articles of consumption.

The San Francisco company has made some experiments in the reeling of the silk. Whatever information they may possess, they will be pleased to communicate to those who are engaged in the business of raising the cocoon, and they will also furnish cheap reeling machines to such as are not acquainted with the manner of construction, with the assurance that they will purchase all raw silk produced when properly reeled, paying the highest market rates therefor. Let those who have heretofore engaged in the culture of silk, which as yet has been but experimental, as well as others who have the business in contemplation, form the determination that the business shall be a success. Let them reel and prepare the silk for market among themselves, and we predict that in a few years the amount of raw silk produced in this State will be such as to materially add to the resources of California.

Wines of City and Country.

We have heard it remarked that the bad character that has sometimes attached to California wines in Eastern markets, was owing in a great measure to the fact that such wines were the product of inexperienced country wine makers, knowing little or nothing of the proper manner of conducting the fermentation and managing the wines until put upon the market, and that, therefore, an inferior article was sent abroad to the injury of the more skillful and expert manipulator of wine in the cellars of San Francisco.

Now, we believe nothing of the kind, and in support of our belief, we offer the following, which we clip from the *Sonora Independent*:

The Wine Interest.

Mr. A. Champney, whose large vineyard is picturesquely located in a bowl of Table Mountain, about two miles west of Columbia, and who is so well known to many of our citizens, is beginning to reap the fruits of his labors. Last week he received orders from a French firm in Stockton, for all his marketable wine, amounting to some four or five thousand gallons. Prices are not given, but we understand, being sold in large quantities, they consider it at a remunerative figure. His wines were pronounced by the firm as very fine—some qualities even superior to any California wines they had met. One variety in particular being tested and compared with a celebrated French wine, in his presence, which they assured him they knew to be the genuine imported article, was pronounced by them to be fully equal, and if anything rather superior to the imported wine. It only needs such wines and a ready market to make Tuolumne vineyards a greater source of wealth and permanent prosperity than most any other branch of business.

Appreciated Abroad.

California wines are gaining popularity and reputation abroad. The *Mobile (Ala.) Daily Star* alludes to a consignment of these wines received by a prominent firm of that city "direct from the vineyards," comprising Hock, Claret, Muscatel, Sherry, Port and Angelica, and also a lot of pure grape brandy. The *Star* says these wines were "tested by some of the most experienced wine testers in Mobile, and in every instance they expressed astonishment that such wines could be produced on the American continent." "As to the grape brandy," the *Star* adds, "it needs only age to render them equal if not superior to the best European brands." This praise is encouraging, coming from a source where judgment as to the superiority of wines may be considered worthy of respect.

Here it will be noticed that one lot of wine, "rather superior to the imported French wine," was the product of a cellar somewhere "in a bowl of Table Mountain;" whilst the other was in a consignment "directed from the vineyards." It would appear that good wines can be made in the country and put upon the Eastern markets, with no discredit to the best California wines, though they were not manipulated in the cellars of San Francisco by "skillful wine makers."

Wines of Different Districts.

The wines of California differ widely in quality, and well they may, for hardly any two soils will produce wines exactly alike. The alluviums of the valleys produce enormous crops of grapes in seasons in which there is neither rust or mildew to injure the vines; but the wines from such localities are generally inferior to those of hilly and mountainous districts.

The wines of the plains, or the red lands of the Sacramento valley, are better than from the river alluviums, and nearly equal to those of the foothills adjacent, to the eastward; for the very reason, perhaps, that the red lands are but the debris of the rocks brought down to the plains. Then there are the chalky districts, so called, and the more completely volcanic, that extend for miles together along the foothills, producing wines of a wholly different character from the other, and quite independent of the particular manner of their making up.

This is also an admitted fact in regard to the wines of different districts of the grape growing countries in Europe; particular vineyards producing wines of superior excellence and value. Now these are the

Wines of the Country,

In contradistinction to those made up in the cities, and their reputation stands not on their having been made up in any particular city of France or Germany, but solely on the quality and kind of grape from which they are made and the soil on which they grow. Nor are the grapes of these particular localities, transported long distances to large cities to be made into wine, but are made up to a great extent upon the very domain of the producer, and nowhere else.

And so it will be in California at no very distant day, indeed it is so now. Just as good

wines are made in the cellars of Napa or Sonoma valleys, as can be made in San Francisco. Equally as good wines can be procured of the Orleans Hills Vinicultural Association in Sacramento, or from the private cellars of B. N. Bugbey, of Folsom, as from any cellar in San Francisco.

Of the wines made at the vineyards, the different kinds and qualities of grapes are kept separate or blended in the making as suits the convenience or skill of the wine maker. He has just as fine cellars as any city can produce, and equally skillful manipulators in the management of wines. We can see no reason then for calling the wines of country cellars, "manufactured stuff," any more than the wines of Los Angeles and every other heard of place in the State, brought to San Francisco to be doctored and made to swell to double their original volume, in cellars wherein on certain places are posted up "no admittance," and probably where carbonic acid generators are kept out of sight.

If there is any complaint about California wines at the East, other than their too great strength, it comes from the manipulation they undergo from unscrupulous middlemen or consignees who put them upon the market; and it is simply absurd to charge it anywhere else, or to insist or intimate that to get good California wines, purchasers must look to San Francisco alone for them, because there they have "skillful wine makers."

The Smyrna Fig.

EDITORS PRESS:—Will you please favor me with a description of the white Smyrna fig, also the shape of the leaf; we have two varieties of figs here, both are claimed to be the white Smyrna; we are very anxious to know which is the right one. A. D. C.

Riverside, July, 1872.

There are thirty or forty well-known distinct varieties of figs, and of these there are some

eight or ten cultivated in California. Among them we find the true Smyrna or Turkish figs, or rather the kinds from which are made by drying, the genuine Smyrna figs of commerce. They are common in Turkey, Egypt and all along the shores of the Mediterranean to Portugal, and are sometimes called Lisbon figs.

One of these is known as the large White Genoa, and is one of the largest figs grown; obovate or pear shaped, with pale yellow, thin skin; the pulp is red, very sweet, and in California grows to so large size as to make it difficult to dry them. The leaf of this variety is represented by Fig. 1, of course greatly lessened from the natural size.

The other Fig., No. 2, is the White or Green Ischia, known also as the St. Domingo. This is a much smaller fig, seldom more than an inch and a quarter in diameter, with a pale yellowish green skin, so thin that the dark purple pulp can be seen through it. It is a more moderate grower than the Genoa in most soils, but a good bearer and probably the best known fig for drying, being very sweet and of delicious flavor, and on account of its smaller size more easily handled without injury than the larger White Genoa.

Most of the purple or black figs have leaves similar to Fig. 2, and nearly all the varieties if allowed to get dead ripe on the tree, and then carefully managed in the drying will make a tolerable dried fig, but they never equal the white varieties, and like the poor wines of any country should never be put upon the market to the injury of the reputation of better sorts. In all the catalogues at our command none give the name of Smyrna, to any particular variety; but they do speak of several varieties of Smyrna or Turkish figs as among the best for drying for export.

Fruits—Cause of Low Prices.

We have been watching the fruit market from week to week to see if we could discover where the fault lay, causing the low profit derived by the producer. In a former number of the *RURAL* we gave one cause, that of the middle men or commission fruit merchants charging too much for the fruit and keeping it on hand, till quite unsaleable, and then dumping it into the bay at the expense of the producer.

Now we have another cause, and the producer must judge with whom the fault lies. The grower has a variety of tree fruit or melons almost ripe enough for market, he gathers a small lot, rushes them into the market, and being the first of the season, a high price is obtained for a few specimens though inferior in quality because yet unripe.

Another and another grower hearing of the high price obtained for unripe fruit, throws upon the market an increased quantity of the half ripe fruit,—there are not enough buyers to pay the high prices charged, and the unripe stock accumulates. But now begins to come in fruits of the same varieties perfectly ripened, nobody will buy the unripe fruit when they can get better, it is offered for little or nothing, but no one will take it hardly as a gift, and yet it is kept upon the market, greatly to the lowering of prices for better fruit. Whose fault is it?

Too much fruit of an inferior quality is constantly being thrust upon the market; whose fault is it that it does not bring remunerative prices? Good fruit will always sell; poor fruit sells slowly at low prices.

What is the moral? Let the farmers *dry* all

their more ordinary fruits, and bring only their best to the market, and good paying prices can be obtained.

Flour Shipments.

The following is a statement of the exports of flour from this port for the year ending June 30th, 1871:

	Flour,
1871-72	Bbls.
July.....	15,399
August.....	50,593
September.....	30,934
October.....	12,879
November.....	16,188
December.....	9,005
January.....	27,248
February.....	12,562
March.....	27,667
April.....	17,226
May.....	36,470
June.....	13,581
Totals.....	269,752
Per C. P. R.....	20,585
Total.....	290,337

Settlement, consequent on the diamond discoveries is extending very fast into the interior of Southern Africa, and we ought to find there a good market for our flour. The receipts from the interior of the State since the last issue of the *DIRECTOR*, have been 40,181 qr. sks., from Portland, Oregon, we have received 1,080 sks., 940 hf. sks., and 11,142 qr. sks., and from other Pacific ports 590 hf. sks., and 1,307 qr. sks. For the year ending June 30th, 1871, we have received a total of 277,539 barrels, 139,166 being from the interior of the State, and 138,373 from Oregon. The latter State thus supplies us with as much as our own. The cause of this is, that we can find a better market abroad for our wheat than our flour, and that we, of course, are thus necessitated to export the former to ground.

State Fair Races.

The Directors of the State Fair Agricultural Society have completed the speed programme for the coming Fair, which is as follows. The purses are liberal, and the general arrangement of the programme excellent:

Thursday, Sept. 19th.—Running race, mile heats, between the three year old filly by Norfolk, dam Margarette, owned by Theo. Winters, and the three year old filly owned by John Hall, by Woodburn, dam Peggy Ringold, stake, \$2,000. Running race, dash of one mile and a quarter, free for all; purse, \$400; first horse, \$300; second horse, \$100. Trotting race, mile heats, three in five, free for all stallions; purse, \$750; first horse, \$500; second horse, \$175; third horse, \$75. Trotting race, mile heats, three in five, free for all horses that have never trotted better than three minutes; purse, \$750; first horse, \$500; second horse, \$175; third horse, \$75.

Friday, Sept. 20th.—Running race, mile and repeat, free for all three-year olds; purse, \$750; first horse, \$500; second horse, \$175; third horse, \$75. Running race, mile heats, three in five, free for all; purse, \$1,000; first horse, \$700; second horse, \$200; third horse, \$100.

Saturday, Sept. 21st.—Trotting race, mile heats, three in five, free for all double teams; purse, \$750; first team, \$500; second team, \$175; third team, \$75. Trotting race, mile heats, three in five, free for all horses that have never trotted better than 2:50; purse, \$750; first horse, \$500; second horse, \$175; third horse, \$75.

Monday, September 23d.—Running race, two miles and repeat, free for all three-year-olds; purse \$750; first horse, \$500; second, \$175; third, \$75. Trotting race, mile heats, three in five, free for all horses that have never trotted better than 2:40; purse, \$750; first horse, \$500; second, \$175; third, \$75. Pacing race, mile heats, three in five, free for all; purse, \$600; first horse, \$400; second, \$140; third, \$60.

Tuesday, September 24th.—Trotting race, mile-heats, three in five, free for all five-year-olds; purse, \$500; first horse, \$350; second, \$100; third, \$50. Trotting race, mile heats, three in five, free for all; purse, \$1,000; first horse, \$700; second, \$200; third, \$100.

Wednesday, September 25th.—Running race, two miles and repeat, free for all; horses to be handicapped; purse, \$1,000; first horse, \$700; second, \$200; third, \$100. Trotting race, mile heats, three in five, free for all horses that have never trotted better than 2:35; purse, \$750; first horse, \$500; second, \$175; third, \$75.

Thursday, September 26th.—Trotting race, two miles and repeat, free for all; purse, \$1,000; first horse, \$700; second, \$200; third, \$100. Pacing race, two miles and repeat, free for all; purse, \$600; first horse, \$400; second, \$150; third, \$60. Running race, single dash of one mile, free for all two-year-olds; purse, \$300; first horse, \$250; second horse, \$50.

Friday, September 27th.—Running race, mile heats, three in five, free for all beaten horses; purse, \$750; first horse, \$500; second, \$175; third, \$75. Trotting race, mile heats, three in five, free for all horses that have never trotted better than 2:32½; purse, \$750; first horse, \$500; second, \$175; third, \$75.

Conditions.—Trotting and pacing races will be governed by the rules of the National Association; running races by the rules of the State Agricultural Society. Entries to running races will close at 12 o'clock m. of the day preceding each race, and entrance money must accompany the nominations. In the handicap race no horse shall carry more than his entitled weight; 10 per cent. entrance; five per cent. if declared. Entries to trotting and pacing races will close on the 8th of August and entrance money must be paid at or before 12 o'clock of the day preceding each race, or the parties will be subjected to the penalties of Rule 6, Article 2, of the National Association. Entrance fee, 10 per cent. on all of the above races except the handicap.

No horse shall be drawn except by permission of the judges of the race, under the penalty of being expelled, unless at or before 3 o'clock p. m. of the day preceding the race (omitting Sundays) the proper party shall have lodged with the Secretary a written notice of his intention not to start, after which notice the horse so drawn shall be ineligible to start in the race. In all trotting races where eight or more horses start the distance will be 150 yards. When less than eight horses start the distance shall be 100 yards.

Heats in each day's races may be trotted or run alternately. A horse distancing the field or any part of the same shall only be entitled to first premium. In all cases three to enter and two to start. No money will be paid for a walk over. Entries by mail or telegraph to be addressed to Robert Beck, Secretary State Agricultural Society, Sacramento.

The following named gentlemen will compose the committee to handicap the horses for race No. 14: A. A. Maillard, Marin county; Andy Stevenson, Solano; John Boggs, Colusa; Nathan Coombs, Napa.

On Saturday, September 28th, the celebrated mares Goldsmith Maid and Lucy will trot mile heats, three in five, for a purse of \$10,000.

A NEW BEET.—F. G. of Nevada is raising a new kind of beet this year; its shape being more like that of a large, flat onion, than any ordinary style of beet. They will be on exhibition at the State Fair in September.



Do as Near Right as You Can.

The world stretches widely before you,
A field for your muscle and brain;
And though clouds may often float o'er you,
And often come tempests and rain,
Be fearless of storms which overtake you—
Push forward through all like a man—
Good fortune will never forsake you
If you do as near right as you can.

Remember, the will to do rightly,
If used, will the evil confound;
Live daily by conscience, that nightly
Your sleep may be peaceful and sound,
In contests of right never waver—
Let honesty shape every plan,
And life will of Paradise savor,
If you do as near right as you can.

Though foes darkest scandal may speed
And strive with their shrewdness of tact
To injure your fame, never heed,
But justly and honestly act;
And ask of the Ruler of Heaven
To save your fair name as a man,
And all that you ask will be given,
If you do as near right as you can.

Murmuring.

I was tired of washing dishes; I was tired of drudgery. It had always been so, and I was dissatisfied. I never sat down a moment to read, that Jamie didn't want a cake or a piece of paper to scribble on, or a bit of soap to make bubbles. "I'd rather be in prison," I said one day, "than to have my life teased out so," as Jamie knocked my elbow, when I was writing to a friend.

But a morning came when I had one plate less to wash, one chair less to set away by the wall in the dining room; when Jamie's little crib was put away in the garret, and it has never come down since. I had been unusually fretful and discontented with him that damp May morning that he took the croup. Gloomy weather gave me the headache, and I had less patience than at any other time. By-and-by he was singing in another room, "I want to be an angel," and presently rang out that metallic cough. I never heard that hymn since that it don't cut me to the heart, for the croup cough rings out with it. He grew worse towards night, and when my husband came home he went for the doctor. At first he seemed to help him, but it merged into inflammatory croup, and all was soon over.

"I ought to have been called in sooner," said the doctor.

I have a servant to wash the dishes now; and when a visitor comes, I can sit down and entertain her without having to work all the time. There is no little boy worrying me to open his jack-knife, and there are no shavings over the floor. The magazines are not soiled with looking at the pictures, but stand prim and neat on the reading table, just as I leave them.

"Your carpet never looks dirty," say weary-worn mothers to me.

"Oh, no," I mutter to myself, "there are no little boots to dirty it now."

But my face is as weary as theirs—wearied with sitting in my lonesome parlor at twilight; wearied with watching for the little arms that used to twine around my neck, for the curls that brushed against my cheek, for the young laugh which rang out with mine, as we watched the blazing fire, or made rabbits with the shadow on the wall, waiting merrily together for papa coming home. I have the wealth and ease I longed for, but at what a price? And when I see other mothers with grown up sons, driving to town or church, and my hair silvered over with grey, I wish I had murmured less.—*The Appeal.*

THE KIND OF MEN WANTED.—Trusty, industrious men, in all avocations, are in demand at all times. Bear this in mind, young men. Also, while you are at it, bear in mind that business men look with serious distrust upon persons whose habits are bad, and who spend much of their time in idleness. When such a young man, or old one either, for that matter, seeks employment, he will find himself known, and in many cases plainly told why he is not given work. Business men are obliged to keep themselves posted in regard to the characters of persons in their employ. Young men, learn the importance of commencing life correctly.

The Outside Passenger.

Some years ago a young lady, who was going into a northern country, took a seat in a stage coach. For many miles she rode alone; but there was enough to amuse her in the scenery through which she passed, and in the pleasing anticipations that occupied her mind. She had been engaged as a governess for the grandchildren of an earl, and was now traveling to his seat.

At midday the coach stopped at an inn, at which dinner was provided, and she alighted and sat down at the table. An elderly man followed, and sat down also. The young lady rose, rang the bell, and addressing the waiter, said:

"Here is an outside passenger; I can not dine with an outside passenger."

The stranger bowed, saying, "I beg your pardon, madam. I can go into another room," and then immediately retired.

The coach soon afterwards resumed its course, and the passengers in their places. At length the coach stopped at the gate leading to the castle to which the young lady was going; but there was not such prompt attention as she expected. Alleys seemed directed to the outside passenger, who was preparing to dismount. She beckoned, and was answered:

"As soon as we have attended to his lordship, we will come to you."

A few words of explanation ensued, and, to her dismay, she found that the outside passenger, with whom she had thought it beneath her to dine, was not only a nobleman, but in the very nobleman in whose family she hoped to be an inmate. What could she do? How could she bear the interview? She felt really ill, and the apology sent that evening was more than pretence. The venerable peer was a considerate man, and one who knew the way in which the Scripture often speaks of the going down of the sun.

"We must not allow the night to pass thus," said he to the countess; "you must send for her, and we must talk to her before bedtime."

He reasoned with the foolish girl respecting her conduct, insisted on the impropriety of the state of mind that it so plainly evinced, assured her that nothing could induce him to allow his grandchildren to be taught such notions, refused to accept any apology that did not go the length of acknowledging that the thought was wrong, and when the right impression appeared to be produced, gave her his hand.—*Ec.*

Respect for Womanhood.

"But," you say, "Americans are celebrated, the world over, for their respect for women." No, they are not. Americans are famous for their respect for ladies, but not for women. If there comes into the cabin a very sweet and comely young lady, well dressed, there are a dozen persons who are more than willing to offer her a seat. If the car is crowded, and a stately maiden comes in and walks through, a great many men feel called to offer her a seat, because she is a lady. But when a poor Irish woman poorly clad and weary, walks through the car or the cabin, nobody cares for her, because she is only a woman. If it were a lady, a seat would be offered her at once.

Now, I say that you ought to respect womanhood. No matter how a woman looks, she is of the same sex as your mother, as your sister, as your wife, if you are married, and as your daughter, if you have children. I feel to the very depth of my being, that womanhood itself, without regard to the frivolity of some, and without regard to age, is essentially to be respected, and that man is less than a man who does not feel the instinct and the sentiment and does not act according to it. *H. W. Beecher.*

PLODDING.—Professor Huxley, in distributing the prizes at the Charing Cross Medical College, qualified his approval of the prize system in these words: "The successful men in this world are not those who went off at a hard gallop, but, if he might use racing phraseology, those who would 'stay.' It often happened that those whose early career was slower and quieter than those of others exhibited a greater amount of wind and tougher staying power and came in at the winning point at last." He urged upon the audience the importance of plodding industry, which was often of more service than brilliancy or talent, and of using their Pegasus as a plow horse, instead of permitting it to soar aloft.

Most of the shadows that cross our path through life are caused by standing in our own light.

The First Grapevine.

A GRECIAN LEGEND.

When Bacchus was a boy, he journeyed through Hellas, to go to Naxia; and as the way was very long, he grew tired, and sat down upon a stone to rest. As he sat there with his eyes upon the ground, he saw a little plant springing up between his feet, and was so much pleased with it, that he determined to take it with him, and plant it in Naxia. He took it up and carried it away with him; but as the sun was very hot, he feared it might wither before he reached his destination. He found a bird's skeleton, into which he thrust the plant, and went on. But in his hand the plant sprouted so fast that it started out of the bones above and below. This gave him fresh fear of its withering, and he cast about for a remedy. He found a lion's bone, which was thicker than the bird's skeleton, and he stuck the skeleton, with the plant in it, into the bone of the lion. Ere long, however, the plant grew out of the lion's bone likewise. Then we found the bone of an ass, larger still than that of the lion; so he put the lion's bone, containing the bird's skeleton and the plant, into the ass's bone, and thus he made his way to Naxia. When about to set the plant he found that the roots had entwined themselves around the bird's skeleton and the lion's bone, and the ass's bone; and as he could not take it out without damaging the roots, he planted it as it was, and it came up speedily, and bore, to his great joy, the most delicious grapes, from which he made the first wine, and gave it to men to drink. But behold a miracle! When men drank of it, they first sang like birds, next, after drinking a little more, they became vigorous and gallant like lions, but when they drank more still, they began to behave like asses.

How to be Polite.

Do not try too hard to be polite.

Never overwhelm your friends by begging them to make themselves at home or they will soon wish they were there. Show by your actions rather than your words that you are glad to see them.

Have enough regard for yourself to treat your greatest enemy with quiet politeness. All petty slights are merely meannesses and hurt yourself more than any one else.

Do not talk about yourself for your family to the exclusion of other topics. What if you are clever, and a little more so than other people, it may be that other folks will think so whatever they ought to do.

It may be interesting to you to talk over your ailments, but very tiresome for others to listen to.

Make people think you consider them clever and agreeable, and they will be pretty apt to have a pleasant impression of yourself.

Treat people just as you would have them treat you.

It is much easier to lose the good opinion of the people than to regain it; and when anyone does not care for the good opinion of others he or she is not worthy of respect.

Do not excuse your house, furniture, or the table you set before your guests. It is fair to suppose their visits are to you and not your surroundings.

The whole machinery of social intercourse is very delicate and intricate, and it is our business to keep all places of possible friction well supplied with the oil of politeness.

Rich Without Money.

Many a man is rich without money. Thousands of men with nothing in their pocket, are rich. A man born with a good sound constitution, a good stomach, a good heart, and good limbs, and a pretty good head-piece, is rich. Good bones are better than gold; tough muscles better than silver; and nerves that flash fire and carry energy to every function, are better than houses or land. It is better than a landed estate to have the right kind of father and mother. Good breeds and bad breeds exist among men as really as among herds and horses. Education may do much to check evil tendencies or develop good ones; but it is a greater thing to inherit the right proportions of faculties to start with. The man is rich who has a good disposition—who is naturally kind, patient, cheerful, hopeful, and who has a flavor of wit and fun in his composition. The hardest thing to get on with in this life, is a man's own self. A cross, selfish fellow—a desponding and complaining fellow—a timid and care-burdened man—these are all born deformed on the inside. Their feet do not limp, but their thoughts do.

Young Folks' Column.

Attention, Boys.

You all go to school, don't you? Some times you have visitors, who drop in for an hour to inspect the school. Sometimes the visitor is a lady—perhaps two or three; did you ever wonder what their eyes discovered, as they looked over the school; and what they thought of you at the same time?

We will mention three items that visitors always notice. First, your face, if it is dirty; and they wonder whose boy you are, and if you are a good student—they don't believe you are, because your face is dirty; if it is clean, they are sure to imagine that you are a good boy and a smart scholar.

Next, your hair, if it stands up in different directions, hanging down over one ear, and snarled up on the other, they are pretty sure to set you down as a dirty boy, and they turn their eyes away as if they did not like to look at you. If your hair is neatly parted and combed smooth, they are sure to say, "what a fine looking boy; he is a little gentleman, I know by his looks."

Again, your finger-nails; if they are black as the stove, and full of dirt; they are sure to be noticed, and you are judged by the appearance your nails and hands present. It is an easy matter to have clean finger-nails, and don't let your visitors ever find your finger disgraced with dirty nails. The first step toward being a gentleman, and a sure method of being respected and beloved, is to be clean. Remember, then, these items, boys, as the advice of your friend.—*Pacific Journal of Health.*

Mary's Task.

"Now, I never shall get done in this world. Never! Just look at all the books! and mother wants me to dust them. O dear! and so many of them!"

The speaker was little Mary Vine. She was a girl of ten years old; quite big enough to be put to so simple a task as dusting the six shelves of books in the book-case.

"Well, why don't you go at it and do it?" said her cousin Sarah, who came into the room just then. "It won't take you any longer than it will me to mend the stockings."

"But there's so many of them," said Mary. "I've counted; and there's one hundred and twenty-five."

"Well, if you'd been dusting them instead of counting them, you might have been half done by this time," and Sarah passed on.

Mary sat before the bookcase, and complained to herself a little more. Then she took down two or three volumes; then she thought what a long time it would take, and what hard work it was; and so the task, which might have been done in one hour, occupied three. Do you think, if Mary goes on as she has begun, she is likely to make a very useful woman?

A True Hero.

A boy about nine years old was bathing one day, when, by some mistake, he got into deep water and began to sink. His elder brother saw him, and ran to save him, but lacking strength or skill he also sunk to the bottom of the river. As the two drowning brothers rose to the surface for the last time, they saw a third brother, the youngest of the family, running down the bank for the purpose of trying to save them. Then it was that the nine-year-old acted the part of a hero. Struggling as he was with death, he gathered all his strength and cried to his brother on shore, "Don't come in or father will lose all his boys at once!"

Noble little fellow! though dying, he forgot himself, and thought only of his father's grief. He was a genuine hero. His brother obeyed his dying command, and was spared to comfort his father when his two dead sons were taken from the river clasped in each other's arms.

A LITTLE girl once remarked to her mamma, on going to bed: "I am not afraid of the dark." "No, of course not," replied her mamma. "I was a little afraid once, when I went into the pantry in the dark to get a tart." "What were you afraid of?" asked her mamma. "I was afraid I could not find the tarts."

If a cause be good, the most violent attacks of its enemies will not injure it so much as an injudicious defence of it by its friends.

The Hop Crop of 1872.

From the *Brewers' Guardian* we gather the following in regard to the present prospect of the hop crop, the probable yield and prices:

"At present we find hops are growing very well, and in many localities the hop plants are far ahead of grass and grain; the extreme dry weather having checked the growth of the latter, while the hops have kept on growing; but we find a general complaint of the yards not looking very promising, and more especially among those that produced the best last season. As regards the future, we are lead to believe that the growth of hops is being abandoned more and more every year, there not being enough new sittings to make up for the decaying old yards. Many of the yards set out last year are plowed up, and those remaining are very poor, owing to the extreme dry weather of last season, and the hard freezing of last winter. The production this season cannot be very large under the most favorable circumstances.

Although hops wintered over very well owing to the early and deep snows, yet we regret being compelled to report present prospect of growing crop not at all flattering. The weather has been cool, which might in part explain backward condition of vine, but we fear many farmers are sadly neglecting their yards. It is now the 1st of June, when we can very confidently expect fine growing weather, and farmers should have their hills dressed and poles set if they expect a crop this year. We must again caution growers that they will surely commit a fatal mistake if they take last year as a precedent, and calculate upon goodness of crop being proportionate to neglect of yard. Hops are irregular and backward, and farmers in waiting until they get entirely through seeding before giving any attention to the growing vine are doing irreparable injury to this important interest. Unless better attention is given to the young crop than farmers seem at present disposed, we fear the crop of 1872 will be a very light and indifferent one.

"No matter how profusely the vines may grow, or how bountifully they may produce, the coming crop must be a small one. The winter has been severe, and many yards have been winter-killed. This is especially the case in Franklin county, where reliable authority claims one-half the hills dead from this cause. The attacks of disease during the past summer left them in a weak condition to withstand our severe winter, and no yards throughout the State have escaped entirely. The low price for several years past has compelled many farmers to abandon their culture; and at no time within our recollection has the acreage been so small, proportionate to the demand. Many new yards have been planted this season, even with a cost of \$5 per bushel for roots, but they can bear no hops till the second year, and not a full crop till the third; so there will be some years before enough can be raised to produce a surplus.

"The old yards now under cultivation are very weak, and produce but few hops; while the growth of runners for the propagation of new yards has been scarcely more than enough to reproduce the old, to say nothing of an increase of acreage.

"Under the most favorable circumstances of weather, there cannot be a large crop this season, and the price must be correspondingly high."

Barley—A New Variety.

We have received from L. B. Hopkins, of Julian City, a letter from which we make the following extract:

EDITORS OF THE PRESS:—With this you will receive a sample of a new and singular variety of barley, grown upon the ranch of James Madison, Esq., two miles from this place. The heads of this barley, when young, are of a dark purple color, and turn light colored as they mature, as you will see by the sample. When threshed the grain is found to be black, and without any hull, as ordinary barley, presenting a grain like rye or wheat. Mr. Madison says it makes the best horse-feed he ever saw, and seems to contain more nutriment than common barley, and is more prolific; and although he has large experience in farming in this and other States, he says he never heard of this variety of barley before he found this, which was purely accidental, some years ago in the State of Nevada; when sitting down at a spring taking a drink, he observed a head of barley of peculiar appearance; he pulled and shelled

out the grains, and finding it an unusual kind, he resolved to preserve the seed, amounting to about a dozen grains, which he planted the next spring; and from the result he sowed this year about half an acre, of which the package herewith is a sample. As this is a matter that may be interesting to agriculturists generally, Mr. M. would like to know if you know anything about this variety, and if so, what?

The barley—if it is a barley—came duly to hand. Its general appearance is more like wheat in a barley head; for it has the long, full beard of the bearded barley, whilst the grain resembles wheat, except in being black on the outside. We have never before seen a sample of black wheat or barley, though the black oat is common. If it should prove more prolific than ordinary barley, we should have no doubt of its value, for a measured bushel must contain far more nutriment than common barley, being entirely free from hull and as clean as wheat. We find no one who knows anything about it.

Deep vs. Shallow Plowing.

Facts are accumulating, going to show that from causes and influences we do not comprehend or understand the plant food in the soil during dry weather, seasons of drouth and while freezing and thawing were going on, had a steady, persistent and unusual tendency toward the surface; and that the tendency was never downward, except during or immediately after a fall of rain, or in very damp and foggy weather. The drouths common and universal in tropical countries are not solely for giving rest to plants, but for a return of the earth's plant food to the surface, from which it has been drawn by the abundant rainfall.

Some weeks ago, I had an opportunity to observe the effects of deep, shallow and no plowing, on the extensive broom-corn farm of Messrs. Bogardus & Johnson of this county. The best broom-corn grew on last year's potato ground, which had not been plowed; the next best on ordinary unplowed corn land, and the poorest on deeply plowed land. However, the proprietors judge it to be good economy to plow, as it is considerably less work—less than the cost of plowing—to cultivate a crop on plowed than on unplowed land.

I met the other day a man of middle age, half nurseryman, half farmer, who does a little of every kind of work, and, as the case often is, observes a great deal. He owns some forty acres of very rich, low-lying land, which had been poorly farmed by tenants for the five or six years previous to his taking personal possession. Adopting the commonly received notion among the progressive farmers of the age and time, he had come to the conclusion that the fault of his tenants had been that they had not plowed deep enough. So, in 1870, he set his boy to work and turned up the soil, six inches deep, nearly ruined his team, and grew ten bushels of corn to the acre. In 1871 he repeated the experiment and grew five. Last spring happening to fall in with Mr. Bogardus, the broom-corn man, a shallow plower and a man of independent thought and action, he was advised to try just as little plowing as possible. So he threw two light furrows together, planted his corn early, tended it carefully, and now he tells me he had, July 4th, corn up to his five feet shoulders, and a promise for September as he had never seen.

I am suggesting to myself whether our plow makers, in their manufacture, have not rather consulted the demand which calls for a deep turning plow that will bury weeds and rubbish out of sight, than for an instrument which shall stir and aerate the soil. It is time for us to note the difference between stirring the soil and leaving it in place, so that the plant food will remain near to the surface where it is needed, and that illogical upheaval, which buries out of reach and out of sight that which the whole force of nature is bringing to the surface.

I have been interested in some recent analyses of the black soils of Russia, which have been made in France. This soil more nearly resembles that of the prairies of Illinois than any I have heard of. In my next letter I shall attempt an account of these experiments, which go to show that the soil of the steppes of Russia holds more plant food in its first six inches than it does in its next eighteen.—B. F. J., in *Country Gentleman*.

DOMESTIC ECONOMY.

Rice—Its History and Value.

The use of rice as a breadstuff is probably coeval with the human race. Like that of the other cereals, it extends beyond the reach of record. Under the name of *oriz* in Arabic, *oriza* in Greek, *oryza* in Latin, in French, *reis* in German, *rice* in English,—it has been known to history for two or three thousand years, being mentioned by Pheophratus 2,200 years ago, and by Horace, Pliny, and Celsus at a later date.

Its native place is probably the steaming river bottoms of India, whence it traveled eastward and northward to China and Japan, and westward to Egypt and to us. When it reached Egypt we know not; early enough, as many think, to give rise to that singular exhortation of the royal preacher of Israel, 2,800 years ago, in which, alluding probably to the mode of sowing rice on the swollen surface of the Nile, he says, "Cast thy bread upon the (face of the) waters: for thou shalt find it after many days," Eccles. xi. 1.

After being introduced into Italy from Greece, as we learn by the form of the name, and being domesticated for centuries in all the southern countries of Europe, it was carried, in the year of 1605, to the then infant colony of Carolina, where it was cultivated to such extent, and brought to so high a degree of perfection, that the rice raised upon the southern seaboard of the American colonies, now the United States, has been ever since known in Europe as Carolina rice.

As an article of food it surpasses in importance every other cereal in present use. Wheat may be more nutritious, rye more hardy, maize spread over a wider range of temperature—but rice feeds the greatest number of human mouths. Among the swarming millions of the tropics, and of China, it occupies the same place as wheat in the warmer parts of the temperate zone, and rye in the colder.

It has been estimated that, if the human race were divided into families according to the predominant use of the several grains, the rice eaters would occupy the first place in number; while wheat and maize would contend for the second, with a fair promise of victory for the maize; and the fourth place would be held by rye, oats, and barley. Indeed, besides being "the staff of life" in the most populous parts of the earth, it is used so extensively among all the other grain eaters of the human race, that it is questionable whether a greater amount of it is not consumed as a breadstuff than of all the other cereals combined.

Among the botanist rice is known by its Latin name, *Oryza*. There is but one species, though there are many varieties; for the wild rice, so called, of the North American ponds and lakes, is not a rice, but a reed—not an *Oryza* but a *Zizania*.

Food chemists tell us that it contains "less of the nutritive principle than wheat." This however, is in some measure compensated by the fact that of all the cereals it is the most compact—a merchantable bushel of maize or Indian corn, being rated at 56 lbs., and wheat at 60 lbs., while rice, which rarely sells by bulk, and therefore has no established standing like the others, seldom weighs less than 65 lbs. to the bushel, and oftentimes more. Its compactness is shown also in its resistance to being crushed, having almost a gravel-like hardness, and also in the fact that skillful boiling will cause it to expand and double, perhaps treble, its former bulk. But, however weighty in the scales, it is exceedingly light upon the stomach.

In general wholesomeness, in delicacy of flavor, and in the variety of uses to which it is applicable, it is probably not surpassed by any other grain. To the strong stomach of the day laborer it is as well suited as the coarse bread of the Indian corn, rye, or oats; while for the delicate appetite of the invalid or for the tender organs of the babe, it is a safe substitute for sago, arrowroot, tapioca, or cassava.—*Food Journal*.

SALAD.—Dr. Kitchiner's recipe for making a salad:—"Boil a couple of eggs for 12 minutes, and put them in a basin of cold water for a few minutes. The yolks must be quite cold and hard, or they will not incorporate with the ingredients. Rub them through a sieve with a wooden spoon, and mix them with a tablespoonful of cream; then add two tablespoonfuls of oil. When these are well mixed, add by degrees a teaspoonful of salt and powdered lump sugar, and the same of made mustard; when these are smoothly united, add very gradually 3 tablespoonfuls of vinegar; rub it with the other ingredients till thoroughly incorporated with them; cut up the white of the egg, and garnish the top of the salad with it. Let the sauce remain at the bottom of the bowl, and do not stir up the salad until it is to be eaten." If to the above be added a teaspoonful of Tarragon vinegar, and a teaspoonful of Eschalot vinegar, a salad will be made to which none will object.

BROILING MEATS.—When meats are broiling on a gridiron over hot coals, the sudden high heat applied scars the outside, which shuts in the juices, and rapid application of heat soon cooks the meat through, if in moderately thin pieces. It is then tender, juicy and palatable. Those who never broil their fresh meat, fish or poultry, do not know the excellencies of a properly cooked dish of animal food.

How to Distinguish Edible Mushrooms.

Every housekeeper who makes use of this delicious esculent, should know how by some test to distinguish the true mushroom from the poisonous species. A writer in the English *Mechanic* gives what he considers an infallible test for so distinguishing the good from the bad.

He remarks, in the first place that the true mushroom is invariably found in rich pastures; and never on or about stumps, or in the woods, and, although a wholesome species sometimes occurs in the latter localities, the writer considers it better to avoid their products. A very good point, in the second place, is the peculiar intense purple brown color of the spore-dust, from which the ripe mushroom derives the same color (almost black) in the gills. To see these spores, it is only necessary to remove the stem from the mushroom, and lay the upper portion with the gills downward, on a sheet of writing paper, when the spores will be deposited, in a dark impalpable powder, in a short time. Several dangerous species, sometimes taken for the true, have the spore amber-brown, or pale amber-brown.

In the true mushroom, again, there is a distinct and perfect collar, quite encircling the stem, a little above the middle, and the edge of the cap overlaps the gills. In some poisonous species this collar is reduced to a mere fringe, and the overlapping margin is absent or reduced to a few white scales. Lastly, the gills never reach to nor touch the stem, there being a space all around the top of the stem, where the gills are free from the stalk.

There are numerous varieties of true mushrooms, all of them equally good for the table. Sometimes the top is white and soft as kid leather; at other times it is dark brown and scaly. Sometimes on being cut or broken, the mushroom changes color to yellow, or even blood-red; at other times, no change whatever takes place. To sum up, it is to be observed that the mushroom always grows in pastures; always has dark, purple-brown spores; always has a perfect encircling collar; and always has gills which do not touch the stem, and has a top with an overlapping edge.

In addition to the method just indicated for testing the genuineness of mushrooms, we are informed that, however much any particular fungus may resemble the eatable mushroom, none are genuine or safe, the skin of which cannot be easily removed. When taken by the thumb and finger at the overlapping edge, this skin will peel upward to the center, all around, leaving only a small portion of the center of the crown to be pared off by the knife.

The "Why" in Vegetable Cookery.

Why should Soda be boiled with greens, cabbages, brocoli and turnip greens?—Because the oil which all these vegetables contain more or less, the soda extracts, and leaves the greens sweet and wholesome; but the water is, after boiling the greens with soda, most unwholesome, perhaps poisonous. A piece of soda, filbert size, is sufficient for a very large saucepan of boiling water. Turnip greens have scarcely any oil in them, but are nevertheless much more wholesome for eating when cooked with a little soda. From the seed of cabbage the colza-oil is manufactured.

WHY SHOULD VEGETABLES BE WASHED IN RATHER WARM WATER FIRST, THEN IN COLD, TO CLEANSE THEM FROM SAND AND INSECTS?—The hot water, which must be hotter than tepid, causes the insects and sand to fall out at once. Insects do not always dislike cold water and salt, but the hot water kills them. It must be understood that only a small handful of greens or one head of cabbage at a time must be washed, and then instantly thrown into the cold water, which crisps and thoroughly cleanses them. Spinach, leeks, celery and seakale, are thus rendered very clean, and, moreover, are very rapidly cleansed. It is worse than useless to attempt to cleanse vegetables in salt and water. The hardness which salt creates in the water prevents all cleansing properties. The salt may kill the insects (it does not always do this,) but they stick on hard and fast; the hot water makes them fall out at once, and the cold water crisps and also blanches them.

WHY SHOULD TURNIPS BE CUT ACROSS THE FIBRE IN RINGS OF LESS THAN HALF AN INCH IN THICKNESS?—For three reasons: first, the turnip need only be peeled very thin, instead of in the usual manner, thickly and wastefully; secondly, by so cutting them the fibres are cut across, so that however old the turnip is, it is never stringy; thirdly, they require only fourteen minutes to boil in plenty of boiling water and salt, and thus the delicate flavor of the turnip is preserved, also they can be more easily mashed. The thinner the circles of turnip are cut, the quicker they cook and the less fibre they will have.—*Mrs. Warren*.

CAUTION.—Housekeepers cannot be too careful in avoiding poisonous articles and mixtures in connection with the culinary art and in other domestic arrangements. Dr. R. Mirus mentions two cases in Jena, and one in Frankfurt, where persons using green glazed paper shades were attacked with symptoms of arsenic poisoning. In no case the symptoms did not cease until the use of the shade was discontinued. The heat of the lamp volatilizing the arsenic renders even the very small quantity present extremely dangerous. The arsenic is used in the Paris green with which lamp shades, wall papers, toys, etc., are so often colored.

STATE UNIVERSITY.—At an adjourned meeting of the Board of Regents of the University, held on Tuesday last, Prof. D. C. Gilman, of Yale College, and Pres. of the Sheffield Scientific School, was elected to the Presidency of the State University. We congratulate the people of California on this election.

Although five blank votes were cast by voters who preferred some one who might already be a citizen of our State, we have heard the positive assertion that three of the five assert they will give the president elect their hearty support, as no doubt will the two others unheard from—judging from their natural geniality and good sense. The able and worthy member of the Board, who had been urged as a candidate by his friends declined with the positive assertion that he had not sought an election. We believe the result is a fortunate one for the University, and the action of the Regents in this instance will be glorified with grand results that will certify to their wisdom generations to come. Prof. G. will find a rich field and a fine opportunity for his noble labors in the highly important position to which he has been elected. With fair management, our University has a bright future, liberally supported as it may be by the most intelligent and progressive community in the Union.

BAY DISTRICT HORTICULTURAL SOCIETY.—The next annual exhibition of this Society will be open to the public in their new and splendid hall, corner of Post and Stockton streets, on Thursday, the 22d of August, and will continue for fifteen days.

By reference to the advertisement of this Society in another column it will be observed that over \$2,000 are offered in premiums to be awarded for flowers, fruits, etc. It will doubtless excel any previous exhibition.

AN ILLINOIS PLOW-MAN.—Mr. G. W. Vinton, of the firm of Deere & Co., the celebrated plow manufacturers of Moline, Illinois, is now in San Francisco looking after the interests of his business and enjoying himself generally. The Moline plows have long been extensively used on this Coast, and so far as we are informed, with satisfaction. Mr. Vinton represents a progressive firm who are alive to the importance of this prospectively great field of agriculture. He will make ample and liberal arrangements to secure a large proportion of the trade of this Coast for his noted manufactures.

TAKING ACTION.—The Sacramento Farmers' Club endorsed the resolution of the Napa Club to organize a State club for united action to protect the interest of farmers from rings and monopolies in this State, and have recommended the evening of the 25th of September as the time of meeting, at Sacramento during the State Fair session. Other clubs have been addressed and solicited to take action in the matter, and we hope the result will be a unanimous movement.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, July 25, 1872.	
IRON.—	
Scotch Pig Iron, per ton.....	\$60 00 @ 65 00
White Pig, per ton.....	50 00 @ 55 00
Reinforced Bar, good assortment, per lb.....	04 1/2 @ —
Reinforced Bar, good assortment, per lb.....	05 00 @ —
Boiler, No. 1 to 4.....	05 1/2 @ —
Plate, No. 5 to 9.....	06 00 @ —
Sheet, No. 10 to 13.....	08 00 @ —
Sheet, No. 14 to 20.....	09 00 @ —
Sheet, No. 21 to 27.....	09 00 @ —
Horse Shoes.....	7 50 @ —
Nail Rod.....	7 50 @ —
Roller Iron.....	8 00 @ —
Other Irons for Blacksmiths, Miners, etc.....	5 @ 6
COPPER.—	
Sheathing, Yellow.....	40 @ 45
Sheathing, Old Yellow.....	30 @ 35
Composition Nails.....	24 @ 25
Composition Bolts.....	24 @ 30
TIN PLATES.—	
Plates, Charcoal, 1X per box.....	19 00 @ 19 30
Plates, 1C Charcoal.....	17 00 @ 17 30
Roofing Plates.....	16 00 @ 16 30
Banca Tin, Slabs, per lb.....	45 @ 50
STEEL.—English Cast, per lb.....	15 @ 16
Drill.....	15 @ 16
Flat Bar.....	17 @ 18
Plough Points.....	3 75 @ 3 75
Russia (for mould boards).....	12 1/2 @ —
QUICKSILVER.—per lb.....	— @ 65
LEAD.—Pig, per lb.....	— @ 10
Sheet.....	— @ 10
Pipe.....	— @ 10
Bar.....	— @ 10
ZINC.—Sheet, per lb.....	— @ 11
BORAX.—Refined.....	— @ 28
Borax, crude.....	— @ 5

Our Printed Mail List.

Subscribers will notice that the figures found on the right of the pasted slips, represent the date to which they have paid. For instance, 21st 70 shows that our patron has paid his subscription up to the 21st of September, 1872; 4th 72, that he has paid to the 4th of January, 1873; 4th 73, to the 4th of July, 1873. The inverted letters (1872, 1873, etc.), occasionally used are marks of reference, simply for the convenience of the publishers. If errors in the names or accounts of subscribers occur at any time an early notice will secure their immediate correction. Please notify us if you are not properly credited within two weeks after paying.

Postmasters, please send corrections also.

Monthly Diagram of the S. F. Wheat Market Rates.*

FROM JULY 1 TO JULY 31, 1872.

DAYS OF SALE.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
WHEAT	1.90	1.85	1.80	1.77 1/2	1.72 1/2	1.62 1/2	1.60	1.58 1/2	1.57 1/2	1.55																					
RANGE OF PRICES	1.90	1.85	1.80	1.77 1/2	1.72 1/2	1.62 1/2	1.60	1.58 1/2	1.57 1/2	1.55																					

*—The scale represents the highest sales reported on each of the above days.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Aug. 1.

FLOUR—The interior and local demand is reported good, with a fair inquiry for export. We quote prices as follows:

Superfine, \$4.25@4.50; extra, in sacks, of 196 lbs., \$5.75@5.85; Oregon brands, \$5.25 @ \$5.87 1/2, in sacks of 196 lbs.

WHEAT—The market has been active at unchanged rates since our last review. Receipts are free. Three cargoes of \$7,000 centals have been cleared this week from this port. Sales aggregate 50,000 sacks ordinary to choice, at \$1.50@1.60. The range for shipping grades is \$1.50@1.55, and choice milling, \$1.57 1/2@1.60 per 100 lbs.

The latest Liverpool market quotations come through at 11s. 9d. @ 11s. 10d. per cental.

BARLEY—Market firm. Sales embrace 10,000 sacks, at \$1.10@1.15 for new. The range at close is, new bay 1.05@1.15; old brewing \$1.00@1.70.

OATS—Market is steady. New are quotable at \$1.70@1.85, and old are scarce and jobbing at \$2 per cental.

CORN—Is quotable at \$1.65@1.75, jobbing at \$1.75@1.90 per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs.

RYE—Is quiet at \$1.75@1.80 per 100 lbs.

STRAW—Quotable at \$6@7.25 per ton for cargo lots.

BRAN—Is selling at \$20 per ton from the mill.

MIDDINGS—For feed, are \$30.00 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been pretty free during the week. Quotable at close at \$8@16.00 per ton.

HONEY—In the comb is selling at 10@20; do. strained, 12@15c. per lb.

POTATOES—There has been a pretty fair demand this week, and very free supplies especially of sweet. Sales of Red at \$1.25@1.50 per 100 lbs.; Carolina, \$3.00 per 100 lbs.

WOOL—Is still very quiet and prices are nominal. Sales for the week were about 50,000 lbs., at 20@30c. for burry; and 30@35c. for choice clean spring. The range of prices is nominally 30@35c. for clean, and 20@30c. for burry. Oregon was sold for 35@40c. Stocks here amounted to almost 3,000,000 lbs.

TALLOW—Good quality of Cal. 8c. @ 8 1/2. SEEDS—Flax 3c.; Canary, 4 1/2@5 1/2c. Alfalfa, 10@20; mustard, 2 1/2@5c. per lb.

PROVISIONS—California Bacon 12 1/2@14c. per lb.; Oregon, 13 1/2@14 1/2c. Eastern do. 10@12 for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 13@14; Eastern do. 16@18c; California Smoked Beef, 13 1/2@14c. per lb.

BEANS—The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25; large \$3.75; Bayo, 5.25@5.50.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 6c. Pecan, 25c. @ lb.; Hickory, 12c; Brazil, 15c.; Chili Walnuts, 15c.; French Almonds, 25 @ 30c.; Princess Almonds, 35@40c.; Cocoanuts, \$7.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7@8c. @ lb. do. 2d quality 6@7c. @ lb.; do. 3d do. 3@5c.

VEAL—Quotable at 8@11c.

MUTTON—Quiet at 6c. @ lb.

LAMB—8@9c.

PORK—Undressed grain-fed is quotable at 5 1/2@6 1/2c. dressed, grain-fed, 8@9c. per lb.

Roasting pigs are in good demand at \$1.75@2.00 each.

POULTRY—Live Turkeys, 25c. @ lb.; dressed, 27c. per lb.; Hens \$9.00@9.50; Roosters, \$6.00@8.00 per dozen; Spring Chickens, \$4.00@4.50; Ducks, tame, \$7.00@8.00 per doz.; Geese, \$12@15c. @ doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 25@30c., with a few choice lots at 32 1/2; New firkin is quotable at 25@27 1/2c., pickled, old 18@20c.; Eastern firkin 18@27 1/2c.

CHEESE—New California, 10@14c.; Eastern is jobbing at 13@14c. @ lb.

Eggs—California fresh, are 41@42 1/2c., jobbing at 45c. per doz.

LARD—California 12@13; Oregon, none in market. Eastern in cases 14@14 1/2c.; do in tcs. 11 1/2@12c.; in kegs, 12@13c. per lb.

DRIED FRUIT
Apples, per lb..... 2 1/2 @ 30 @ 25
Pears, do..... 2 1/2 @ 30 @ 25
Peaches, do..... 10 @ 11 Black Figs, do..... 6 @ 8
Apricots, do..... 5 @ 10 White, do..... 15 @ 20
Plums, do..... 5 @ 10

VEGETABLES.

Cabbage, per lb.....	1 1/2 @ 2
Garlic, per lb.....	1 1/2 @ 2
Rhubarb, per lb.....	1 @ 1
Green Peas.....	2 1/2 @ 4
Sweet Peas.....	2 1/2 @ 4
Green Corn, per doz.....	6 @ 20
Pears, Blooded, do.....	1 @ 25
Marrowfat Squash.....	@ —
per ton.....	@ —

FRUIT MARKET.

(CORRECTED WEEKLY BY HOWE AND BALL, 408 DAVIS ST.)	
Tab's Oranges, M.....	@ 35
Limes, M.....	12 1/2 @ 15
Au'n Lemons, M.....	@ —
Seville do, M.....	@ 18
Bananas, per bunch.....	2 @ 00
Pineapples, per doz.....	6 @ 00
Apples, Eat, b, x.....	25 @ 50
Apples, Cook, b, x.....	25 @ 50
Pears, Bart, b, x.....	25 @ 50
Pears, Blooded, do.....	1 @ 25
Pears, Cooking.....	@ 10
Peaches, Choice.....	@ 15
Peaches, Comm.....	50 @ 75

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—Prices are as follows: Hand-sewed Burlap sacks 22x36, are 16@16 1/2c. Sales of 100,000 wheat sacks from Oakland Factory at 14 1/2c. Flour sacks 9 1/2@9 3/4c. for qrs. and 13 1/2@14 1/2c. for hls. Standard Gunnies are jobbing at 20@21c.; Wool 75@80c. Barley sacks 17 1/2@18; price of 40-inch Burlap, is 12 1/2c.

BUILDING AND FENCING MATERIALS—The demand for lumber in the interior is light, and the export trade is light also.

Dealers pay for cargoes of Oregon as follows: Although there is some disagreement among dealers about the advance in prices on the 1st of September, prices are pretty soon to go up. Rough \$16@17; do surfaced at \$26@28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32 1/2; refuse do. \$21 1/2. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @2.75; Shingles \$2.50@2.75. Sugar Pine \$35 @45; Cedar \$27 1/2@37 1/2. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices is continued by the Lumber Dealers' Exchange.

Puget Sound Pine—	
Rough, per M.....	\$22 50
Fencing and Stepping, per M.....	35 00
Fencing, second quality, per M.....	25 00
Laths, per M.....	3 00
Fencing, per lineal foot.....	3 1/2 c
Redwood—	
Rough, per M.....	22 50
Rough refuse, per M.....	17 00
Rough Pickets, per M.....	18 00
Rough Pickets, pointed, per M.....	20 00
Fancy Pickets, per M.....	30 00
Siding, per M.....	25 00
Longued and Grooved, surfaced, per M.....	37 50
do do refuse per M.....	25 00
Half-inch surfaced, per M.....	35 00
Rustic per M.....	40 00
Batten per lineal foot.....	3 c
Shingles per M.....	3 00

Sugar Pine is jobbing at \$55 for clear and \$45 for second quality.

COFFEE—Costa Rica 20 1/2c; Guatemala 18c. Java 26c; Manila, 19 1/2; Rio 19 1/2@20; Ground Coffee in cases 30c; Chicory, 12 1/2.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 @ doz.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 @ doz.; Mace \$1.50 @ lb.; Ginger 15c @ lb.

FISH—We quote Pacific Dry Cod in bundles at 4 1/2c. @ 5 1/2c. Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2.50 for 2 1/2-lb. cans, \$2.25 for 2-lb. cans, and \$1.75 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$8.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.15; do No. 2, \$1.50@1.62 1/2.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 @ ream.

PAINTS—Standard White Lead 12 1/2c; Whitening, 2 1/2c.; Chalk 2 1/2c.; Paris White 3c.; Ochre, 3 1/2c.; Venetian Red, 3c.; Red lead, 11 1/2c.; Litharge, 11c. @ lb.

ROPE—Sales of China No. 1 at 7 1/2c. and No. 2 at 6 1/2c. @ lb.; Siam, quotable at 5 1/2 @ 6 1/2c. in mats; Carolina Table, 10@11; Hawaiian, 9@10c. per lb.

SUGAR—We quote Cal. Cube at 13 1/2c; Circle A Crushed, 13c. and Granulated 12 1/2c; Golden C. 11c; extra Golden 11 1/2c.; Hawaiian 8@11c. as extremes @ lb.

SYRUP—Prices may be given as follows: 57 1/2c in bbls, 60 in hf bbls, and 65c in kegs.

SALT—California Bay salts at \$6@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 @ ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c. and Castile, 13@13 1/2c. @ lb.

TEA—We quote as follows for bulk descriptions: Amoy's—Common to fair, 30@45c.; superior to fine, 55@65c.; extra fine, 75@85c. Foochoos—Common to fair, 25@45c.; superior to fine, 50@60c.; extra fine, 75c. Soucheong and Congon—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Japans—Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55@75c. @ lb.

San Francisco Retail Market Rates.

THURSDAY NOON, July 25, 1872.

MISCELLANEOUS.

Batter, Cal fr. do.....	25 @ 35
do Oregon, do.....	25 @ 35
Honey, per lb.....	25 @ 30
Cheese, per doz.....	20 @ 25
Eggs, per doz.....	45 @ 50
Lard, per lb.....	18 @ 20
Sugar, cr., 7 lb. do.....	9 @ 10
Brown, do, per lb.....	9 @ 10
Beet, do.....	12 @ 15
Sugar, Map, do.....	25 @ 30
Plums, dried, do.....	20 @ 30
Peaches, dried, do.....	20 @ 30
Wool Sacks, new.....	82 1/2 @ 85
Second-hand do.....	82 1/2 @ 85
Wheat, 22x36.....	18 @ 20

PRODUCE, ETC.

Flour, ex, per bbl.....	6 @ 25
Superfine, do.....	6 @ 25
Coru Meal, 100 lb. do.....	30 @ 35
Wheat, per 100 lbs.....	20 @ 25
Oats, per 100 lbs.....	15 @ 20

FRUITS, VEGETABLES, ETC.

Apricots, do.....	16 @ 18
Pine Apples, do.....	5 @ 10
Bananas, per bunch.....	5 @ 10
Cantaloupes, do.....	25 @ 30
Watermelons.....	25 @ 30
Cal. Walnuts, do.....	1 @ 10
Cranberries, per g.....	1 @ 10
Strawberries, do.....	10 @ 15
Gooseberries.....	8 @ 10
Cherries, do.....	15 @ 20
Oranges, per 100.....	20 @ 25
Lemons, per 100.....	5 @ 10
Limes, per 100.....	2 @ 00
Figs, fresh, do.....	12 @ 15
Asparagus, wh.....	7 @ 10
Artichokes, doz.....	50 @ 60
Raspberries, do.....	10 @ 12
Beets, do.....	10 @ 12
Potatoes, New.....	14 @ 25
Potatoes, sweet.....	2 @ 00
Broccoli, per doz.....	1 @ 50
Carrots, per doz.....	1 @ 50
Cabbage, per doz.....	1 @ 50
Carrots, per doz.....	1 @ 50

POULTRY, GAME, FISH, MEATS, ETC.

POULTRY, GAME, FISH, MEATS, ETC.						
Chickens, apico	50	@	Choice D'field	—	@	25
Turkeys, do	—	@	Whittaker's	—	@	25
Ducks, wild, p	—	@	Johnson's Or.	—	@	25
Tame, do	1	50	Flourish	15	@	18
Teal, do doz.	—	@	Salmon, D. B.	—	@	18
Geese, wild, pair	—	@	Smoked, new	12	@	15
Tame, pair. 2	—	@	Pickled, do	6	@	—
Hens, each	75	@	Rock Cod, do	10	@	—
Snipe, do	—	@	Perch, water	—	@	12
English, do	—	@	Fresh water	—	@	15
Quails, do doz	—	@	Lake Big Trout	—	@	25
Pigeons, dom. do	30	@	Smelts, large	15	@	—
Wild, do doz	2	00	Small do	8	@	12
Hares, each	—	@	Small Smelts	—	@	—
Rabbits, tame	75	@	Soles	30	@	—
Wild, do doz	2	10	Herring, fresh	—	@	—
Beef, tend, do	18	@	Sm'kd, per 100	—	@	100
Corned, do	10	@	Tomcod, do	25	@	—
Smoked, do	18	@	Terrapin, do doz	—	@	90
Pork, rib, etc., do	10	@	Marbled, do	—	@	—
Urbos, do	15	@	Fresh, do	—	@	—
Veal, do	15	@	Sea Bass, do	—	@	—
Cutlet, do	—	@	Halibut	—	@	75
Mutton chops	12	@	Sturgeon, do	4	@	5
Leg, do	15	@	Crabs, do doz	—	@	25
Lamb, do	18	@	Chesp, do doz	50	@	00
Tongues, beef, ea	75	@	Turbot	30	@	35
Tongues, pig, ea	15	@	Crabs, do doz	1	@	00
Bacon, Cal, do	18	@	Soft Shell	—	@	50
Oregon, do	16	@	—	—	@	—
Hams, Cal, do	18	@	Prawns	—	@	—
Hams, Cross's o	—	@	Sardines	8	@	—
* Per lb.		† Per dozen.	† Per gallon.			

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

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PHILADELPHIA AGENCY.—W. H. Daffin, formerly of San Francisco, is our correspondent and business agent, Frankford, Philadelphia, Pa.

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LIST OF PREMIUMS ON WINE, BRANDY, GRAPES, ETC.,

As agreed upon by the Board of Directors of the California Vine-Growers and Wine and Brandy Association.

Brandy.
Best grape brandy, vintage 1871..... \$25
Best grape brandy, vintage 1870..... 25
Best grape brandy, vintage 1869..... 25
Best grape brandy, vintage 1868..... 25
Best grape brandy, vintage 1867 or older..... Diploma.

Dry Wines.
Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Sweet Wines.
Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Special Wines.
Best California port wine, vintage 1871..... \$25
Best California port wine, vintage 1870..... 25
Best Cal. port wine, vintage 1869 or older..... Diploma.
Best California sherry wine, vintage 1871..... 25
Best California sherry wine, vintage 1870..... 25
Best Cal. sherry wine, vintage 1869, or older..... Diploma.
Best California sparkling wine, vintage 1871..... 25
Best California sparkling wine, vintage 1870..... 25
Best California sparkling wine, vintage 1869 or older..... Diploma.
Best California Angelica wine, vintage 1871..... 25
Best California Angelica wine, vintage 1870..... 25
Best California Angelica wine, vintage 1869 or older..... Diploma.

Miscellaneous.
Best samples of grape syrup, not less than one gallon..... \$20
Best sample of grape sugar, not less than five pounds..... 20
Best twenty-five pounds of raisins..... 50
Best still..... 50
Best grape crusher and separator..... 50
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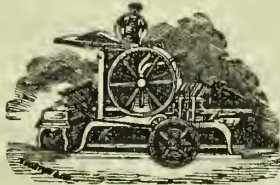
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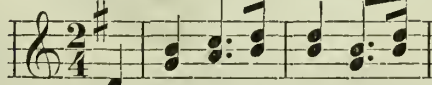
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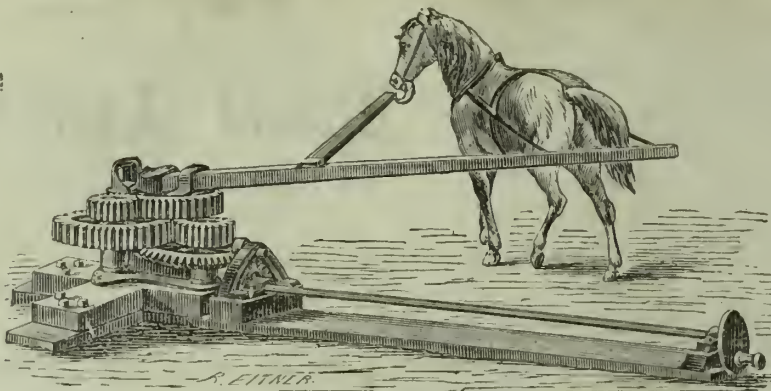
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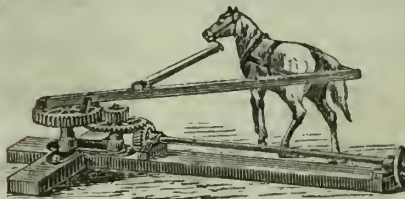
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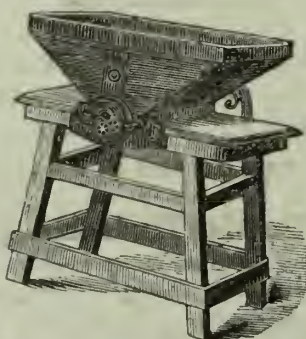
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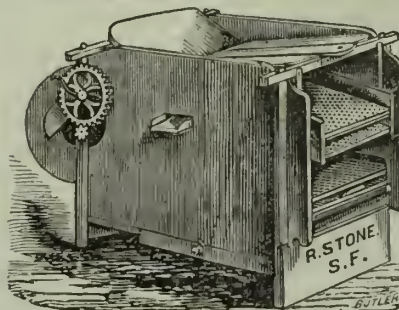
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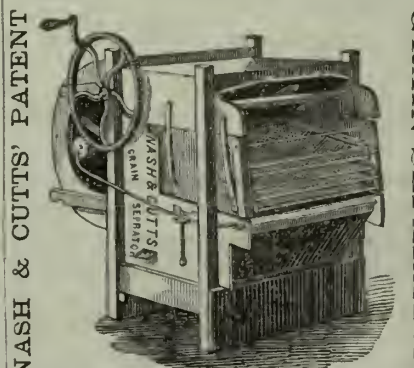
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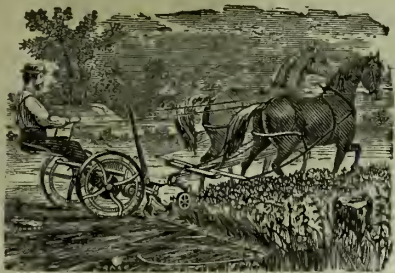
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5th.—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

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We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

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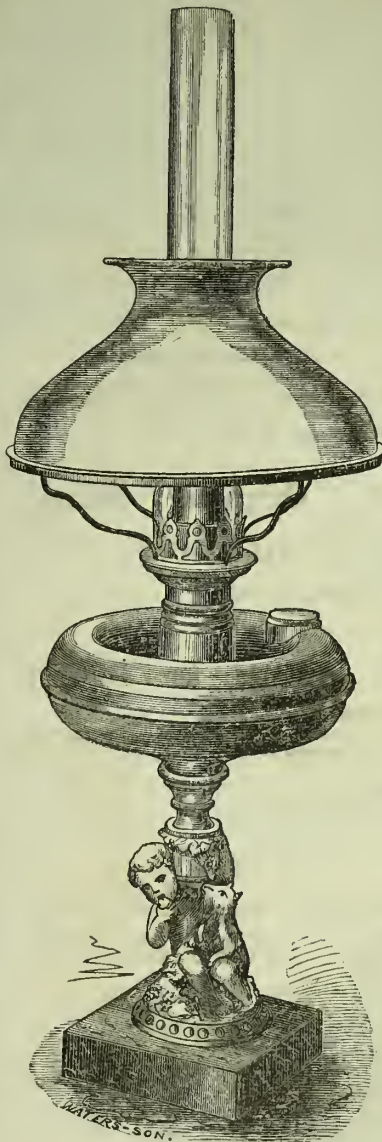
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A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

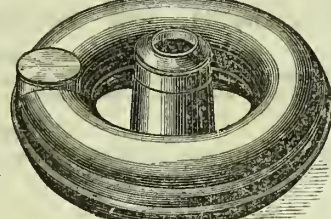
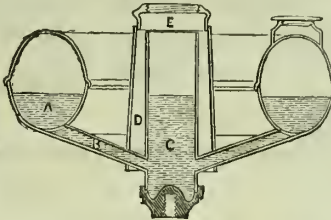
2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

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This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

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PRICE \$40.

This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (alike on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

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Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood
FOR THE SPECIAL PURPOSE OF MAKING

LARGE
WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.
1,000 to 2,000 gallons, bound with 5 hoops 1 1/2 x 3/4 and 1 hoop 1 3/4 x 3-16.
2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2 hoop 2 x 3-16.
4,500 to 7,500 gallons, bound with 5 hoops 2 1/2 x 1/2 and 2 hoop 2 1/2 x 3-16.
7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 1/2 and 2 hoops 2 1/2 x 3-16.
15,000 to 20,000 gallons, bound with 8 hoops 3 x 1/2 and 3 hoops 3 x 3-16.

PRICE, - From 1 1-4 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.
ALL WINE TANKS made of SPLIT lumber 2 1/2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.
REDWOOD CASKS (split lumber,) with oak middle piece and gate, from 7 to 9 c. per gallon.
OAK CASKS (full stock,) from 12 1/2 to 15 c. per gallon. Send for Price List.
For further particulars address.

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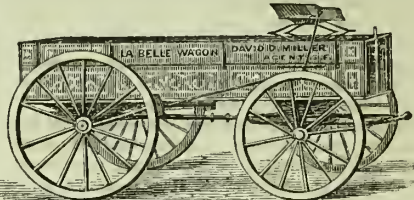
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THIMBLE SKEIN,
HEADER AND
SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

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Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.
The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

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Thimble-Skein Farm Wagons.



JUST RECEIVED FROM
THE CELEBRATED ZUFELT & CO.,
Sheboygan Falls, Wis., established in 1850. Also the
Celebrated La Belle Wagon,
Manufactured by FARNSWORTH, WOODWARD & CO.,
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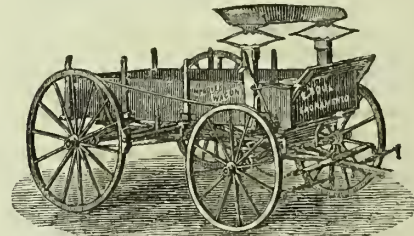
PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.
3 in Thimble Skein. \$120 3 in Running Gear. \$90
3 1/2 " " " 125 3 1/2 " " " 95
3 3/4 " " " 130 3 3/4 " " " 100
4 " " " 140 4 " " " 110

Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

Above prices include Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

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FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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This New Gas Lamp takes the place of the Candle, the Coal Oil Lamp and Coal Gas, and costs only

One-Half Cent per Hour.

Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. No CHIMNEY is REQUIRED.

It makes its own gas as fast as it is required, and when the light is blown out the gas ceases to be generated.

One Burner is Equal to Six Candles.

This Lamp burns Refined Petroleum, Gasoline, Danforth's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit.

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SEWING MACHINES.

Something New Regarding Them—The Extension of Patents—A New Feature in the Trade—The Clearance Sale of the Wilcox & Gibbs Sewing Machine Company—Its Effect Upon the Trade—The Advantages to the Poorer Classes.

Almost daily something new is coming to light in the great Sewing Machine interest, which has assumed such huge proportions during the past few years, employing millions of capital, and affording a means of sustenance to thousands of both sexes. Just now the interest of the public, in connection with the Sewing Machine trade, centres upon Congress, where an effort is making to secure the extension of an important patent, in which all Sewing Machine companies have a common interest. What the result will be it is impossible to conjecture; but even if it should be adverse to the Sewing Machine interest, we surmise that the doors of the trade will hardly be thrown open to piratical competition, as there are doubtless, behind this patent, others, from which Sewing Machine men can defend their interests. Whatever may be the result, the several companies are fully aware of the importance of activity, and consequently there was never a time when the stir in the Sewing Machine world was so unceasing, and the parties interested more earnest in their efforts to advance the material interests of their respective machines.

A significant, and by the way, a somewhat novel feature of the trade, was a great "clearing out" sale of the Wilcox & Gibbs Sewing Machine Company, the 17th and 18th instant. This Company had since January 1, accumulated some twelve hundred machines, of the double thread varieties, which had been taken in as part payment for their own machines. These they determined to dispose of at public instead of private sale, as has been their custom heretofore. As might have been expected, the idea created a sensation in the Sewing Machine world, and while the Wilcox & Gibbs Company doubtless intended simply to dispose of an accumulation which had become somewhat cumbersome, the effects reach much farther and cannot fail to have an important and beneficial influence upon the business of the Company.

The Wilcox & Gibbs Company could not possibly have hit upon a happier method of bringing their claim to superiority before the public than by offering at public sale the result of their active competition with the rival companies. In fact, behind this systematic clearing out of second-hand machines there is a lesson which can not but be apparent even to a casual observer, and which the public would do well to regard. Here are twelve hundred machines of every two-thread variety, taken out during a period of three months to make way for the Wilcox & Gibbs Machine. And why! Because, according to the verdict of the former owners, the latter machine is preferable. This verdict must be regarded as an honest one, for it is hardly to be expected that a person who has invested in so costly a necessity as a sewing machine will give it up at a sacrifice of from one-half to three-quarters of its original cost, and that too perhaps, within a few months after its purchase, without first thoroughly testing its merits as compared with those of its successor; and the fact that so many are taken out after such a test is significant.

The effect upon the trade in general of a sale of such proportions, throwing upon the market many machines, not a few of them but a short time out of the shops of their respective manufacturers, all in good order, and all the trophies of a machine of an entirely different principle, won by the closest comparison of respective merit, can hardly be estimated. The Wilcox & Gibbs Company have attained their object, and disposed of their accumulation of second-hand machines, but in so doing they have produced an effect such as is but seldom the result of transactions of this character by bringing their own machine and its peculiar features into direct and public contrast with those of their competitors. The companies whose machines have been thus unceremoniously disposed of, cannot but feel that they have been somewhat thrown in the shade by the efforts of their vigorous rival, and that the moral effect of the transaction is adverse to their claims. It is possible that they may adopt a similar line of policy, but the Wilcox & Gibbs Company have the advantage of being the first in this peculiar field; and if the claim urged by them—that their machines are not taken up to any great extent—be true, such a procedure would only redound to their further benefit, as tending to show the great disproportion existing between the number of machines of other companies taken up by them, and the number of their machines taken up by other companies.

It strikes us that the machine trade is in, so to speak, a transition state—on the verge of a new era, in which many preconceived opinions will be discarded, and in which many conditions which have heretofore been insisted on, as not only important, but imperative, will be cast aside as hindrances—the result of prejudices which are fast being dispelled before the light of knowledge; and in this view the facts above enumerated assume a peculiar significance, and will bear a close investigation to discover the causes of which they are the legitimate effects.—*N. Y. Commercial, April 20th.*

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Send Address to

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SAN FRANCISCO.

The Hall is well arranged and will hold over 8,000 people.

The exhibition will open on THURSDAY, August 22d, and continue for fifteen days.

The members of the Horticultural Society are determined to make this the grandest and most attractive exhibition ever held on this coast, and will introduce many new and pleasing features.

Over two thousand dollars in cash premiums will be awarded for collections of plants, flowers, fruits and vegetables.

Application for space should be made early to the undersigned, at his office or by mail.

Articles competing for premiums must be entered on or before Tuesday, August 20th, and delivered before 12 o'clock on Thursday, August 22d.

For Premium List, Rules and Regulations, and for all particulars, apply to

F. A. MILLER, Secretary,

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FULLED RAWHIDE BELTING AND LACING,

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ALL GRADES.

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Farming

FOR THE HARVEST OF '72, INCLUDING HOADLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers Kirby's Mowers and Reapers, Header-Wagons, Studebaker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Scythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

TREADWELL & CO.,

Market, cor. Fremont St., San Francisco.

v3-16p



WILCOX & GIBBS
IMPROVED NOISELESS
Family Sewing Machine
IS THE BEST IN THE MARKET.

It is the Most Simple,
Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine
Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Wilcox & Gibbs
Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium
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Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

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WILCOX'S
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With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most ECONOMICAL of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco.

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PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, AUGUST 10, 1872.

[Number 6.]

The Diamond—No. 1.

The recent discovery of diamonds on this coast, and the consequent excitement with reference thereto, renders any information with regard to these gems of particular interest just at this time. With this view we propose to give several articles which will embrace all attainable information with regard to the circumstances under which they are found, the mode of searching for them, the way in which they are placed upon the market, the manner in which they are cut, how they are valued, etc.

How the Diamond is Cut.

Passing over, for the present, the mechanical appliances by which the work is done, we will state that diamonds are cut in four different shapes: the brilliant, the rose, the table and the brilliolette. The two latter have pretty much entirely gone out of fashion, and need not be described here. The rose is flat on the under surface, and cut into innumerable facets on the upper. This form is also rarely seen in this country. The form most commonly employed here is the brilliolette or brilliant. Ninety-nine out of every hundred diamonds sold in the United States have that shape.

The form of these gems may be fully understood by referring to Figs. 1, 2, and 3 which are accurate to size and form of the famous "Koh-i-noor," now belonging to the British Government. Fig. 1 represents the front or top view; Fig. 2 the back or bottom view; and Fig. 3 a side view, showing the thickness or depth of the jewel.

The proper shape of a brilliant should be nearly that of the small figures here shown, illustrating the various sizes of diamonds, from 1 carat to 13 in size; the corners should be a little more rounded than shown, but not so much as the Koh-i-noor. If Figs. 1 and 2 of that gem are carefully examined it will be seen that the outline is not regular; it presents neither a perfect circle or oval, nor are the corners uniformly rounded off as shown in the smaller engravings of the various carats. This irregularity is what is referred to by experts when they speak of that famous gem having been spoiled in the cutting.

Fixed laws govern the proportions of the brilliant. Thus a diamond of 1 carat should have its diameter, as shown, of about $\frac{1}{4}$ of an inch, with a depth of rather over $\frac{1}{8}$ inch, shown by the straight line underneath. The facet in the center of the top should also have its due proportion to the full diameter of the gem, as also should the center facet on the bottom, which is reduced, in the single carat to almost a point. These bottom facets are represented by the small dots, found under each of the graded sizes, as shown from 1 to 13.

These relative proportions may be more fully and distinctly studied by referring to Fig. 3 where the top facet, the greatest diameter (or "girdle," as it is technically known) and the bottom facet are distinctly shown.

If the diamond will not admit of bringing out the perfect proportions, any variation therefrom detracts from the value of the gem. Jewelers often try to conceal the thickness of the gem by the setting. Any such attempt is a cheat.

How the Diamond is Valued.

The value of the diamond depends almost entirely on the circumstances connected with their appearance, such as beauty, uniformity, the play, lustre, vivacity of colors, etc.; also on the perfection of the cut, polish, etc. A

perfectly limpid diamond is worth about twice as much as one which is even very slightly tinted; while those which approach to opaqueness have no value for brilliants, and are used only in the mechanical arts. Their transparency and clearness are divided into three degrees, as follows: Of the first water—those which are free from the slightest fault; the second water—which though clear and limpid, are marred by dark spots or clouds; of the third water—those which have a slight tint of any color, or which though limpid, have material faults.

In order to determine readily the character of a diamond, it is well to breath on it, whereby they lose for a moment their lustre, when the eye can more readily distinguish their faults.

The price per carat advances in rapid ratio as the diamond increases in size. A brilliant of the first water which weighs one carat is worth, say \$125; one weighing two carats is worth \$500; one weighing three carats is worth \$1,125. The calculation of the value is made by first multiplying the weight into itself, and the sum obtained multiplied again by the price of the carat, as follows: For the two carat gem, $2 \times 2 \times 125 = \500 ; the three carat gem— $3 \times 3 \times 125 = \$1,125$, and so on indefinitely.

This calculation, however, does not always hold good after the brilliants exceed ten carats. Fancy, scarcity, demand and other circumstances come in at this point which usually unsettle any fixed rate of calculation.

Rough diamonds, unfit for cutting, and such

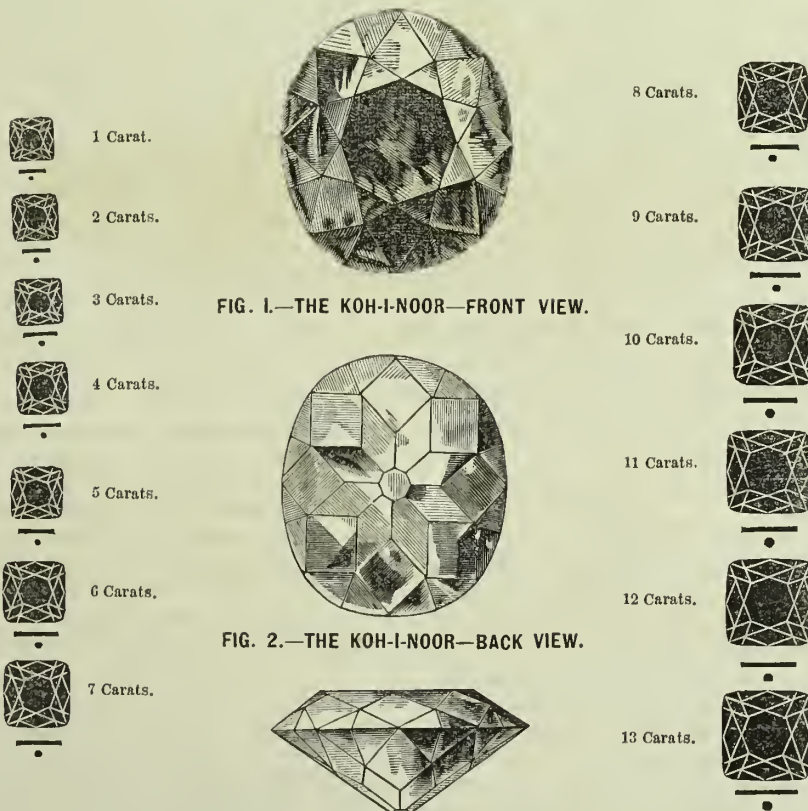


FIG. 1.—THE KOH-I-NOOR—FRONT VIEW.

FIG. 2.—THE KOH-I-NOOR—BACK VIEW.

FIG. 3.—THE KOH-I-NOOR—SIDE VIEW.

The genuine diamond also becomes clear much sooner than the false.

The gems are sold by weight, as carat and grains; 1 carat is equal to 4 grains, and 41 carats are equal to one ounce. The name carat is from *Kuara*, the coral tree (erythrina), the red pods of which, when dry, were formerly used for weighing gold dust. Each of these pods weighs 4 grains, which is therefore equal to one carat, or, as it was formerly spelt, karat, to conform more nearly to the spelling of the plant.

A brilliant, properly cut, of one carat weight, is worth in Paris from \$60 to \$70. In the United States, it would be worth from \$100 to \$125. Extraordinarily pure and brilliant ones are sometimes sold for \$150.

Diamonds below one carat in weight, are worth at the rate of about \$60 in this city; that is, a half carat diamond is worth \$30; a quarter carat, \$15, etc. When they are so small as to require eight or ten to make a carat, the ratio of price increases by reason of the extra cost of cutting the number of gems required to make the carat.

as are used by glass-cutters, etc., are worth from \$10 to 15 per carat; smaller ones, such as are used by lithographers for etching, etc., are worth still less per carat. Black diamonds, used for drilling, as in the diamond drill, used for mining and quarrying purposes are worth about \$16 per carat. Thus every diamond of whatever character, or however large or small, has its value, and commands a ready sale.

The sides of the diamonds, from 1 to 13 carats in weight are very accurately given in the accompanying illustration.

The diamond is sometimes of such a form that it can only be cut into what is called "spread diamonds or flat stones," so as to display a large surface, which are sold much cheaper, per carat, than those of the regular cut.

FRUITS AND THEIR PRESERVATION.—The Oakland Farming, Horticultural and Industrial Club, on Friday evening, Aug. 9th, will discuss the subject—chosen by its lady members—of the most desirable varieties of small fruits, as adapted to, and the best methods of preserving. The model of a new invention for finely cutting and mashing the waste straw of our grain fields, fitting it as food for stock, will be exhibited by the patentee for the first time to the public.

Plowing—Horses vs. Steam.

In the old and time-worn lauds of England, France and along the Egyptian shores of the Nile, plowing by steam and doing it successfully and profitably, has, as we are well assured, become a matter of fact; but is it so to any extent in any part of the United States? We know that numerous steam plows have been put on trial at various times with partial success; but are they still running and evidently growing in favor anywhere? If so, there is very little said of them.

Will some one of our very numerous agricultural exchanges say, that in their immediate vicinity they know of a steam plowing apparatus that is successfully working as many as six plows abreast, and working on continuously from day to day at a profit over horse-power. We know that "Fowler's steam plows," of English invention and make, have been introduced into some of the Atlantic States; but are they operating successfully, and can we safely send for them, and know that after a large expense in getting them here, we can be sure of working them successfully as against horse-power?

Comparative Expense.

We have, of California invention and made right at home, gangs of three plows each, that with six horses and one man to sit upon the gang and drive, can do good work, and they do it to a depth of soil sufficient for the production of all our grain crops to perfection. Now take two of these gangs, and we have two men and twelve horses cutting a width of six furrows; the wages of the two men at \$2.50 per day amounting to five dollars.

Is there a steam plow in the world cutting six furrows in width, that can be operated by just two common plowmen, or at the same cost, of five dollars per day, and be run at a cost for fuel and attendance so much less than the twelve horses, as to make it, capital and all considered, greatly superior to horse-power?

Our desire would be, and is, to equal the world, or the mechanical genius of Great Britain or any other country, in the production of steam plowing apparatus, but we must contrive to plow with it cheaper than it can be done with animal power or our efforts will be fruitless of good.

Fruit Food.

With all the increase of nurseries and orchards throughout the entire of the Atlantic States, good fruits are worth more now than they were twenty years ago. There is a great deal more fruit eaten, systematically eaten with nearly every meal, summer and winter, either unprepared or canned. As a consequence there is a positive and growing interest in the production of fruits, and as the object possesses pecuniary interests to most growers, they are taking care to cultivate the best varieties.

But as an article of food, fruits are now considered as essential to a really proper diet, taking rank with bread and vegetables; and if less meats were used and their place supplied with fine fruits, it would promote the general health of the people and particularly in all hot countries and climates. We overtax the digestive powers by eating too much solid, concentrated food. For the heavy meats substitute more ripe fruits, or if not ripe, then let them be thoroughly cooked.

SPOT or scab, has within the past six days, destroyed nearly one-half of all the wheat crop in Western Iowa. Its ravages are to be seen on this side of the river, to a limited extent.—*Blair Times.*

CORRESPONDENCE.

Silk Culture—Its Condition.

EDITORS RURAL PRESS: Referring to an article in your issue of July 13th on "Silk—Now for Information," I am impelled to trespass upon your time and type, and give you some of my experience and ideas in regard to sericulture. You say, "the people of the State have been for two or more years looking to the silk growers for information as to the nature of the industry of raising silk, and the silk growers have been looking to the California Silk Manufacturing company to encourage their business, and to fix a paying price for their cocoons." The people of the State ought to know all about it. Those that have been engaged in the rearing of silkworms do, and those that have been engaged in wearing and decorating themselves with the precious product do not, although, of all, they should.

A State Law.

Somo three or four years ago it [is] well known and remembered that there was a law in existence passed by the State Legislature for the encouragement of this especial branch of industry, an honest, fair, square promise on the part of the State to pay to all who should engage in it, certain premiums for certain productions, which in itself considered was the merest trifle in comparison to the actual outlay of engaging in the business, still a great many were induced by that law, and the very flattering prospects held out and heralded by those who professed to know all about it, and in whom from their positions and the manner of presenting it, the people would naturally place confidence, did engage in it earnestly and in accordance with the law regulating the planting of trees and rearing of silkworms as a permanent industry, including your humble servant; after having planted my trees and built my cocoonery 45x100 feet, one year having elapsed, and applications for premiums were being presented to the proper authorities, it was discovered that some were not entitled to premiums, in spirit, if not in the letter of the law, and that many trees had been planted purely for the premium on trees, and not as the law contemplated, for permanent silk culture.

Repeal of the Law.

Therefore to obviate the difficulty, the law was repealed, the State Board of Agriculture abolished, the contract ignored, and not a premium allowed even to those who had engaged in it in good faith, spending thousands of dollars and years of time. This much for the encouragement of the enterprise at the out-start. Still, having engaged in it as a permanent business regardless of what the conscientious administrators of law and justice did, and the amount of money still due me on the contract by the State of California, I have continued in my endeavors for the past four years, and have made the matter a subject of careful study, and am satisfied that with proper treatment there need be no failure in raising silkworms.

For two years I employed skilled foreign help, European, to manage the worms, each year failing to raise the crop, so I concluded to dispense with such help, and manage them myself, adopting a system entirely my own, obviating the handling of the worms in any way, and enabling me to perform alone the work that would require ten men to do in the same given length of time, and I am happy to inform you that the result was a perfect success, not losing a single worm from sickness, but all finishing their cocoons nicely without a symptom of disease manifesting itself in any manner, attributable without a doubt to the manner in which they were reared, for I have heard from some of the very same that they did not do well in other localities.

No Home Market.

The variety is the French Annual, and my cocoons splendid, anticipating a ready sale, in fact, supposing the Silk Manufacturing company would only be too glad to buy my product, imagine if possible my utter amazement, upon inquiry what they were paying for good French Annual cocoons? "We don't

buy cocoons, we only buy reeled silk." Well thinks I, that's nice. Silk factories in our midst and want farmers to half manufacture the product before they will buy; yes, that's very nice, but don't think I'll manufacture; think I'll let them obtain their supplies where the people can afford to do it for them, I can't. This much secondly for the encouragement of the enterprise by the manufacturers to the producers, and the people ought to know it, know all about it, and instead of my being able to contribute to the general fund of material for manufacture here at home, I am obliged to make eggs of my product, ship them to a foreign country there to be reproduced, manufactured, reshipped to California, and millions of dollars paid for the very same which should all be done here.

Yes, I shall make a few hundred ounces of the best French Annual eggs, and should it prove remunerative I may continue for the production of eggs, but I can't afford to encourage manufacturers and capitalists in the way they propose to us producers; no, sir; and if things remain unchanged and manufacturers can't afford to buy raw material to manufacture, my advice to any who may contemplate producing raw material is to let it alone; but there is no reason in the world why we should not supply the eggs that France and Italy are sending to China and Japan annually for, and amounting to some millions of dollars.

The Result.

I can confidently assert that eggs can be produced here that will do well there, for if the worm is vigorous and healthy the egg most naturally would be so, and worms reared as mine were could not sicken, so I propose to try eggs for any profit to accrue from the silk industry. You ask for information from the silk-growers. Speaking for myself of course, I am willing to give the people of the State the benefit of my experience, as I am neither afraid nor ashamed of the result, I engaged in it honestly and earnestly and have satisfied myself and demonstrated the fact that silkworms can be successfully raised, and had the State extended its fostering care and aided it munificently, it would to-day have had an industry successfully inaugurated, returning incalculable benefits therefrom. On the contrary after passing the law and contracting with us, it turned round and swindled us out of the beggarly pittance; it needed the coin for other purposes and it took it, but the ladies will still wear silk whether we produce it or not, as it will be produced, and our money will go for it. The present aspect of affairs as presented to my mind in regard to producing silk in California for the present, is, as I will say my communication is, "Wound up."

W. H. B.

Tulare County.

EDS. PRESS:—We are having quite a pleasant summer, the highest point reached by the mercury being 109°, and that only on one or two days the last of June; since then it has generally varied from 90° to 100° during the hottest part of the day, with a breeze that makes it quite pleasant most of the day. We have no dust storms this summer, and the breeze is more from the north and northeast. All the prophets are foretelling an early and wet winter, and in confirmation of their statement, vines, trees, etc., are starting out earlier to make their fall growth. I notice considerable change in a week past.

The Grain Crop

Is claiming the farmers' attention now, threshing having been finished by some; the yield varies from fifteen to thirty bushels per acre; ours only giving us sixteen, much being left by the header, and most of it being the third crop on the land since plowing, so the weeds came thick and we could not expect much grain; still a good spring rain would have made a fair crop. I know it is not good farming, and am not in favor of it; but the vegetables, in which we are more interested claimed attention, so, preferred to let barley take its chances. What price grain will bring is quite a question with the farmers now, as it is thought by some there is a surplus; and the Owens river trade appears to be coming this way, and as teams have engaged to haul all the ore to Tipton, it is very probable grain will bring a good price before winter. I hear contractors are around trying to engage large quantities to be delivered on the Owens river road.

I think it is this time part of the country could raise all its own grain-fed pork, and not be importing hams, bacon and lard,

in fact we ought to be able supply all the mines south of us; so I ask any of your readers who have had experience in feeding cooked barley, to tell us their success, or failure, of the kind of stock hogs used, and how many pounds of pork for one hundred pounds cooked barley, etc.

We are informed the new town of Tipton is to be the railroad terminus for a year, if so, it will grow to be quite a place, for it is in a desirable situation, and opens a

Fine Chance for Immigrants

Who want to pre-empt on homestead Government land, there being plenty of it on all sides of the town, of good quality, snitable for either grain or fruit raising; on much of it I think trees, vines and alfalfa will do well without irrigation; but if that is wanted it can be had from wells from fifteen to twenty feet deep; or nearer the foot hills, from fifty to one hundred feet, and a water lifter that will deliver ten thousand gallons per hour, can be had for about six hundred dollar.

ISSAC B. RUMFORD.

Plano, July 28, 1872.

Los Angeles and Kern Counties.

EDITORS PACIFIC RURAL PRESS:—Leaving San Diego Cañon, on the Fourth of July, a pleasant drive of five miles southwest bring the traveler to Richland, a town in prospect, with excellent water privileges—thence, four miles in the same direction is the thriving new town of Santa Anna, and a little further on, the paper city of Foster. From this place, a distance of four miles in the same direction, brings us to the immenso estate of Flint, Bixby & Co., of which Charles E. French is the resident Superintendent. There are in course of erection some twenty-five miles of fence, to exclude outside stock; there being some one hundred thousand head of sheep belonging to these extensive wool-growers, grazing in this vicinity. Everything about the premises evinces careful supervision.

Turning our face to the northward, we sped toward the extreme north-east portion of the county, to look at the great sheep ranges of that section, and in two days' travel reach Elizabeth Lake, or, as I should call it, Alkali Pond.

The vicinity of Elizabeth Lake is occupied by native Californians and Frenchmen almost exclusively, as ranges for sheep, and the country is fully stocked. There are unmistakable evidences here of terrestrial convulsions, of comparatively recent date, and upon the grandest scale. Leaving Elizabeth Lake for the Tehachapay country, twenty miles eastward brings us to Willow Spring, in reaching which a five mile stretch is through a forest of the Spanish bayonet, which here often attains a sufficient size to form quite respectable shade.

A Desert Country.

At the Willow Spring, we found the thermometer indicated 110°, but concluded to go on to Oak creek, fourteen miles further, thinking that it was in the mountains several hundred feet higher, it would be a cooler place to stop; but as these station keepers desire every traveler to stop, the charges for hay and feed being only three dollars per day, they positively decline giving a traveler any information, especially if he does not patronize the bar; therefore your correspondent was permitted to drive that afternoon forty long miles through the scorching sand, to Desert Station, to find the thermometer 115°, with a sirocco blowing all night; making over sixty miles that day, forty of it without water! If the animal driven had not been of the best, it must have perished, as it was the poor beast suffered terribly.

Turning back from the Desert Station, (to the northwest) which is on the road to Owens river, 27 miles, brings us to the sinks of Tehachapay, the point where the present Southern Pacific Railway is supposed to pass from the Sierras into the Colorado desert. A miner that has a placer claim not far from Bright's mill, informed me that he sank a well 200 feet on the plains ten miles from this sink without finding water.

As a Railway Country.

It is opined that the railway people had no intention of crossing this waterless waste, when by a little divergence they can go through a productive country, and it is

further ventured that this company will not move further south, now that they have gone far enough to secure the Owens river trade, until Kern and Los Angeles counties are fogged out of subsidies, by these interested servants of the public.

Passing northward some 20 miles from Tehachapay sink—(where Mr. Cameron has a ranch of 160 acres enclosed, which he is willing to part with for the moderate sum of \$10,000), we come to the region of oaks and pines, a patriarch of the former species, measuring 8 feet in diameter, 6 feet above the ground. Here the scenery is truly pastoral and beautiful, the valleys and mountains are clothed in living green of every shade.

We are now in Kern county, the line passing near the sinks of Tehachapay, and although this county bears the reputation abroad of being quite malarious at this season of the year, we found this mountain region east and north of Fort Tejon, perfectly free from any indications of that kind, with good water, pure air, and grass and grain looking all that any one could desire.

A Beautiful Country.

Five miles north of the Tehachapay is Bear Valley and Cummings Valley, perfect little gems of variegated verdure; chocked across with substantial fences and dotted with farm houses, where three years since, hardly anything but the natural adornments were to be seen. Now we are really in a mountainous region where for five miles up Livermore mountain the road winds at a fearful angle—to the saw mills of Livermore & Chester, where some 25 persons are employed. This mill is of the capacity of sixteen thousand feet per day, and is superintended by Messrs Whitman & McFadden, who are gentlemen evidently well posted in the business of getting out and preparing lumber.

From the northern face of this mountain on a clear day, Tulare Lake 80 miles distant can be seen quite distinctly, and Kern and Buena Vista Lakes appear to be just under foot, although the nearest is 23 miles away, which gives a conception of our altitude, probably 4,000 feet above the plain. We ventured a flying trip to Bakersfield and Kern river, and found that the indefatigable Dewey himself (not A. T.) had literally swept the field, but we with as good a grace as possible took the gleaners share.

A Cotton Country.

The cotton fields of Kern county reminded us slightly of old times, and the cotton fields of Mississippi. There are several varieties growing here, but none that appear better than the "Dixon," an average field crop of which last season, rated as high as New Orleans middling, which is above the average of the quantity of cotton grown in the Mississippi valley, and is the most prolific of any variety tried in this section.

Mr. W. G. Allen, Jr., a gentleman of evident experience in the manipulation of cotton, is superintending the cotton interest of the Cotton Growers Association here. This gentleman is of the opinion that the growing of cotton can be made a success by the introduction of Japanese cheap labor. Turning our face once more to the Sunny South, with the thermometer only at 110°, a pleasant drive of 30 miles brings us near the foot of Tejon Cañon to Hindson & Rosemeyer's.

Great Stock Country.

These truly hospitable gentlemen appear to flourish, as they certainly deserve to, and have a hundred and sixty acres of land here just north of the Tejon Reservation, which for a wonder, was not taken in, in the grants given away by the U. S. Government, to the Beale purchase. These sheep ranchers own four ranchos extending from Livermore Mountain or its vicinity, southward and westward, about forty miles, the last Rancho to the southward is designated "Lea Lievesa" a free translation of which may be construed to mean, all there was left of good land in that direction; which is literally the case. There are 100,000 sheep belonging to the Beale concern, grazing at Fort Tejon and heareabout, beside some 50,000 cattle that run free—on this little farm, because the proprietors are too poor to fence, it is supposed.

F. M. SHAW.

Los Angeles, July 26th, 1872.

ART AND SCIENCE.—At a recent academy dinner Professor Tyndall said, happily: There is no reason why art and science should not dwell together in amity; for, though they are both suitors of the same mistress, Nature, they are so in a sense and fashion which preclude the thought of jealousy on either side. You love her for her beauty, we for her order and her truth; but I trust that neither of us is so narrow-hearted as to entirely exclude from himself the feelings which belong to the other.

POULTRY NOTES.

Hens and Health.

Hens and chickens, when they used to own themselves and work for a living, were the jungle fowl in India. Millions of them are living there still—the far-away cousins of our busy barn-yard people. Hunters in our Western States, when they hear crowing and cackling, know they are coming near a farm-house; but hunters in India when they hear the same cries know they are facing the wilderness.

Going half round the globe upsets pretty much everything. It is hard to tell what is a sign of what, all the world over; white for weddings among us—for funerals among the Chinese; hats off in Congress—hats on in Parliament; stand up to pray among the Scotch—fall down upon your face among the Mohammedans; the weeds of one country are the petted and potted flowers of another. I have seen our big bull thistle, and a beautiful flower it is too, in European gardens; and our familiar mullen does duty abroad as the American velvet plant. Until a man travels he doesn't know much for certain. And if he travels long enough he won't know anything.

But to return to these jungle fowl and their posterity in my barn-yard. I purposed, planned, and performed great things in their behalf. Not many months ago I spent more hundreds of dollars than I would like to confess to a self-denying home missionary, in constructing a hen-parlor with convenient approaches.

It proved to be an admirable room; so admirable that it cost some envy even in the domestic department of my house. It was proposed to move the laundry and kitchen to the hen-parlor, so light and cheerful was it, and so easy to keep clean. It reached into the hill-side, and was one-half under ground. The out-of-ground part was of double glass and saw the sun all day long. The floor was hard and smooth as stone. The roosts and hen-boxes were made of pine worth thirty dollars a thousand. There was a ventilator in my hen-parlor, which is more than any room in my house has; a spring of water unfailing, and sand, and oyster shells, buckwheat, corn, rye, cracked wheat, screenings, with tit-bits from the butchers. In short, all the appliances of the highest hen civilization were gathered in my hen-parlor.

Possibly there may be a higher degree of luxury vouchsafed to poultry in far-away regions among the bloated aristocrats of Great Britain; but, so far as my knowledge goes, hens never had a better setting out than my hens had.

With what result?

This spring, if I have kept the count correctly, there have been eight broods of chickens hatched, varying in numbers from one to ten. But singularly enough the mothers have proved most unnatural, and looked to me to provide nurses for their children. This became necessary not alone because of their unwillingness, but also their feebleness and worn out condition generally.

They were genteel Dorkings, of pure and perfect breed. In proof of which, they cultivated every form of feeble health known among the most approved aristocrats. They languished; they pined; they were sleepless; had disturbed dreams, I judge by the cries heard; and after a sufficient amount of languid promenading in the sunshine inside and outside of their parlor windows, hen after hen has died without any seeming cause, but with perfect decorum and resignation.

Suspecting that their delicacy of organization might prove unequal to the task of propagating their kind, I took the precaution of adding to their society robust Brahmas of approved reputation. But as usual the Brahmas caught laziness more effectually than the Dorkings strength. By a sort of compulsory pantomime, we one day indicated to a Brahma hen our wishes as to her duty towards her chickens. We put her in a convenient place and surrounded her with her chickens. They did their part faithfully. They cried to her repeatedly. They reached up their little bills and buried their heads in what feathers they could reach upon her columnar legs. But she wasn't going to squat. She had caught the habits of the upper classes in my hen-parlor; if Dorkings can put their children out to nurse, she wasn't going to attend her children either. I think I do not exaggerate when I say that in all the population of my barn-yard, there has not been a symptom of parental affection for months.

In short, I find myself repeating in behalf of this domesticated and civilized jungle-fowl all the experience which doctors are perfecting in behalf of us who are but civilized and domesticated savages.

As if to twit me with my nonsense, one of my hens got through the park palings and ran off, stole a nest in a wretched, cold, damp place, and came off with a brood of thirteen chickens and raised every one of them, contrary to the decencies and proprieties of life; while other hens that were watched over and provided with boxes and clean straw and sulphur, and I had almost said with gruel and brown stout, were with difficulty held to their duty in the line of incubation, and when at last their broods struggled into being, they proved sickly and short-lived orphans. I pay ten cents a head for every chicken that my children brood and tend and bring up to tail feathers and angle-worm hunts in the garden.

I have done a deal of meditating in that hen-

parlor of mine. I begin to distrust civilization and the doctors. Every hen in my parlor would be improved by back-sliding towards her ancestral jungle. And there are few of my neighbors whom I meet saluting them and being saluted with the hospital cry—"how do you do, to-day?" "are you well, to-day?" "how is your family, to-day?" who do not testify by this ghostly politeness, how much we have lost by laying off our savagery and living a life of civilization.

I suspect that the way to health is the little rugged path that leads back to nature. I suspect that my hens will all do better when the time comes that I am not able to furnish them a parlor any longer, and not my hens only—but my children too.—T. K. Beecher.

THE APIARY.

Bee-Culture and Woman's Work.

Adam Grim, of Jefferson, Wis., who is a most successful apiarist, commenced the season last spring with two hundred and eighty-five swarms of bees, and increased the number by swarming to six hundred and forty-six. These swarms produced within a fraction of twenty-one thousand pounds of honey, which sold, strained, for four thousand one hundred dollars. The Jefferson County Union says:

"We often hear women say that there is no remunerative employment for them. As an answer to this, we would state that Mr. Grim has two daughters, who have each taken separate charge of an important part of the apiary. Miss Kate Grim has by her skill and attention the past summer, earned one thousand two hundred dollars net, and Miss Margaret Grim has earned one thousand four hundred dollars net."

INTERESTING TO APIARISTS.—Henry E. Norton, of Lehi City, writes to the Salt Lake News as follows: "I wish to disclose a discovery that I have made to the apiarists of Utah, with regard to crippled bees, the cause, and the remedy. The large podded milkweed is sure death, either directly or indirectly, to every bee that lights on it, the bees either stick on the top of it or carry away a small scale that sticks to their feet. The bees then pull their feet off, trying to get it away from them. That is the cause of the bees carrying live bees away constantly. Destroy that weed and the remedy is effected."

GOOD YIELD OF HONEY.—Mr. C. H. Isham, of Livingston county, New York, says that from his apiary of less than fifty stocks, he obtained in 1870 over two thousand six hundred pounds of good box honey, leaving an abundance of stores for the bees to winter on.

Harvesting Wheat.

A. J. Dufur, an experienced and thinking farmer of Oregon, writes to the Portland Bulletin concerning the injury resulting to wheat from cutting the heads off, thereby preventing the flow of sap into the grain from the stalk, or making it necessary to leave the grain until perfectly dry, thus allowing the sap to go to the roots, which otherwise would go to the grain. The subject is worth the consideration of farmers in California, where headers have been extensively introduced. Millers everywhere decide against the use of headers, some of them having flour returned on contract as unmerchantable from this cause alone. The bread made from it is clammy. Mr. Dufur says every practical miller in Oregon has declared emphatically against the use of headers in the wheat field, and many have gone so far as to demand that a circular should be issued from the State Agricultural Department, warning the farmers against using headers for harvesting wheat. California wheat now has a good reputation in foreign markets, but however well established, it may be lost, and it is much easier to maintain the credit of an article than to restore a credit lost by mismanagement or neglect. California has in use numerous machines for threshing, cleaning and sacking wheat by one operation. A Mr. Lathrop, of San José, invented such a machine, which in the dry wheat fields of California worked admirably, saving much labor and expense, but there is one great objection to this machine which applies also to the headers. It is necessary to leave the grain standing until perfectly dry before harvesting, the result being to thicken and harden the hull, increase the quantity of bran and dry up and deaden the kernel, thus depreciating the value of the grain. Mr. Lathrop still uses his machines and has introduced them in the Eastern States, but the evil effect of this mode of harvesting is yearly becoming more apparent. Grain, like hay, though less essential should pass through a curative process after cutting. For this purpose it should be cut before it is dry and stacked. Wheat cut before it is fully ripe, weighs more to the bushel, is plumper and in every way superior to that left standing until the roots have absorbed every particle of moisture in the stalk, and it must be left so standing if the harvester and thresher go together. With headers wheat may be cut before it is ripe, but in that case the grain shrinks as before stated, because the stalk, being cut off, cannot send any sap to the head and the grain deteriorates instead of growing sweeter and plumper after cutting, with the stalk attached.—Bulletin.

MISCELLANEOUS.

Comets and Their Tails.

In discussing these erratic bodies Professor Zöllner starts with the fact that fluids as water, mercury, and solids of nearly all kinds, give off vapor of low tension, though in too small a quantity to be recognized by any tests with which we are at present acquainted. It therefore follows that the masses of matter scattered throughout space are ultimately surrounded with an atmosphere of their own vapor. If the volume of such masses is too small to exert sufficient attractive force to retain this vapor, the whole mass ultimately assumes the vaporous state. Professor Zöllner thinks the many of the small comets are such masses of vapor, while others are fluid, consisting of water or perhaps of liquid hydrocarbons, an idea which is fortified by the character of the spectra of certain nebulae as well as of some of the smaller comets.

Regarding the self-luminosity of comets and the formation of their trains, Professor Zöllner says, there are but two causes which can produce the first of these results, viz., elevation of temperature and electric action. Setting the first aside as being utterly inadequate under the circumstances, the author thinks that the electricity developed by the solar rays, either in the process of evaporation or by the mechanical and molecular disturbances they produce, is simply sufficient to cause the luminosity and also to form the train. The explanation here given of the formation of the tails or trains of comets is exceedingly ingenious, for it not only applies to those instances in which the train is directed from the sun, acting under these circumstances by repulsion, but it also accounts for the fact that in some instances the tail is directed toward the sun, there being under these circumstances electrical attraction instead of repulsion.—Scribner.

The Theory of Fermentation.

Is fermentation a process of Life or of Death? Liebig holds that it is a phenomenon connected with death, and that all substances, and especially those which are albuminoid, as albumen, fibrin, casein; or, liquids, as blood and milk, have the property in the presence of air of initiating such movements in the molecules of organic bodies as to cause them to take on new forms. According to Pasteur all fermentations are processes connected with life, and fermentable matter never undergoes fermentation without an incessant interchange of molecules between it and living cells, which grow or multiply in assimilating a portion of the fermentable matter itself.

In the souring of wine, M. Pasteur holds that a growth which he calls *Mycoderma Aceti* forms on the surface of the liquid. This little microscopic vegetable, he says, has the power of condensing the oxygen of the air after the fashion of platinum black, or of blood globules, and conveying it to the liquid on which it rests. Liebig denies this, saying that alcohol diluted with water does not contain the elements for the formation of the *Mycoderma Aceti*, and yet it is convertible into vinegar. Pasteur replies that the water used to dilute the alcohol contains everything necessary for the development of the vegetable, and reasserts the truth of his theory, adding that if the vessels in which acetification of alcoholic solutions occurs (as in wine and beer making) are steamed or filled with boiling water for a sufficient time, vinegar will not again form; at least not until a new crop of *Mycoderma Aceti* has been produced.

BURNING THE DIAMOND.—It is well known to many that Newton made a most wonderful prediction respecting the diamond; his powerful mind, antedating the discoveries of modern chemistry, pronounced it to be an unctuous or combustible substance. We now know that the diamond, beautifully transparent, highly refractive as it is, is identical in its composition with charcoal, graphite, or plumbago. Yet it will not burn in ordinary air, the oxygen is too much diluted by the nitrogen; its atoms are too few in number to carry on an effective attack, but when the atmospheric air is concentrated into an atmosphere of approximately pure oxygen, each of the atomic projectiles is assisted by its neighbor, and as it strikes the surface of the diamond its motion of translation is arrested, and converted into the motion which we term heat; and the heat thus produced is so intense that the crystalline carbon is kept at nearly a white heat, so that the atoms of carbon and those of oxygen unite, and carbonic acid gas is produced. To burn a diamond the operator holds the gem in a loop of platinum wire, and first heats it to redness in a hydrogen flame, and then plunging it into a jar containing oxygen, when the pale glow at once assumes a greatly increased brightness, which is kept up until the diamond is either removed or entirely consumed.

ANOTHER IMMENSE BRIDGE.—It is proposed to throw a great bridge over the Hudson river at Poughkeepsie. The bridge will be composed of five spans of five hundred feet each, and it will be one hundred and twenty feet in height. It will connect New England with the coal-fields of Pennsylvania.

Architecture—Ancient and Modern.

Mr. Ferguson, in his History of Architecture, remarks that while in every nation the art was successful, wherever practiced up to the sixteenth century, since then "not one building has been produced that is admitted to be entirely satisfactory or which permanently retains a hold on general admiration."

The reason of this, says Mr. Day, in the preface to his recently published work on The Science of Aesthetics, is "That ancient architecture built suitably to the purposes of the building;—or as we may express it, grasping first the idea of the building, it then with the best material at hand proceeded intelligently to embody the idea in it; modern architecture, knowing vastly more of materials and of architectural details and having more constructive skill, has overlooked the vital element of old art—the actual incorporation of the idea into the material at its control. It has leaped blindly in hope to realize a perfect form, forgetting that no perfect form can be reached but in the rational way of expressing some idea in its appropriate matter, and that this expressing, this embodying, is the governing element in all art procedure and can never be realized but intelligently and aimingly, that is rationally, and in accordance with the laws of the rational nature."

Silvered Steel Cutlery.

According to the London Mechanics' Magazine, Mr. Neil, of London, has devised a process for so thoroughly uniting silver with cutlery as to produce an article of great practical value. It has long been the custom to electroplate silver on steel; but whenever the external coating is ground off the steel is exposed, and thereby rendered liable to rust. In the present instance the knives are finished in the finest style, and chemically cleaned by a special process. They are then treated with perfectly pure silver, and the two are pressed together by processes which are not made known by the inventor. It is asserted that the silver is driven into the pores of the steel, and that heat and moisture have no perceptible effect on the metals. The result is a knife that will not rust, is not stained by acids, and only requires washing after use. It may be sharpened any number of times, with the result of always showing a silver surface.

PLASTER AS A PROTECTION FROM FIRE.—After the conflagration in Paris, it was generally found, that with good plaster work over them, beams and columns of wood were entirely protected from the fire. In cases where limestone walls had been utterly ruined on the outside by the flames passing through the window openings, the same walls, internally escaped almost unscathed, owing to their being coated with plaster.

On many such plastered walls the distemper decorations were still to be made out. The iron roofs rendered good service, and the party walls of each house were carried up right through the roof—a most important precaution, for otherwise nothing could have prevented the disastrous conflagration from being more extensive than it was. It was also found that good woodwork in beams and posts, good wood floors, well pugged, and good wooden staircases, were safer and more to be depended upon than cast iron columns and stone staircases, landings and floors. Stone staircases well protected by plaster were fireproof, although not so safe as wood in case of heavy debris falling upon them.

SEELY'S "EXTRACT OF HOPS."—"Within a recent period Prof. Charles A. Seely, a well-known chemist of New York, has patented a method of manufacturing the extract of hops, by the use of which the hop is greatly economized. Several experimental brewings have been made in this city, which have demonstrated that the use of the extract gives a gain of from ten to fifteen per cent. over that obtained by the use of the crude hop. Here is an improvement that promises to open a new and extensive business."

This item refers to an invention involving the very remarkable and unexpected observation, first made by Prof. Seely, that "gasoline," or rather the petroleum hydrocarbons that distill below 120 deg. F., dissolve out the whole medicinal virtue of the hop, with none of the useless matter. This extract is far superior to the hop itself. We are told that thousands of barrels of beer, instead of mere experimental brewings, have now been made with it, and highly approved of by skilled experts.—Gaslight Journal.

CUTTING MARBLE, ETC.—A recently devised foreign apparatus for stone cutting uses comprises a head that can be rapidly rotated and provided with diamond cutters, so arranged that while each cutter removes material and traces a path over the molded surface to be produced, all the cutters produce surfaces free from distinct scratches. For cutting mostly on a horizontal face the head is solid in which the diamonds are mounted. For molding on an edge, the cutter head holds bits of steel studded with black diamonds. A rotary tool is shaped to finish the groove, and preferably formed of brass. For cutting as with a saw into marble, a small round vertical spindle is used, the surface of which is studded with black diamonds or carbon points, so arranged in rows that the cutting points of the different rows merge their paths of action, so as to cut the whole length of the cutting plane of the shaft.

FARMERS IN COUNCIL.

Sacramento Farmers' Club.

The Club met on Saturday at the usual time and place.

City Market.

T. K. Stewart, on behalf of the committee to draw up articles of incorporation and obtain subscriptions, reported that about half of the stock had been subscribed—all by members of the Club—and that by the next meeting they hoped to be able to report a plan of the building and give more definite information.

S. N. Baker, P. Callahan and C. W. Reed were, at request of Stewart, added to the committee.

The Secretary called up the subject for discussion for the day—

Fertilization of California Soils.

In the absence of W. S. Manlove who had been appointed to open the discussion, the President was called on, and responded by giving his experience with plowing in straw. He said, in 1855, when he went on his farm near Brighton, he began as he had done in the Atlantic States, to fertilize his land by plowing in his straw. He spread the straw on the land and commenced plowing deep and turning under the straw very carefully, and upon the surface sowed his wheat; but to his disappointment the straw did not rot, but lay under the soil keeping the dampness from rising from below to feed the roots of the grain, and as soon as the warm weather came on his wheat dried up. The next season when he plowed the land he turned up the straw nearly as whole and sound as when it was plowed under, and for seven years the straw—portions of it—remained in the soil undecayed. He therefore concluded this was a poor way to enrich the soil, and has not repeated the experiment. He had sometimes spread his straw on the land and burned it just before plowing; the ashes thus turned under seemed to be of advantage to the succeeding crop. He had also plowed in rotted straw and animal manure from his barnyard, and his experience had been that it caused the first crop of grain to burn or dry up as soon as the hot weather of the spring came on. However, since he had practiced cutting his grain with a header, leaving a large portion of the straw standing evenly on the ground to be trampled down and broken up by stock previous to plowing in again, he was satisfied that his land was improving from year to year. In this way, the straw being fine and thin on the ground when plowed under, did not operate as in the first experiment, but gradually decayed and imparted its fertilizing qualities to the soil.

C. W. Hoyt.—Am not a grain grower, but cultivate trees and vegetables; had used straw around trees and between rows of vegetables with excellent results. He did not know that by so doing the straw added any fertilizing quality to the soil itself, but it acted as mulch and attracted and retained moisture, both from the atmosphere and the soil below, and in this way added very materially to the growth of the present crop. Sand drawn upon and spread over heavy soil will answer the same purpose. Indeed, he believed that the land was kept up in its producing qualities by water, and he had doubts whether water was not the principle and best fertilizer. Grain or any kind of seed placed in a tumbler of water will grow quick and thrifty. He thought, also, that sand is a good fertilizer. He had filled up a slough with sand, and by accident a water-melon seed was dropped, and came up on this sand and made a very uncommon growth, and produced a wonderful crop of melons.

Hoag—Clean washed sand contains very little fertility, as proved by the non-productiveness of such deposits after an overflow of our rivers; mixed with sediment or heavy soil, it helped to hold moisture and render the mixture porous, so the air can penetrate, and in this way is valuable. Or after laying a few years exposed to the weather, decaying and mixing with vegetable matter, sand deposits become productive.

Beek instanced the productiveness of the sand hills back of San Francisco, about the Cliff House.

Baker—That is not clean sand; it is mixed with vegetable matter and fertilizing materials from the sea, which have been blown up and deposited with it.

Hoag asked Hoyt if the slough he filled with sand did not contain water that seeped up through the sand and supplied his melon vine with moisture.

Hoyt—It did.

Hoag—That accounts for the great growth of the vine. The water was of course charged with fertilizing ingredients; the sand acted as the medium and feeder.

Rutter—Water is not a fertilizer. Vegetables started in water will not come to maturity—will not produce seed—and the leaves are soft and watery—they have no substance in them. Besides, when land has been thoroughly wet, either by the rains of winter or by flooding, it is in no condition to produce until it has been plowed and cultivated so as to pulverize it.

Hoyt—Refer to water plants growing in shallow ponds and even in the sea—floating on the surface—growing thriftily and producing seed; this is evidence that water has fertilizing qualities.

Geo. Rich—Has had considerable experience

in cultivating the soil and trying to keep up its producing properties. He had in his barnyard a large sink, or a low place like a cellar, with the sides cut down to a gradual decline towards the center. Into this sink I pitch my straw after the cattle have trampled and broken it up and minced it with their droppings, and the water that naturally runs in with this mixture causes it to ferment and decay each year; and then I draw this rotted manure out and cover it over my farm, and plow it in, with good results. It should not be spread on so thick as to exhaust the dampness and produce a scalding of the crop, as spoken of by Mr. Baker. Has sometimes spread this mixture between rows of strawberries, but generally found that the leaves of the strawberry decay sufficient to keep up the soil. I differ with Mr. Rutter as to the fertilizing properties of water. I think water contains a large quantity of fertilizing properties. Would instance the reputed fertility of the valley of the Nile and of our own river bottoms—kept up by the annual overflow.

Rutter—Perhaps we differ as to the meaning of the word "fertilize." I understand by it, that which enriches the soil and not that which causes it to produce temporarily a good crop.

Hoag—I understand the word "fertilize" in the sense in which we are using it in this discussion, to mean this—to keep up the producing qualities of the soil—to restore the properties of the soil which are exhausted by the growing crops; in a general sense, to fertilize the soil is to cause it to produce. In this latter sense, pure water, even distilled water that has all the impurities extracted, is a fertilizer. It is true such water adds no fertilizing or enriching material to the soil; but it dissolves the ingredients already in the soil and enables the roots or mouths of the plants to absorb or suck, or perhaps more properly, to drink them up. Plants cannot eat solids, however much fertilizing properties they may contain. They must first be reduced to a fluid state by the use of water. For though plants may very properly be said to have mouths, they have no teeth; they can only eat spoon victuals.

Mr. Baker's Straw, Etc.

Hence Mr. Baker's straw remaining in the ground in the shape of a solid, though containing the elements of fertility, could not be eaten by the grain, and could therefore do it no good. On the contrary it was an actual damage to the growing crop, because in the effort of nature to ferment or decay it the dampness of the soil was absorbed by it and thus drawn away from the roots of the plants. Hence the wheat scalded or dried up prematurely. So when he puts on rotted manure from the barnyard—because he spread it too thick—it required too much moisture to assimilate it to the soil; but the headed stubble being broken up fine by the stock and spread thinly each year used but little moisture on the process of decaying, and hence being kept up annually produced no such immediate bad effect, and finally resulted in a benefit.

The Compost Heap.

In my opinion Mr. Rich has hit upon the best method of utilizing his straw and other refuse products of the farm. Every farmer in this State should have his compost heap, and that heap should, like Mr. Rich's, be in a sink or depression in the ground, in or adjoining his barn-yard. Let everything that contains fertilizing ingredients be thrown into this heap; let all the straw and manure of the barn-yard be scraped into it each spring, and then cover it from a foot to two feet deep with soil—fine soil or sandy soil is best. Apply water enough to start it to fermenting, and keep it damp, so that it will not burn or scald, and you have a mine of riches. The soil covering is necessary to prevent the escape of gases—as the fermentation disengages them—and to absorb and retain them. Each fall or winter here this heap of rotted manure should be drawn out and spread thinly over the soil desired to be fertilized. It will form a good top dressing meadow, and may be plowed in for potatoes, corn or other vegetable crops, and if not used too freely, for grain of any kind.

Water a Fertilizer.

In my opinion water is, or should be, our cheapest and best fertilizer. The water that goes to the ocean through the Sacramento river carries with it sufficient fertilizing ingredients to keep up all the lands of the entire valley between the two ranges of mountains to its highest state of production. It collects and carries with it in solution—the best condition for our use—all the washing of the decaying vegetation and droppings of animal from the entire water-shed of the country it drains. Hence the material in the ocean to support and mature the sea plants referred to by Hoyt. It is these ingredients in the water that supports the water plants in our fresh water ponds and that causes the wheat to grow in the tumbler. Hence, too, the famed richness of the valley of the Nile and the lands bordering the Sacramento, which are overflowed each year. Would we keep all our lands on the higher branches—where all our great grain fields are cultivated—to a high degree of fertility, we have but to build irrigating canals and flood them each year—in the time of high water when it contains the greatest amount of fertilizing properties. To accomplish this it would be a paying operation to every land owner to part with one-half of his land he now owns—the other half would be worth more thus irrigated than all is now. It would produce more each year and its perpetual fertility would thus be secured for all

time to come—if irrigation should be kept up.

Santa Clara Valley a Sample.

We have a striking illustration of the truth of this proposition in the artesian wells of Santa Clara. The water that gushes up out of these wells and spreads over the land, keeps up its wonderful fertility. This water is the same that runs down from the mountains and foothills in the upper part of the valley and sinks into the light porous soil in that locality, and when tapped below boils up, bringing with it a large part of the fertilizing properties collected from those mountains and foothills. Nature then teaches us a lesson that we can easily by united action avail ourselves of. We have but to produce surface channels here to accomplish what nature accomplishes there by underground channels. Our artificial channels once created, would be far more valuable than their natural ones. The water of the Sacramento contains much more fertilizing ingredients than those of the Guadalupe, or of the Santa Clara artesian wells. The water under Mr. Rutter's place, at Florin, is but about eight feet below the surface. While it is much purer than that of the Sacramento river, it still is no doubt a good fertilizer, and the abundant use he makes of it accounts for the wonderful productiveness of his land. Because the land wants plowing and stirring up after it is irrigated is no proof that the water does not add to its fertility. It wants stirring to render it porous and mellow, so that the roots can penetrate it to find and eat the food left them by the water.

The subject of fertilizing by turning under green crops, clover, etc., was further discussed by Johnston, Murphy and others, and finally the whole subject was laid over for the next meeting—one week.

Napa County Farmers' Club.

Club met pursuant to adjournment, President Fisher in the chair.

Gentlemen present were invited to unite with the Club, whereupon eleven new members enrolled their names.

Mr. A. G. Clark suggested a discussion in regard to plows. Which of the many kinds in market had proved the best? Plowing is the first preparation for a crop of whatever kind, in every county, and the subject is therefore an important one. He said that being a dealer in agricultural implements as well as a farmer, he would like to know which plow farmers think is the best. He had had some experience in the matter, but would be pleased to hear from others who had more than himself.

Mr. Sawyer agreed with Mr. Clark that plowing was of the first importance to the farmer, and that all were interested in having implements that would do the best work and with the least labor. His experience went back many years. Had seen a plow as old as the Declaration of Independence. When he was a boy they universally used what was called the "bull plow," with wooden land side and mould board, with a small iron share. The mould board was often made of birch and covered with shark-skin. Then came the cast-iron plow, and as it cost considerable, we used to be very careful of it. Used to plow with four oxen. Having a piece of new land to plow, my father cautioned me not to use the cast plow for fear of breaking it. As he was going away for the day, I determined to try it. It went first-rate, and cut its way among the elm roots, and other obstacles, better than the bull plow. I took the bull plow into the field before father came home, and did not tell him till afterwards that I had used the cast plow. It took four or five years to convince people that it would stand, and it came very gradually into use. Then came the steel plow, which run easier and did better work; although the cast plow was still the best in gravelly ground. There has been a constant improvement ever since in the shape of mould-board and share, in strength, lightness and ease of draft, and finally in the invention of the gang plow, of which several kinds are used.

[Here an extended discussion ensued, on the relative merits of different kinds of plows, single and in gangs, a number of persons giving their views at length.—Ed.]

Mr. Fisher, the chairman, suggested that a test of various plows, at as early a period as possible, would be of great value. He believes that the great fault of all the plows in use here, was, that they do not throw the furrows flat enough. In our land and with our climate this is a matter of importance. Single plows in small fields are doubtless most economical, but for larger areas gang plows are preferable. The great trouble was with laborers. Not one man in twenty have knowledge enough to lay out the land and do the work. Thinks that the weight of a man upon a gang plow was no objection but rather beneficial.

Mr. Fisher here entered upon the question of the quantity of seed necessary, and thought that 80 or 100 pounds were not sufficient. Should hereafter sow 130 pounds. In this view he was joined by Mr. Saul who thought that a large proportion of seed had its germinating powers destroyed in threshing—sometimes he thought from experience, even as much as 60 out of 100. Mr. Sawyer thought that very much depends upon the time of sowing, and that 60 pounds was as good or better than more, if put in early. He gave some of his experience in proof of his views, as also did Mr. Saul, which we here omit for want of space.

Mr. Sawyer suggested that there should be

a Plowing Match in which all the different plows should be on exhibition, so farmers could judge fairly of their merits.

Mr. Nash, at the close of the discussion with leave of the Club, made some general remarks. He said the great trouble with farmers of all classes was, after having produced their crops, to get adequately paid for them. They needed organization, as they had every thing to contend with. The cost of hired help, mechanic's bills, and profits were extortionate. They have to give what is asked, and take what is offered. The costs of shipping eats up everything. What one thing can we raise and make a profit? Had spent some time with Mr. Lewellyn in Alameda county. He had found there that the farmers and fruit growers had combined and hired a steamboat to ship their produce. They don't ship any more by railroad, which used to charge them \$1.50 per chest for small fruits. They now ship per steamer at 62½ cents, at which the boat is making money, and weed and dog fennel are growing up around the depot.

In the present state of things we are making nothing and can make nothing. It cost \$1 per chest to pick my berries, and I have seen plenty of strawberries sold this year at \$2 and \$3 per hundred pounds. Every thing is eaten up by expenses, leaving the farmers nothing. Many of them cannot keep the Sheriff outside their fences. We must find out some plan of co-operation, such as they have in some places at the East, and have co-operative stores and shops, for our own protection. We may yet do something by a thorough and general organization. It must be and can be only a union of feeling and action, that we can prosper. Mr. Nash thought that the Club meetings should be held earlier in the day, so that if necessary, the discussions might be prolonged.

On motion of Mr. Combs the hour of meeting was changed to 11 a. m.

The Chairman after some pertinent remarks upon the increasing unprofitableness of agriculture, and the slow but sure deterioration of our land under the present system of culture, called for a question for discussion at the next meeting. The following proposed by Mr. Sawyer, was adopted:

"What is the most economical manner of manuring our lands?"

Major Morris made a statement regarding the District Agricultural Society, showing its prospects to be excellent—\$10,000 was already subscribed; \$2,000 of stock was already taken. Over \$1,000 was received from collections for the Chicago sufferers, which was not needed for that purpose; \$4,000 would be appropriated for a premium list which was now being made up. Adjourned to meet at 11 a. m. August 3, 1872

R. T. MONTGOMERY, Sec'y, pro tem.

San Jose Farmers' Club and Protective Association.

The Club met as usual, President Casey in the Chair. The attendance was better than for a few weeks past.

The Secretary read a communication from the Secretary of the State Agricultural Society, recommending that the different Farmers' Clubs send delegates to a Convention to be held at Sacramento, September 23d, for the purpose of organizing a State Farmers' Club. Mr. Ware moved that we send delegates to Sacramento, in accordance with the recommendation. He thought it was a step in the right direction.

Mr. Burgland supported the motion. He said there is truth in the old saying, "In Union there is strength."

Mr. Holloway wanted to wait. We might get ourselves into some entangling alliance.

Mr. York hailed it as a good omen, and a guarantee for the perpetuity of the system of Farmers' Clubs.

Mr. Holloway thought the expense might be considerable, and wanted the matter taken into consideration for one week, which was carried.

A recess of ten minutes was given to allow members to pay their dues, and those desiring to subscribe for Stock in the San José and Alviso Railroad.

The recess proved to be a success.

The Grain Question was next taken up and discussed in different forms; what the Question was did not appear to be understood; finally it was settled by referring to the report published in the PACIFIC RURAL PRESS, the Secretary not being able to produce the minutes.

Mr. Cadwell made an estimate of the cost of producing and marketing 100 acres of grain, the several items amounting to about \$2,300. The value of the grain he estimated at \$3,200, leaving a profit of about \$900.

The expense of a hay crop of 100 acres, he estimated at \$1,700, and the value of crop a little over \$2,000, leaving \$300 profit. He thought the true interest of the farmer lay in doing the work himself, with the aid of one man. Use smaller machinery and take a longer time if need be, and the farmer might save the estimated expense of the crop.

Mr. Hobson was satisfied that the Clipper was the cheapest and best of all machines for cutting grain. A man better work out at low wages till he earns money enough to pay for heading his grain than to try any of the older methods; perhaps we may find a better way; if we do, let us use it. The combined header and thrasher may be an improvement; farmers had better go and see it work. We need improved machinery. The present harvest of California could not be gathered by the old methods.

Mr. Holloway thought there must be a wrong somewhere; things are done on too large a scale. Few men can honestly make money of the labor of others. Men who carry on business

by the means of large machinery, soon find their capital mostly invested in old, dilapidated machinery. Small farmers should change work and do it all between themselves. No man should own more than two hundred acres; cultivate one hundred to grain and hay, and pasture the other hundred, thus the land would be rested. Every man should keep his own pigs, and chickens, and cows, and live independently within himself.

Mr. Chipman had tried all modes from the sickle to the clipper or header, and he found the last the cheapest and best; with lifters it will take up any lodged grain, and it will also work well in mustard that would rack a common reaper all to pieces; all it wanted was proper management. Last year he tried the steam-thresher and thought he had done wonderfully well. They thrashed his crop in less than half a day; he was rejoiced to think how cheaply he had done the work, but when he came to handle his straw he found that much of his grain had gone with the chaff.

In his neighborhood farmers found no difficulty in changing work or coöperating with each other. He had owned machines in partnership with three or four of his neighbors several different times. Now he did not raise so much grain and did not consider it advisable to own clippers or threshers. But he helped his neighbors more than enough to pay for his own harvesting.

Mr. Dubois endorsed what had been said about the clippers, but said their was one abuse in the use of them. They were generally run by men who owned half a dozen or so of half-grown colts, and who insisted on said colts running loose through the grain, which, together with all the wagons and horses, and hangers-on, nearly eat a man out. One year he had a horse-power thresher come to his place, three mares were attached to each lever, and each mare had a half-grown colt, and all the colts had to run to the sacks of grain as they came from the thresher. He objected and the machine man said, come, boys, let us pull up stakes; and they left to the satisfaction of the owner of the crop. He knew a man who had quit raising grain because farmers were abused and insulted twice every year, once by clippers and once by threshers.

The Clipper is the best machine, and farmers must use it till some small machine will do as well, then perhaps we can do our own work within ourselves.

Mr. Holloway did not consider it fair to say a farmer could get his grain clipped and stacked for a dollar and a half per acre, when in addition to that they must board the clippers and their teams, and have the colts run loose in the grain. Should there be a break-down, which there often is, the clippers just about eat a small farmer out. Perhaps to have it cradled and bound is cheaper.

The way for farmers to do is to coöperate, and four or five own a machine and change round to do their own work, then if a breakage occurs each can go home, and the poor man's crop is not all eaten up. Farmers should be independent and self-sustaining. The man who makes money off a small farm, is the one who should be lauded in the newspapers, and not those of big farms who break down in a year or two, like Boddish who was puffed so much.

Mr. Burgland did not believe in going back to the plan of pulling grain or using the sickle, or even the cradle as the last speaker seemed to favor. We have made a great advance by the means of machinery, and what we need is more of it, and of an improved kind.

Mr. Chipman said, in his neighborhood they were never troubled with colts or camp followers, and that his neighbors were always willing to coöperate with each other, and he did not see why they could not have a similar state of affairs in other neighborhoods.

The committee appointed to investigate Mr. Dubois's patent attachment to the mower made an informal report; they agreed that it worked well, and were satisfied that every farmer would soon use the patent. It does all that the inventor claims for it perfectly; separating the cut from the growing grass, no difference how badly down or tangled. Next week they will report in full.

San Joaquin Farmers' Club.

This Club met in regular session Saturday, August 3d, at 2 p. m., President Holden in the chair. Wm. G. Phelps acted as Secretary pro tem. The minutes of the previous meeting were read and approved. A communication was received from the Secretary of the Sacramento Farmers' Club, requesting the San Joaquin Farmers' Club to send delegates to Sacramento on the 23d of September next, with the view of forming a State Farmers' Club. On motion the matter was laid over until next meeting. Several important measures were briefly discussed, when it was observed that the thermometer was about boiling over, and the meeting adjourned.

GAME PLENTY.—Mr. Isaac Cross, who is an old mountaineer and hunter, has been making a cruise out among the Sierra Nevadas. Mr. C. says that the indications of deer are numerous and predicts that that species of game will be unusually plentiful here this fall and winter.

IRRIGATING CANAL.—The Tulare Times says the work on King's River Canal is being vigorously prosecuted, with a fair prospect of an early completion.

AGRICULTURAL NOTES.

ALAMEDA.

Encinal, Aug. 3: ARTESIAN WELLS ON THE ISLAND.—Captain Alonzo Green informed us, on Tuesday last, that an artesian well had been sunk on the Bay Farm Island, for Mr. E. A. Lawrence, to a depth of 120 feet, five-inch bore, which was now throwing out about twenty gallons of pure, soft water per minute. The success of this experiment has prompted Mr. Haley—another land owner on the Island to sink a deeper well, with the hope of getting a flow of about 1,000 gallons a minute. His well will be sunk to a much greater depth, and with a seven-inch bore. The Island is rapidly coming into notice, and the time, we hope, is not far distant when it will be connected directly with Alameda on one end, and a new county road to Alvarado on the other. Negotiations and plans are now in progress to compass these much desired connections. A quantity of stock has been, or is about to be, transferred to the Island for pasturage, which is there far superior to any in the immediate neighborhood.

AMADOR.

Ledger, Aug. 3: VINTAGE.—The grape crop throughout the county has never been more promising in quality and quantity than at the present time—in truth the vines in all our vineyards are literally loaded down with heavy clusters of the delicious berry. The vintage in the county will far exceed any former year, if casks can be had for that purpose. The yield of the present season will prove the great value of our foothills when applied to viniculture. Our other fruit crops except peaches, will be equally as abundant, and all we really need to make Amador county the most desirable in the State to the tiller of the soil, is a fair market for her products—and this will come in good time.

MERCED.

Tribune, Aug. 3: COTTON.—The accompanying letter explains itself, but for the benefit of those who are not acquainted with the writers, we will state that Messrs. Buckley are the largest cotton-growers in this county the present year and are therefore competent to speak of the condition and prospects of this crop. We are glad to learn on such conclusive testimony that the reported ravage of the cotton-fly is foundationless. We are in receipt of a sample of their present growing crop, which in our estimation is as good as could be wished for, and the result of their second year's experiment on a large scale will undoubtedly prove satisfactory.

Editor Tribune.—We send you a sample of cotton from our field which you will find contains over 125 bolls and squares, and is over three feet in height; and, for the benefit of those interested in the successful cultivation of Cotton in California, we will state that our crop at present is looking better than our last year's crop—and in regard to a fly destroying the cotton, we see more of their ravages in print than in our cotton-field. The prospects for a large crop, at present, is most favorable. H. F. BUCKLEY & Bro.

Hopeton, July 30th, 1872.

FIRE.—On Tuesday last about three o'clock in the afternoon, smoke was seen issuing from the fields on the ranch of Norval Douglass near this place. On arriving at the spot the fire was found sweeping between Bear Creek and the railroad track. Fortunately the grain was all cut and threshed, though most of the grain was piled in sacks on the field, and was slightly injured by the fire. Help was plenty, many having gone from town when the alarm was given, and attention only was given to saving the residence of Mr. Douglass, which was in the direct line of the approaching fire. This was accomplished by cross-firing, and the flames were soon subdued. The fire is attributed to some section hands who were firing the stubble along the line of the railroad, and allowed the fire to get beyond their control.

SHIPMENTS.—For the week ending 2d inst., seven hundred and ninety tons of wheat were shipped by rail from this point to San Francisco.

NEVADA.

Republican, Aug 3: FREIGHT.—A large amount of freight from San Francisco, was unloaded at the depot this forenoon. Nearly 100,000 lbs. of the same is for Davis & Gilson, at Spencer's Station, on the south side of Lake Tahoe; 70,000 lbs. goes to Plumas county, mostly to the Eureka Mills Mining Company.

TROUTING.—Supervisor M. L. Marsh and wife, and Miss Carrie Frink, took a boat ride on Donner Lake on Tuesday, and

caught a dozen fine silver trout. Of these, Miss Carrie caught six with hook and line.

HAY.—This article is selling at \$25 a ton in Truckee. It comes from both Reno and Sierra Valley.

SAN JOAQUIN.

Independent, Aug. 3: LARGE RECEIPTS.—There were 10,340 sacks of wheat received and stored at the Eureka warehouse yesterday. It was brought by the steamers "Harriet," "Clara Crow," "C. M. Small," and "Clara Belle," with their barges. This is doubtless the largest quantity of wheat ever handled in one day by any firm in the State.

WHEAT SHIPPED.—Yesterday, J. D. Peters shipped 75 tons by the schooner Jeanette. T. A. Crawford loaded the schooner "Necatine," 145 tons; schooner "Adams," 50 tons; schooner "Clara," 70 tons.

STANISLAUS.

News, Aug. 2: A FRIEND informs us that there is not less than ten thousand tons of wheat on the river banks at Hill's Ferry. At Grayson and Crow's landing there are also large quantities. He thinks at the three points there are not less than 20,000 tons. Owing to the scarcity of vessels the grain is rapidly accumulating along the banks. It is doubtful if one-half the present year's crop of the west side of the river can be got to market the present season.

STILL HIGHER.—The division of our county on the west side of the San Joaquin has done well the present year towards swelling to extreme proportions the grain crop of the State. In fact the yield in that section has exceeded all former calculations. A careful farmer, one who is far from being visionary, assures us, that he traveled over the entire western portion of the county, aided in threshing several extensive grain fields, and that he is now confident that the yield on the other side of the San Joaquin will not be less than twenty-five bushels to the acre. Taking his own individual knowledge of the yield, which has been extensive, and he assures us that the crop will average thirty bushels to the acre; but by making a reduction for poorer spots, he is sanguine he has placed the yield at a low figure as an average for the whole at twenty-five bushels. This would give to that division of our county a fraction over two and a half million bushels of grain. On comparison we find the section referred to contains only about one-fourth of the area sown to grain this year in Stanislaus county. From these figures, and information derived from other divisions of the county, we are preparing to raise our figures from our former estimated yield of the county at six million bushels of grain, to seven million.

SAN LUIS OBISPO.

Tribune, Aug. 3: MORE LIONS.—Mr. Music, a dairyman on the Arroyo Grande, had another fine colt killed and carried off by a California lion, one night last week. Mr. Music tracked the animal up to the place where it had buried the carcass for the purpose of baiting it, which he did. The beast returned on the next night and ate a large, and we hope, a fatal portion of the poisoned flesh. The farmers and stock raisers of that locality have been greatly troubled with these beasts during the last season, having lost a number of the very best of their young stock.

YUBA.

Appeal, July 31: GRAPES.—The grape vines planted on the upland are said to bear unusually well this season. Yesterday we gathered a lot from the vines in Jas. Cook's garden which are very heavily laden with large, well developed fruit. These vines are on as high land as any in this vicinity, and were never irrigated, yet they bear large crops annually.

BARLEY.—Considerable barley is being marketed at present, those farmers who are obliged to sell grain to meet their expenses preferring to dispose of their barley, and store their wheat until better prices shall govern the market.

FINE FRUIT.—Yesterday we noticed one of the finest collections of fruit at the fruit and vegetable depot of John Wesley, in Yuba City, that we have seen for many a day. First we will notice a fine assortment of Crawford peaches from the ranch of Dr. Chandler, magnificent specimens of that luscious fruit. Then a fine assortment of plums, of various varieties, from the ranch of Judge Hurlburt, and a fine lot of Bartlett pears, from the same place, fifty boxes of which will be shipped to San Francisco to-day.

NEVADA.

Enterprise, Aug. 1: WEBBER LAKE.—Jim Orndorff has just returned from a sojourn

with some friends at Webber Lake. From a member of the party we gather a few notes of travel and adventure. The route to Webber Lake is by Hunter's, on the Truckee river, and through Crystal Peak, on the Henness Pass. The party first visited Independence Lake, but learning from Mr. Rhodes, the only resident at the lake, that they would have to row a boat to the head of the lake, a distance of three miles, to reach the fishing grounds, they determined to push on to Webber Lake, situated on the summit of the Sierras and distant twelve miles. They found the proprietor, Dr. Webber, at home. His hotel furnishes excellent accommodation for about seventy-five people. The boys caught trout to their hearts content with line, trolling hooks and spears. The climate of the lake was unusually fine, the air cool and bracing, rendering a fire unnecessary after sunset, and two or three pairs of blankets very acceptable. The woods surrounding the lake are full of game, including quail, grouse, deer and bear. Last week two head of cattle belonging to Mr. Brown, an old Virginian, were killed by grizzlies. On Wednesday last Daniel Webber, with the aid of a swift mustang, managed to lasso a deer a quarter of a mile from the house. The deer had come down with the stock to get salt. The young man threw his rope and caught the deer, but unfortunately, the horse stopping suddenly, the rope broke at the loop and the deer got away. The hotel is crowded with people from all parts of the world, who manage to enjoy themselves immensely with fishing, hunting, picnicing, etc. A large number are camping out. The scenery is unsurpassed, the lake being surrounded by mountains covered with snow.

OREGON.

Sentinel, July, 27: SMOKE AND HEAT.—For the past week the mercury has risen daily from 95 to 106, in the shade. Heavy fires on Applegate and in the mountains north of Rogue river, have filled the air with smoke, making it altogether unlovely and uncomfortable.

BIG GRAIN.—Gray Bros. brought us some of the finest looking heads of White China and Club wheat, grown on their farm in this valley; also, some heads of timothy, measuring from 10 to 13 inches in length.

WASHINGTON.

Walla Walla Union, July 27: FROM YAKIMA.—Mr. H. M. Bryant, who has just returned from Yakima county, informs us that the settlers in that section are in good spirits and are prospering. He says that stock of all kinds is looking fine, and that the crops are good. The farmers are all busily engaged in cutting hay, and will put up a large amount. The country is fast settling up, and the valley is full of stock. There have been a great many claims located there during the spring and summer, and the claimants have gone below to bring up their families and effects. We also learn from a different source that the wheat crop of that valley is estimated at from thirty to forty thousand bushels, and that a grist mill will be completed in the fall. From all indications, the Yakima is a most flourishing county, and is destined very soon to be a wealthy one.

FRUIT.—Just now apples and pears are coming in quite plentiful, and sell at prices that suit the producers better than the consumers. Still they sell readily at good, strong prices. We also see that water-melons and green corn are coming in in small quantities. In another week all these good things will be abundant and cheap in our market, and the green corn "gripe" will be the fashionable ailment.

Silk Worms at Los Angeles.

We have been favored with the perusal of a letter addressed to a gentleman in this city which reads as follows:

Sir:—The silkworm eggs I had obtained by your indication in last March, from Mr. Muller of Nevada, have given to me such a result, that I would hardly believe it, if they had not been hatched and raised by myself. I received from Mr. Muller three ounces, of which I lost half an ounce by accident. From the remaining two and a half ounces I have got (420) four hundred and twenty ounces of the largest and best nourished eggs. The worms were 2½, 2¾ and 3 inches long. The cocoons are the largest, finest, strongest and of the best form and type I ever have seen. Those I received from Mr. Muller as a type, are left far behind or greatly improved. It is my deepest conviction that never was better seed than this I have got at present. The same will be at your disposition at Muller's price, if you have any demand from silk raisers.

R. BONHOMME,

Los Angeles, July 29, 1872.

HOME AND FARM.

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

In books and papers of the day there is no lack of hints and helps for parents who earnestly wish to "train up a child in the way it should go," and the very best thing to begin with is

A Sharp Eye on Ourselves;

Our own little tempers kept well in hand; our own examples such as the coming men and women may safely imitate. We cannot possibly make ourselves too good for this work; nowhere in our lives shall we find another so noble and important; nowhere shall we find a better place to do it than right out here in the country.

Such a little kingdom it is on the farm—father and mother for king and queen—healthy children for loving subjects; for loyal and loving they will be unless the royal pair blundered and made bad work with their domestic budget in the first place. But happily secure from foreign intervention, it is never too late to mend; never too late or too early to look sharply that no slipshod habits of wastefulness, idleness or disorder fasten upon ourselves or the little folks.

In country homes there is such a world of things to do; first, to make a living; next to make the "living" pleasant and nice to have—even beautiful we may make it if we try in the right way. Children have a great deal to do with this; and if wisely brought into their places according to capacity—made to feel that they are important parts of the home machinery, and that certain things depending upon their own little heads and hands must never be neglected, why, all the way along they will be moulding the firm and faithful character that will by and by stand alone and make its own fight in the world.

And while teaching our young farmers to do promptly and cheerily the work that comes to hand in this day and generation, let us never forget that a plentiful mixture of home pleasures and jolly-good times will afford excellent nourishment for the growing "twigs," and help also to sweeten and preserve the tougher fibres of middle age. In these also we can have over again just what we had in the

Good Old Times.

Some of us I fear make little effort to provide our young folks a substitute for the old-fashioned sociability and fun, that went on at singing and spelling schools, quilting-frolics, paring-bees, huskings, and various neighborly gatherings.

Aye, neighborly! That hits us hard, and touches closely one of the grievances of California country life. If we measure our farms by square miles instead of acres, how are we to be neighborly?

Ranching and Farming,

The first word stirs me up the wrong way, skittles through my brain with a melancholy train of dismal and forlorn associations. If friends ask, "How do you like ranching?" the dark side of life instantly confronts me as closely as the question; and whatever dubious or evasive answer may be given, all the shadows look out of my eyes with an emphatic "O, I don't like it."

If on the contrary they ask how I like farming, the bright side comes rushing to the front with its throng of good and gay reasons for choosing the useful prose, the sparkling poetry of country life. So much for the power of a word; and although it may not have such force except in individual cases, there is a secret mischief involved after all.

When a man goes to "ranching" or "roughing" he spoils himself at the start with a vague notion that a big piece of land spread out loosely, under a California sky is sure to catch a big fortune somehow; and with everything hanging very slack indeed it will be all the easier to cut away and drift somewhere else, soon as the money-bag falls down from the sky. If it refuses to fall, then cut away anyhow and try in another direction.

But when a thoughtful man concludes to go farming, we expect then and there to see the roots strike deep—all sorts of roots with useful and ornamental tops; orchards, rose-bushes, homestead, parent-tree, olive-branches, "old oaken bucket and scenes of my childhood." Does it matter to this man whether money-bags fall in a lump? he and his family earn money, but not to hear it chink. Whatever is bright and good in that money goes forthwith into the home and farm, yielding constant interest of comfort and happiness, actually enriching life; what more can money do than that?

All parts of the earth contribute to enrich these lives. Wise men ponder and search for hidden truths of nature; types are carefully set; the sheets are struck and on wings of steam come hurrying with exact knowledge of experiment or suggestion of improvement.

Farmer Greeley

Hastening forward to the White House, carries

kindly and tells us cheaply that if our farms are too big and lonely—divide up—sell portions—secure neighbors, and then finally a church and school-house that will afford ample facilities for turning out future Presidents from our own raw material.

This is good advice and very pat for some whose families are almost wholly deprived of social advantages. Mothers may righteously agitate and disturb the "big ranch" ambition of the fathers, if it dooms the children to grow up "even as the heathen do."

Perhaps there is a plan to move into town presently and educate the children there.

This involves a risk that they will never again have a relish for farm-life or farm-labor; and quite surely this will be the case if their country life has been so neglected as to seem dull and stupid compared with life in town.

Parents who love rural scenes and believe in their pure and healthful influence, meet often the keenest disappointment when the first independent act of the child is to spurn all rustic charms, and launch eagerly into the swift current that pours through crowded streets, and seeks no more the breezy solitude of woods and fields.

If we want our young folks to love Dame Nature, let us take the trouble to show them her beauty and her bounty; share with them her exceeding rich rewards; let them see and feel the sure and swift result of well-directed labor cropping out into actual enjoyments.

The working clothes may be patched and soiled; all right; Dame Nature wears more dirt than anybody, and what a rousing, faithful worker she is! but so dainty and fine in her beautiful garments, all our poets get desperately mixed up with adjectives and heartache whenever they try to sing her praise.

So I am nearly ready to bite off the tip of my pen because I cannot fully express my admiration for the right sort of farmers, and my earnest wish that their children—everybody's children—shall be taught how to work, how to value true manly and womanly independence; also, how to be

Gentlemen and Ladies,

Not the sham article, but the real. Do you whistle at this: "Good-bye to farming, then, if they must be made up into ladies and gentlemen?" Why, we all like to find ladies and gentlemen living on farms—hope they will soon be plenty as diamonds in South Africa, or even in Arizona. Kind hearts, good manners, active brains; that will do; then as much extra polish as each one can afford.

Let us consider. The children are smart, made of the right stuff and will find it out presently; will also find out that you preferred to ignore their scholarly abilities, or refused to allow fair development of intellect from fear it might spoil them for work. But you will lose them now, surely; wide awake at last and hungry for something above the "muck rake," they will hasten to look for their lost opportunities, will carry along also a sense of having been wronged, and by those who should have so studied the whole life question as to give and take fairly in this matter of mutual interest.

Yes, there is no mistake here; the mutual interest of the whole family demands that brain, soul and muscle shall have a "fair show" as we Californians say; and with all the excellent help we can get "cheap for cash" from family journals, private and public libraries, schools, churches, farmers' clubs, pic-nics, festivals and all social agencies within our reach, we need not despair even if the good old times are clear gone forever, and California is "such an awful place to bring up children."

Some of us can have so very little of church and school, yet must not consent to stagnate. No need that the little ones be rusty and uncouth for want of a graded school, or any other high-pressure method of cultivation.

The first-rate family reading—family music too I hope—pictures in books and papers, neat garments for dress-up occasions, well-cooked food, pleasant sitting-room, bright evening lamp, clean, comfortable beds, the blooming garden, growing trees, fine crops, sleek and gentle stock, well kept barns and tool house, everthing inward and outward clear to the line fences and smooth swinging gates—all are educational; let the children be proud of these good things with the safe pride of practical helpfulness, ownership and responsibility.

Then, when self-respect, self-control and physical stamina are pretty well established, let us send them if possible to an Agricultural College where training of head and hand will still go on and a preference for farming, mechanics, or Greek poetry, will meet with proper encouragement.

TAXING HORNED CATTLE.—It is stated that some years ago, in England, they levied a tax on "horned" cattle; a shrewd farmer had a few polled among his herd, which he kept, and sold the horned. When the assessor came round, he told him that he had no horned cattle and would not pay the tax. He was taken before a magistrate, when he proved he did not own a horned animal, and he was discharged. Parliament was forced to alter the law.

LARGE SALE.—Horace Greeley's late work, "What I Know about Farming," has already reached a sale of over 50,000 copies. Although it has brought more ridicule on its author than was ever meted out to any other individual for any published work, it is one of the best works in farming ever written.

THE DAIRY.

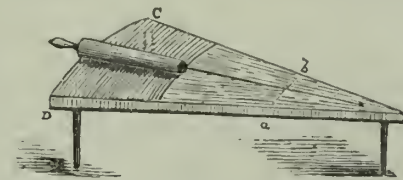
Turnips and Milk.

Many who raise ruta-bagas carefully avoid giving them to milch cows, on account of the peculiar flavor which they impart to the milk and in some degree to the butter. D. G. Mitchell states that all fresh green food given to cows after they have been long fed on dry fodder, imparts a similar flavor, and cites the well known fact that the first baiting of spring grass gives a rank taste to milk. This, however, disappears in a few days, and so he says, it will be in a great degree with turnips. If the feeding is sparingly commenced and gradually increased with a fair intermixture of bran, the effect will be very slight.

Mitchell says: "A little sprinkling of urea in the cans or pans, will destroy the turnip flavor." In addition to these precautions, we have found the common recommendation to give turnips immediately after milking and at regular times, to be very useful. When farmers are beginning to give winter food, to make up the deficiency of grass (which should always be gradually done, and with a moderate increase daily), if they will observe these different precautions, they will have but little trouble, and may feed ruta-bagas continuously to milch cows. We would not, however, recommend heavy feeding with these roots; but a moderate, uniform, and regular supply. Sudden changes should always be avoided for any kind of food and for any animals. The bad reputation which several kinds of succulent food have had with some men, is solely in consequence of heavy dosing at the start.

An Improved Butter-Worker.

We give below an improved design for a butter-worker which has been furnished to the *Rural New Yorker*, by a party who has long used it, and who pronounces it superior to any other with which he is acquainted. The bed-piece should be about four feet long, and two feet wide, from D to C. The roller should be about fifteen inches long and seven in diameter at the



handle, tapering off at the same angle as that formed by the bed upon which it rolls. All parts which come in contact with the butter should be made of some kind of wood which will not communicate its flavor to the butter. Butter-workers of a form similar to the above cut, with raised sides are sometimes used. These sides are not only superfluous, but form angles and recesses into which the butter and butter-milk will find their way, and from which it is difficult to remove them, so as to keep the instrument perfectly sweet and pure. The advantages of having no sharp corners to clean are obvious. No patent right.

LACTOMETER.—The *American Artizan* tells us that Gail Borden, of White Plains, N. Y., whose name is so famous in connection with condensed milk, etc., has been making some experiments for the purpose of determining the correct weight of crude milk. He took the milk of several cows, and mingling it together, and then thoroughly cooling it, he carried it directly to the "U. S. Sealer of Weights and Measures," who measured and weighed the milk by accurate government weights and measures. The result was that a quart of milk, so measured and weighed on delicate scales, was equal to two pounds two ounces and one quarter of an ounce (2 lbs. 2 1/4 ounces). The tests were made with different samples of milk at different times, but without materially altering the weight. Mr. Borden has adopted the above as a true weight of a quart of milk having a fair average quality. Hence any person who buys milk may determine by weight, with satisfactory accuracy, whether he receives a quart when he is required to pay for that quantity.

HOLDING UP MILK.—A writer in the *American Agriculturist* says he has found his cows will always let down their milk when inclined to hold it up if he gives them some salt to lick.

Churning Butter and Puddling Iron.

We take the following from an interesting article under this head, which we find in a late number of the *Milk Journal*:

"It would seem, perhaps, ridiculous to compare the making of iron to the churning of butter, but the parallel is much closer than at first appears. The ore-master crams his furnace with ironstones, hematites, and limestone; the grazier feeds his cow with grasses, roots, and oilcake. The furnace has to be kept alive with blasts of hot or cold air driven by steam, and the horned animal is no less dependent upon breathing pure air and upon a perfect ventilation. The roasted ores of iron, as they pass through the furnace, are freed from the earthy matters of the original ore, and the food of the cow, in its intestinal progress, is similarly rid of all earthy phosphates and silicious excesses. The slag or glassy cinder refuse of the one corresponds therefore to the manure of the other. The ore-master withdraws his sandplugs, and the glistening primitive metal flows to his heart's delight; the cow-master, with as little labor, seeks his opaque white fluid at the udder—both products being the result of chemical elaboration.

When the refiner comes, he first of all melts his lately rendered up iron, and leads it over flat cooled moulds to free the huge ingots from their carbon and oxygen; the dairyman, too, straightway agitates his milk, similarly refrigerates it, and thus rids it of its warm gases and its animal odors. When the ironmaster has obtained the metal from the fiery establishment, and the dairyman his cream from the milk-setting room, neither is always inclined to rest and be thankful. The one could sell his white and gray castings to the ironfounder without working them up into wrought iron, or converting them into fused cast, or welded shear steel, and the other could vend his blue and yellow liquids to the milkman without transmuting them either into butter, into skim-milk cheese, or into cream-cheese.

These proceeds are, however, often required by both. We will suppose, then, that wrought iron and that butter are wanted by the two capitalists. The iron, however, as we last noticed it, is brittle, full of carbon, which it derived from the fuel in the furnace, and which pits it with small holes. The cream, too, is likewise frail in consistency, unable to hold together, is adulterated with much of the casein which rose up with it from the milk, and which speckles it with white flakes. The iron master puts his once refined metal, which has been partially freed from its dross, into a reverberatory furnace, where he seeks to eliminate the remainder of the charcoal fumes, the dairyman pours his milk fat, mostly rescued from its water, into the noisy churn, where he hopes to rid it of the fragmental cheesy particles.

In the ironworks the poor puddler now comes upon the scene, wielding the long rake and poker of the furnace, or twisting the longer tongs which are fastened to the incandescent "blooms," sweating the while, and often faint from his excessive exertions. In the milk-room, the poor country farm drudge, unhelped too often by the newer contrivances of science, comes also on the stage, turning at the everlasting handle of a crank churn, or hoisting the rod of the dash churn, perspiring ever and anon, cursing betimes, and many times exhausted long before the butter finally comes.

"It has long been known that cream put into a cloth bag and buried for two or three days in the earth, will be found when disinterred to be perfectly free from butter-milk. It will not be very cohesive, it is true, but puddling would complete its transformation. For puddling in the furnace is to iron exactly what churning is to milk. The similitude is even closer; for when the iron is taken out of the puddling furnace it has to be what is called 'shingled,' or beaten with ponderous hammers, and the butter when withdrawn from the churn has likewise to be well beaten and worked up.

TO SWEETEN BUTTER FIRKINS.—Before packing butter into firkins, put them out of doors in the vicinity of the well, fill them with water and throw in a few handfuls of salt, let them stand three or four days, and change the water once during that time. If the butter is well made and rightly packed it will keep good all summer. To cleanse old firkins in which butter has been packed and left exposed some time to the air, fill with sour milk and leave standing twenty-four hours; then wash clean and scald with brine. This makes them as good as new.

USEFUL INFORMATION.

How to Destroy Mosquitoes.

A correspondent of the *Scientific American* recommends the following plan for destroying these nocturnal pests:—The strongest crystallized carbolic acid should be placed in a bottle, and covered with the same quantity of strong red codliver oil; shake the bottle thoroughly until a whitish colored foam appears; if such foam does not arise, however, a small quantity of powdered lime should be added, with a little water. Pour the mixture into a dish or other convenient article, and place directly under the open window, as it is from this quarter the mosquito enters.

In my humble opinion, the effect should be explained in this manner: The moment the mosquito enters, it loses the scent of blood; for, as the combined odor of the oil and acid is much more powerful than that of blood, it follows, as a consequence, that the mosquito becomes suddenly perplexed. The consequence is, that after scrambling and skirmishing around in the dark, the mosquito is led, as it were, instinctively into the mixture, where it is either drowned in the oil or burned to death by the acid.

Formerly I was accustomed to smear my face, arms and breast with the strong oil alone, but I frequently arose in the morning smelling so terribly that, though it protected me from mosquito bites, I was happy to lay it aside. I have slaughtered more mosquitoes with the article explained above than ever I could have done with my fists or any other dangerous weapons.

AMERICAN SODA-WATER.—Soda-water was first made about seventy years ago. The credit of the invention is said to be due to Austin Thwaites, of Dublin.

The manufacture of soda-water, and the methods of drawing it, have been vastly improved during the past ten or fifteen years. In few other departments of inventive taste and skill have greater strides been made toward perfection during the period named. American ingenuity seems to deserve the credit of leading the van in this march of improvements, for even the French, with all their skill in matters bihulous and gastronomic, learned something new about drinkables when some enterprising Yankees set up an "American soda fountain" at the Exposition of 1867. The "*soude Americaine a la creme glacee*" was a novelty to the Parisians and their guests, and met with a hearty welcome from all.

A Paris paper in noticing it said: It is really one of the curiosities of the Exposition to watch the representative of every nation on the face of the globe as they make a first trial of the new beverage. The crowd is so great that they are formed in a line by the police, and, first securing checks, take a drink in turn. As many as 4,000 glasses have been sold in one day, much to the satisfaction of the parties in charge. The contrast between the soda as served in the American style and the *eau gazeuse* of the French café is so decided as to make the permanent introduction of the former a certainty.

The American soda apparatus is now in use not only in Europe, but has found its way to far-off Australia, and even to China.

TEETH IN YOUNG STURGEONS.—The discovery announced some months ago of the existence of teeth in the young sturgeons has been verified by another observer, who states that in the young of the sturlet there are ten teeth in the upper jaw and eight in the lower. This illustrates a very striking difference in habit between the young and the old. The latter, as is well known, have no teeth, and are believed to be somewhat herbivorous in character, or, at least, to feed only on sluggish invertebrates, while the former are quite voracious in their attack upon free-swimming animal prey. The precise period at which these teeth disappear has not been ascertained.

ORIGIN OF PEARLS IN OYSTERS.—According to Mr. Garner, in a paper read before the Linnæan Society, the production of pearls in oysters and other mollusks is caused by the irritation produced by the attacks of the minute entozoon known as *Distoma*; and he thinks that by artificial means the abundance of this parasite may be greatly increased. British pearls are obtained mostly from species of *Unio*, *Anodon* and *Mytilus*, but it is probable that all mollusks, whether bivalve or univalve with a nacreous lining to the shell, might be made to produce pearls.

METALLIC SOAP FOR CANVAS.—The following is highly recommended as a cheap and simple process for coating canvas for wagontops, tents, awnings, etc. It renders it impermeable to moisture, without making it stiff and liable to break. Soft soap is to be dissolved in hot water, and a solution of sulphate of iron added. The sulphuric acid combines with the potash of the soap, and the oxide of iron is precipitated with the fatty acid as insoluble iron-soap. This is washed and dried, and mixed with linseed oil. The addition of dissolved India-rubber to the oil greatly improves the paint.

SCIENCE PERFECTING SWIMMING.—Frederick Barnett, of Paris, has patented a novel yet simple apparatus for swimmers. The invention consists in supplying to man by art the apparatus which has been given to the frog by nature. For the hand, he has a large membranous fin which is held to its place by loops passing over the fingers and a strap around the wrist. The surface presented to the water by these fins is so large as to add greatly to the effectiveness of the strokes of the arm, but not so large as to exhaust the muscular power. Their effect is to very much reduce the effort usually required in swimming. But the greatest ingenuity is displayed in the form and fitness of the fins for the legs, which are attached to the ankles, and are so formed that they act upon the water, in the movement of bringing forward the legs as well as in throwing them back. They act so finely in treading water, as swimmers call it, that one can really walk, if not on the water, at least in it.

The difference between swimming with this apparatus and without it, is very much like the difference between rowing a boat with a handle and the blade of an oar. The old swimmer has no trouble in using the fins at first trial, and is surprised to find with what strength he can swim without exhaustion. He easily swims twice as fast with the apparatus as without, and with it he can sustain himself for hours upon the water, or swim many miles.—*Scientific American*.

Will not this invention tend to save human life? We regard the art of swimming something more than a luxury. Every child—boy and girl—at ten years of age should be taught to swim. It is a duty which parents owe to children. We teach them various arts by which to earn a living, why not the art of swimming, by which to save life? In France, every soldier is taught to swim as a part of his military education.

TO REMOVE TAR, TURPENTINE, ETC., FROM OBJECTS.—By accident, I recently discovered a simple combination that will speedily and effectually remove from glass, porcelain, hands, or any part of the body, Venice turpentine, tar, pitch, or any sticky substance of a like nature that will resist warm water and soap. It is entirely harmless to the skin, and yet will remove these substances as promptly and as thoroughly as soap and water will remove common dirt.

All are aware how difficult a task it is to cleanse a graduate after measuring any given quantity of Venice turpentine, or to remove the traces of a rather soft, sticking or other plaster, from the human body. Now to let the "eat out of the wallet," here is the secret in a nut-shell.

FOR CLEANSING GLASS.—An amalgam of the pulverized extract of licorice and oil of aniseed. This seems to combine with the turpentine, and it may then be rubbed dry and clean with a pledget of cotton.

For cleansing tar or pitch from the skin, make a mixture about the consistency of thick cream, and rub on thoroughly with the hand; then follow with a piece of good soap, a sponge, and warm, soft water.

We give you this gratuitously on the condition that you inform us if it does not do what we claim for it.—*Cor. Med. and Surg. Rep.*

COAL TRANSPORTATION.—It would require ten thousand locomotives and two hundred thousand cars to carry the annual product of Pittsburg coal to market, and yet Congress grumbles about making appropriations to keep the Ohio in a navigable state. Do railroad companies grumble at the expenses necessary to keep in proper repair their roads? Estimating the value of the Ohio river according to the transportation it affords, it is the cheapest line that can be sustained, and pays better dividends to consumers in the way of cheaper products than the best railroad stock in the country.

IMPROVED DINING TABLE.—The dining tables of the Oneida community, Oneida county, N. Y., are made double, and the central part revolves. All articles of regular use, such as bread, butter, salt, water pitcher, goblets, spoons, milk, sugar, etc., are placed on this central portion, and persons seated at the table wait on themselves, by turning the center until the thing they want swings around in front of them.

ONE of the most marked organic differences between the sexes is that of muscular action. No one who carefully watches the muscular acts of women will fail to perceive a tendency to do them with a sort of rush, with a superabundance and sudden exertion of force rather than by the gradual application of the precise amount by which the end in view can be secured.

DETERGENT PASTE FOR REMOVING GREASE FROM SILK.—Rub together fine French chalk and lavender to the consistency of a thin paste, and apply thoroughly to the spots with the fingers; place a sheet of brown or blotting paper above and below the silk, and smooth it with a moderately heated iron. The French chalk may then be removed by brushing.

RED ANTS, if made angry, discharge a very pungent acid substance, called formic acid, "formica," being the word for ant. If these ants are distilled, a substance is produced so burning that if it is dropped on the skin, it eats into it like fire. It is also derived from the stinging nettle.

GOOD HEALTH.

Aphasia.

This disease of the memory or impairment of the idea or power of expressing language may be illustrated by the following instances: A gentleman of seventy years, when wishing for anything, constantly employed some inappropriate word. If he desired bread, he asked for his hoots, yet would be furious when these were brought. If he wished a tumbler to drink from, he would call for an utterly unsuitable vessel, and *vice versa*. Yet he was conscious that he used the wrong word, for if another person suggested the proper word he at once adopted it. Sometimes the substitution is applied to a single letter. An instance of this occurred in a learned patient of Dr. Crichton's who substituted the letter *z* for *f*, and, if he desired (*Kaffee*) or coffee, he asked for (*Katze*) a cat. A singular case was that of Madame Hennert, who asked for a table when she wanted a chair, and for a book when she desired a glass, and even when the proper word was suggested she could not pronounce it, yet she conducted her household affairs with accuracy and regularity.

Not only does the defect in question affect the power of speech, but it also extends to the act of writing. The person may articulate fluently and rapidly, using strange words that he has coined, or substituting unsuitable words. He may even know that he is talking nonsense, yet when he attempts to express his ideas by writing he will either write his words in conformation to his use of them or he will write an unintelligible scrawl.

Among other odd examples of this defect is one related by Professor Hammond, in which the person always made the answer *tois* to any question implying the use of figures, though he would correct himself by holding up the right number of fingers. For example, if he meant two, he would say *tois* and hold up two fingers; if he meant seven he would say *tois* and hold up seven fingers; if he meant eighty-four, he would say *tois*, hold up eight fingers and then four. Another gentleman could not recollect the names of his friends, but always designated them by their ages.—*Scribner*.

NOVEL CURES.—The world is full of new cures, and of course they must pay or they would not multiply as they do. We have the water cure, steam cure, botanical cure, lifting cure, grape puncture cure, the spirit cure and infinitesimal pill cure, among others; and although each may have some decided merit in special cases, and the old system of allopathy may be shockingly misapplied frequently, still the main basis of success for most of the new cures must be ignorance and credulity. We often hear statements which we know to be false about the healing of serious diseases, and we are told that abroad remedies are extensively purchased, and that charlatans have large practices. Yet, in spite of all these things, or perhaps with their assistance to some extent, the science of medicine continues to advance.

These ideas suggested themselves to us upon reading that an ozone cure has been started in Germany, and great claims are made for it. Ozone, a peculiar condition of the oxygen of the atmosphere, is said to be a remedy for a multitude of diseases, including cholera, gout, and certain forms of fever and rheumatism, which diseases set in only when ozone is lacking. It is also an antidote for such poisons as prussic acid and strychnine. The method of application has not been made public, so far as we know; and we do not attach much faith to the new cure. But if the opinions and observations published by prominent scientists are correct, ozone deserves very careful study. It is said that the atmosphere at San Francisco has an exceptional large proportion of ozone.—*Alta*.

A REMARKABLE CURE—SKIN GRAFTING.—One of the most remarkable cures on record has been nearly effected upon the person of Miss Hattie Thomas, of Waterbury, Ct., who was scalped in a button manufactory over a year ago, from the nap of her neck to her eyeballs, so that the skull was laid bare. Death was expected, and almost hoped for, as the only relief which could come to her; but the doctor noticing that she rallied from the first prostrating effects of the accident, determined to experiment with the French process of "skin grafting," and after the head was brought into a healthy state of suppuration he made the first attempt, taking the "seed skin" from the patient's arm. The result was admirable, but exhaustion was induced by the new wounds, and a supply of skin had to be taken from other sources. The nurse of Miss Thomas kindly volunteered. The doctor, delighted with his success, applied the knife to his own arm, and many young lady friends came forward and sacrificed portions of their own bodies for the salvation of their suffering sister. Over 150 separate pieces made up the new scalp, and Miss Thomas has souvenirs of her friends, much better than bedquilt blocks or even locks of hair.

ANTIDOTE TO LIQUOR POISONING.—The physician in charge of the Drunkard's Department of Blackwell's Island says that milk or eggs are antidotes for liquor poisons, and those who must drink liquor should mix milk or eggs with their "poison," which will take effect on those articles instead of the toper's stomach.

Action of the Gastric Juice on Calomel.

Professor Tuson has been experimenting upon the effect of the constituents of the gastric juice upon mineral substances, especially those employed as medicines; and for this purpose prepared, first, a mixture of calomel and distilled water containing two per cent. of hydrochloric acid; second a mixture of calomel, pepsin, and distilled water; and third, a mixture of calomel, pepsin, and distilled water containing two per cent. hydrochloric acid. These mixtures were placed in glass vessels, and kept at 100° F. for twenty-four hours, being shaken occasionally. They were then thrown on to filters, of Swedish paper, and the filtrates saturated with hydrosulphuric acid.

The filtrates from experiments numbers one and two remained unaltered, while number three yielded a black precipitate of sulphide of mercury. These experiments, therefore, show that neither dilute hydrochloric acid (two per cent.) nor pepsin, alone, is capable of dissolving calomel, but that when these agents are mixed they do effect its solution, and, consequently, that the digestion of calomel, so far as its solution in artificial gastric juice is concerned, is brought under the same conditions as that of the albuminoids.

These observations are of considerable importance, as illustrating the method by which calomel enters the circulation, so as to exercise the various therapeutical effects which it exhibits.—*Harper*.

VACCINATION AND REVACCINATION.—The following statistics are probably the most reliable and instructive of any of the kind ever published, and are well worth heeding. From an official report made on the subject, it appears that in the army of Bavaria revaccination has been compulsory since 1843; and from that date until 1857—a period of 14 years, not a single case of unmodified small-pox occurred, nor a single death from the disease. Of the nearly 50,000 revaccinations in the Prussian army, only about one-third were perfectly successful—resembling, that is, the result of a primary vaccination so closely as scarcely to be distinguished from it; and the remaining two-thirds being more or less modified, or failing entirely. In connection with these facts, the statement is also made that the distinguished English vaccinators—Dr. Marson, in 40,000 vaccinations; Dr. Sreese, in as many more; Sir Wm. Jenner, in the cases of 13,000 sick children and adults in London; and Dr. West, of the Children's Hospital, as to 26,000 children—all concur by saying that they have never seen any other disease than that of vaccination communicating with the vaccine.

A HINT TO HOUSEKEEPERS.—The main amount of injury done to the tender stomachs of young children, invalids and sedentary persons, by eating had bread day after day from one year's end to another, must be enormous. A cook who cannot make good bread of every description ought not to be allowed house-room for an hour; and that mother is criminally negligent, whatever may be her position, who does not teach her daughter to know what good bread is and how to make it. Alum is used to give whiteness, softness and capacity for retaining moisture. Lime could be employed with equal effect, having the advantage of correcting any sourness in the bread or stomach; besides affording an important ingredient for making the bone strong. Every housekeeper should know how to make two or three kinds of bread.

BED OF GLAUBER'S-SALT.—A deposit of Glauber's-salt has lately been discovered in the Caucasus, not very far from Tiflis. In sinking a shaft the experiments penetrated a bed of pure Glauber's-salt to a depth of five feet, with a probability that the thickness was much greater. In the same region there are various lakes filled with solutions of Glauber's-salt, which furnish the apothecaries of that neighborhood with what they need of that substance, as it crystallizes in perfect purity along the edge of the water.

TO REMOVE WARTS.—Take good indigo, such as is used by the laundress, soak it in water; with a knife pare away the surface of the warts so as to cause the blood to flow. Wipe off the blood and drop the indigo water on them. Very large ones may require a second application. The indigo produces no pain whatever. I have used and recommended this cure to many persons, and have never known it to fail but once.—*Rural New Yorker*.

FOR HYSTERICS.—Carraway seeds, finely pounded, with a small proportion of ginger and salt spread upon bread and butter and eaten every day, especially in the morning and before going to bed, are successfully used in Germany as a domestic remedy against hysterics.

POISON FROM LOCUSTS.—Three children were found dead under a mulberry tree in Lebanon, Ind., a few days ago. They died from the effects of the poisonous matter deposited in the berries by locusts.

A NEW CAUSE OF CANCER.—The physicians of New York report an alarming increase of cancer on the nose, caused by the practice of wearing eye-glasses that are held to the bridge of the nose by a spring.



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SAN FRANCISCO:

Saturday, August 10, 1872.

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ÆSTHETICS.—Received of Payot, Upham & Co. a book, treating of the science of æsthetics, on the nature, kinds, laws and uses of beauty, by Henry N. Day. We know of no science, profession, trade, occupation or pursuit in which man is employed, that would not be rendered more engaging, interesting and attractive by a perusal of this work; so that every man and woman in the land should read it. An extract from the author's preface will be found under head of "Mechanical Progress" in another column.

BEE KEEPERS' MAGAZINE.—This new Work by H. A. King & Co., New York, introducing itself to public favor as an illustrated monthly magazine devoted exclusively to bee culture, we have received.

As an exponent of an exceedingly interesting subject, it is a capital beginning and if succeeding numbers are made equal to the first, we have no doubt of its success, and no hesitancy in recommending it to the bee keepers of the Pacific coast.

CALIFORNIA WHEAT FOR COLORADO.—Messrs. Bryant & Cook, of this city, have commission orders to purchase wheat for parties in Denver, Colorado, and will soon send forward a cargo. The superiority of California wheat will increase its market places as fast as its qualities become thoroughly known.

THE PEERLESS.—Thos. Newell, 124 Clay St., has left us a sample of the peerless potato, raised in Suñol Valley, Alameda Co. When the cultivator harvests his crop we are promised the result.

"FARM HOUSE CHAT."—We hope every one of our ten thousand readers will carefully read or listen to Mary Mountain's "Chat," in this number of the RURAL; for it is just welling over with good sense and beautiful truths.

Editorial Notes Among the Farmers.

We invite our readers to continue our trip among the farmers of Santa Clara valley and to commence at the farm of Isaac Bird, located but a few miles from San José, on a tract of land called the willows, from the fact that it was formerly grown up with willow brush and was counted of but little value.

Hops.

Mr. Bird is one of the pioneers of the State, in the cultivation of hops, and is probably as well skilled in the business as any other man in the State. He planted his first roots in 1860 and although they made a fine growth and produced well and of good quality, he could find no buyers at any price. So great was the prejudice of brewers against the California product that they would scarcely look at them, much less give them a fair trial, to test their value. After producing two or three crops and finding no market, Mr. B. gave up the business as a bad undertaking and dug up his roots, and turned his attention to other industries. We mention this as one of many illustrations of the foolish prejudice entertained by our people against products of our own State, when they come in competition with the imported article. Our new products have to make their way against this senseless prejudice and also against the more potent difficulty, the interest of the importer. Our wine growers are now in the midst of a contest against these two enemies, but as the hop men have signally triumphed and won a place and character for California hops, equal to the best in the world, so will our wine growers succeed and in a few years our wines will class with the best of European. Our silk growers may also take heart and see in the final success of hop culture the road open to a greater success for their favorite industry and those who dug up their trees in 1871, may be replanted before 1878. Mr. Bird replanted his land to hops in 1867, and now has 38½ acres in the vines. He prefers the horizontal system of training, which consists of poles about 7 feet high above the ground with twine stretched from pole to pole in every direction, to the long pole system, which consists of poles from 12 to 15 feet long without the twine. Hops trained in the horizontal manner produced about 25 per cent. more last year than those on the long poles, soil and all other circumstances being equal. Mr. B. is attending his hops in person this year to observe the effects of experiments he is carrying on, to learn the particular systems of pruning and training best adapted to different kinds of soil.

It has been, and is now the system of most growers to cut off the surface runners that come up from the roots after the main vines have been trained on the poles so as to send more vigor into the main vine, but Mr. B. has proved by repeated experiments that this object is accomplished much more successfully and a more vigorous growth is secured to the main vine, and a fuller and better crop is secured by covering these surface runners up with earth as often as they make their appearance. By this operation he claims that the sap of the surface runners is thrown back into the main vine and thus a better developed and heavier crop secured. Hops are now worth in New York from 30 to 70 cents a pound and it is expected that our producers this year will receive a very high and paying price—say from 50 to 75 cents. Our next visit was to the

Nursery of S. Newhall,

Just across the way from Bird's. Here we found 12 acres in the highest state of cultivation. Mr. N. commenced on this land but three years ago and at that time it was covered with a dense growth of willow brush. He has raised and sold three crops of trees and has now in his nursery over 40,000 trees, embracing nearly all varieties of fruit grown in the temperate and tropical climates. Also a large number of shade and ornamental and nut-bearing trees of nearly every variety known. We saw here the beautiful tulip or white wood tree of the Eastern States, also the linn or American basswood, growing in splendid style and as natural as life. The same land that these trees are growing on, in the nursery is planted with standard fruit trees. Four acres of bearing cherries, six in apples, many bearing, and two in plums and peaches. He also has a large patch of blackberries and strawberries in a most excellent bearing condition. So one may safely say that of the 12 acres under cultivation by Mr. Newhall, all are fully occupied. One thing, how-

ever, we noticed, was not so—his house. He is an Old Bach.

Our next stopping place was at the home of F. Sanderson,

Who has under cultivation, principally in small fruits, 9½ acres, three acres of which, the early Franconia raspberry, yield on an average three tons per acre. He sells these berries at an average of 14 cents per pound; thus the income per acre is \$840. He has also three acres in currants, which also bring a good income. Mr. S. is also in the nursery business, but makes a specialty of nut-bearing trees, of which he has over 20,000 growing.

Probably the most extensive orchardist and nurseryman in the county is

B. S. Fox.

We had been informed that Mr. F. was absent from home, but we were unexpectedly and very agreeably disappointed in finding him at home.

Mr. Fox is a business man, so we went immediately to business, and the first thing was to set down to and enjoy an excellent dinner. This done we walked through the orchard, which we found in an excellent condition. It covers about 75 acres, two-thirds in pears, and the balance in apples and plums. The fruit from this orchard has been sold this year to L. A. Gould, on the trees, for \$4,500.

In the nursery we find almost every variety of tree, fruit and ornamental, cultivated in the State. To name them and give the number of each kind would take too much space, but will say that the whole number in the nursery cannot be less than half a million, and that should any number of trees be wanted, and if they cannot be found anywhere else in the State, you will be sure to find them in the nursery of B. S. Fox.

Having expressed a desire to see and learn something of the

Strawberry Business,

Our traveling companions determined to call at the farm of S. L. Broughton, three miles from town. Mr. B. has 65 acres in all—20 in strawberries, 12 in apple, pear and peach orchard, and the balance in vegetables, hay, etc. Our first point made was the strawberry field. The berries are planted in rows—say two rows of berries about 18 inches apart—each row on the outer edge of a ridge of about that width, and a foot high. Then comes a space of say three feet, slightly excavated, in which is kept constantly, or nearly so, during the dry season, water from the artesian well. Then two more rows of berries and another three-foot space and water, and so on. It is hardly necessary to say the vines were growing luxuriantly and bearing abundantly—and the berries luscious. The kind principally cultivated in the valley is Longworth's Prolific.

Mr. B. rents his strawberry land to Chinamen in this manner. He furnishes land, plants and water. The Chinamen plant, cultivate and pick the berries and deliver them to him. He markets the berries and divides the proceeds equally. The gross receipts this year from the twenty acres of berries is \$6,400. Net receipts to Broughton, \$3,200, or \$160 per acre. It will be seen that this is really for the rent of the land, as the cost of marketing the berries is but a trifle.

For the fruit growing on his 12 acres of orchard he has been offered and refused \$1,000, the buyer proposing to take them on the trees.

Ten acres of this farm is in asparagus, and the average yield per acre per annum is \$150 gross—net about \$120 per acre.

We are informed that there is in the valley about 600 acres in strawberries, and that the most of this is rented to Chinamen upon the same terms as that of Broughton, and that his is about an average yield.

Thoroughbred Stock.

Santa Clara county is becoming noted for its fine horses, cattle and sheep, but we had not time at this visit to call on but few of the owners. We shall make it our business to see them at the County Fair. Mr. Quinn, who is engaged in farming and dairy business, has of late years been improving his dairy cows by breeding to Durham bulls. He has now five thoroughbred cattle, two cows, a two-year-old bull and two heifer calves. They are all very fine animals—originally from the herd of Col. Younger. He has twenty head of very fine graded animals from ½ to 15-16 Durham, and gives his testimony strongly in favor of the Durham as dairy cows.

Col. Younger's Herd.

The largest herd of thoroughbred Durham cattle in the State belongs to Col. C. Younger, who has been our traveling companion while

we have been taking these notes. The Col. resides one mile from the city of San José, on the Alviso road, and has a farm most admirably located and adapted to the business to which he is devoting it. He is the only man in the State who is making the breeding of Durham cattle a specialty, and of all men we have met he seems the best calculated to make the business a success. On this subject he is a thorough enthusiast, and yet he has studied the subject so well, and had so much practical experience in it, that no amount of enthusiasm can warp his judgment. To him above all other men in the State is due the credit of holding firmly to the business, and keeping right along increasing his herd in numbers and improving them in quality when others have become discouraged, and abandoned the business in disgust, complaining that the people of California could not appreciate the difference between thoroughbred Durham cattle and the meanest Spanish scrub with which the country was formerly filled. Very much credit is due to Col. Younger for persevering until, by his efforts, a more correct public sentiment has been created in regard to the real value and merit of these cattle. For that perseverance he is now reaping the reward. He has already sold this year \$5,100 worth of cattle from his herd at most satisfactory prices, and has now on hand fifty-eight head that will compare favorably with any herd of its numbers in the United States. As the Col. intends making a large exhibition of this stock at several of the district fairs and the State Fair, we will not speak of any of them individually but will say in general terms, that those who like to see good stock will do well to look them up.

Silk Culture.

An interesting article will be found in our columns this week on silk growing, from Felix Gillet, of Nevada City. Mr. G. makes mention of the failure this year of parties in Napa Valley, that their worms died in their "fourth age." The eggs were obtained of Neuman of San José. Since their failure the same parties have secured some from Nevada. We shall hope to hear of a better result, but have little faith in the successful culture of the silkworm, where the thermometer indicates a heat of 95° Fah. during the last half of the age of the worm.

Mr. G. attributes the failure of silkworms in the lower valleys to the bad quality of the eggs and the food, of crowding together too many worms in a room and a lack of proper ventilation arising from feeding the worms on common flat boards and possibly a heat above 80° Fah. We consider 90° to 95° the maximum and more than that, as fatal to silkworms. Mr. G. thinks the only way to success to be, the procuring of the eggs from the mountains where they are known to be healthy, and the practice of a better system of ventilation.

ARBITRATION COURTS FOR LABOR.—A GOOD IDEA.—At last there is a probability of a settlement of the trade disputes in Berlin, which have caused so much suffering and so lengthened cessation from labor. Permanent courts of arbitration, to which all matters of disagreement between employers and workmen are to be referred, will, it is hoped, prevent future strikes by removing their cause. The establishment of such courts in all large centers of population might be made productive of a vast amount of good, both to employers and employed, if they could be so organized and conducted as to secure the confidence of the community.

City Cocoonery.

On Tuesday evening last, we called on the indefatigable Neuman, at Bancroft's building, on Market street, to take a look at his cocoonery, established there for the purpose of demonstrating to the citizens of San Francisco the entire practicability of silk culture when properly conducted.

His worms, which are in all stages of growth, from the egg to the condition of spinning their cocoons, seem perfectly healthy and in a fair way to success. The process of reeling the silk from the cocoons was also shown, by a young lady, evidently an adept at the business. Specimens of reeled and manufactured silk of California growth, are a prominent and interesting feature of the exhibition, the whole making a display quite worthy of a call from all who feel interested in the extension of this important industry. The hall of cultivation can be visited by the public, day or evening.

COMPLIMENTARY FROM KANSAS.—We have received from Alfred Gray, Secretary, a Complimentary Card, inviting us to attend the Eighth Annual Exhibition of the Kansas State Board of Agriculture, to be held at Topeka, Sept. 16th to 20th inclusive.

A New Cotton Pest.

EDITORS PRESS:—I enclose you specimens of fly which is doing serious damage to the cotton crop of this vicinity, and as they are new to me as well as to others, would like your opinion of them.

Their depredations are not on cotton alone, but on everything that puts forth a tender bud; even the oak, ash, box elder, in fact, everything. They are particularly fond of sour clover and alfalfa. I have 12 acres of alfalfa with scarcely a bloom, and no seed. I first noticed them on the Irish potatoes in May by seeing the buds droop.

They are inclined to be sluggish, and when you approach them will dodge under the leaf. I have been told by a Mexican that he has seen them in Mexico, but they only appear in 8 or 10 years. Yours truly, J. M. STRONG.

We herewith give our readers an accurately drawn illustration of this insect pest which threatens serious injury to the cotton crop in California. It is enlarged to three times its natural length and width. For an entomological examination we referred the insect to Mr. C. H. Dwinelle, of Oakland, who reports to us as follows:

I have examined the insect which Mr. Strong sent you, and am sorry to say that I have not been able from the books at my command to determine their species. They belong



to the group of insects known to naturalists as the Hemiptera. The name means half-winged, and is descriptive of the appearance of the upper wings, half of which appear to be solid and the other half transparent. The mouth parts are formed into a sucking tube, which is easily seen in the specimens sent by Mr. Strong, and also in the common squash bug.

From descriptions and cuts given in some of the works on insects, the pest which is troubling our cotton plants must be closely related to the Chinch bug, which is often so destructive in wheat fields. It does its mischief by sucking out the juices which should go to nourish the growing parts.

The insect in question is a true bug and not a fly.

If Mr. Strong will send me a number of the bugs, enclosed in a small vial of alcohol, I shall be glad to send them to professional naturalists, who may be able to give information that would be interesting and perhaps useful.

GAMBLERS INTERFERING WITH FARM HELP.—We are told by a resident of San Joaquin valley that during the harvest season, a pack of the lowest kind of "black legs" have scattered themselves along the towns on the railroad for the purpose of fleecing the laboring men out of their wages as fast as paid them by the farmers. Help being scarce this season, grain growers have had to take all kinds of help that offered. Many of them would drink and gamble on Sunday, sober off on Monday and come around Tuesday demanding higher wages. Since the commencement of harvest some ranches have been obliged to advance the pay of such men from \$2 to \$2.50, then to \$3, and in some instances to as high as \$3.50. It is a prevailing opinion that the non-laboring gamblers, after "milking" them, advised this course to furnish more funds for their final "strippings." In the end the laborer has nothing left, is discouraged, and "disgusted with the country."

PEERLESS POTATOES.—Mr. Chas. Nichols, of Fruit Vale, after several unsuccessful attempts to raise different kinds of potatoes on a piece of partially adobe land, succeeded admirably this year with the Peerless. Other varieties, planted under the same conditions, have hitherto commenced sprouting and sending up new vines as soon as the new potatoes were formed. His neighbor, Capt. Levi Stevens, informs us he has had the same experience.

Here we see the good effect of an occasional renewal of our varieties of potatoes by producing them from the seed. In many old, long cultivated varieties we find the potato, from repeated reproduction from the tuber, weakened in its vital forces and unable to perfect itself under the influence of our forcing, because highly electrical climate, which acts with powerful effect upon the vegetation principle of all our plants, and in many instances forcing them to an early and precocious growth; whilst new varieties, with all the vigor incident to a new and perfect organism and development, are able fully to perfect themselves.

Trichina Spiralis.

A great stir is being made because the trichina has been discovered in a Chicago ham at San José. There is probably no doubt as to its being the true trichina spiralis, an animal that, if it once gains admission to the human stomach, is pretty certain to cause inconvenience, if not death, sooner or later. It is ascertained that in two days after their introduction into the stomach they attain their full sexual maturity, and in six days after the young are disseminated by millions through every part of the muscular system.

The young trichina, as they are found in the human muscle, appear as represented by figure 1 in our illustration; as a worm coiled up in small oval or elongated cysts, barely visible to the eye.

The perfect worm, fully grown, represented by figure 2, rarely exceeds the two-hundredth part of an inch in length, so small, indeed, that a single ounce of flesh has been estimated to contain 325,000 trichina; and yet their countless numbers produce the terrible disease called *Trichinosis*.

The numerous outline figures of our engraving are merely to show the various positions they are found—by aid of the microscope—to assume while occupying each its own distinct



TRICHINA SPIRALIS.

cyst or pouch imbedded in the flesh. The hog seems to be the animal most likely to be infested by this nematoid or thread-like worm, being conveyed to the stomach in the filthy garbage often fed to this animal.

Prof. J. B. Edwards, at a meeting of the American Association for the Advancement of Science, held in Salem, Mass., stated, that if meat containing trichina is heated to 212°, the boiling point of water, the worms will be effectually killed, and the meat will not injure the consumer.

Prof. Agassiz followed by saying, he hoped the appetite of the community would not be disturbed by this scientific discussion, as such worms are present in all meats and even many vegetables, and there is no danger if they be properly cooked.

But so far as our people are concerned, as the trichina has never yet been found in California cured ham or bacon, we would recommend its exclusive use in preference to any, in regard to which a suspicion may rest. California ham and eggs will continue one of the staple breakfasts of the *genus homo* of this coast for a long time to come, but to those who may prefer the Eastern article, our advice would be to call for it well cooked.

COFFEE TREES.—"A Farmer of Butte County," wishes to know where he can obtain coffee trees or seeds. We know of no trees in the State for sale. The seeds if more than one year old will seldom vegetate; therefore don't buy now, but next winter there will be a lot of fresh coffee seeds for sale by one or more of our city seedsmen.

Silk Culture—Its Future and Success.

EDITORS RURAL PRESS:—In a late number of the RURAL, I noticed very sensible remarks from you on silk culture, and I would like to see all silk growers in the State taking heed of them, so as to not only keep your paper well posted on this interesting branch of agriculture, but at the same time let others profit by the result of their labors and observations.

By advising people, as you do, to be cautious in starting into a business they know nothing about, you act most wisely, for nothing did hurt more silk culture in California than the manner the press spoke of it in the past. Glowing accounts of immense profits said to have been made by one or two men in raising silkworm eggs, led many people to disappointment and discouraged them on the very start, therefore I say,

Away With Speculation.

And better for sericulture to have all such establishments as that one at Daviesville, which burst up last year, be done away with. Speculators by taking hold of this industry, came nigh killing it in its bud; so let us try ourselves, but not losing sight of the fact that silk culture is yet in its infancy, and that there are a great many difficulties to be overcome.

I do not pretend to be much wiser and smarter than other people; however, as I have engaged in the business of mulberry planting and silk raising in a cautious and practical way, I have a right to expect the experience I have

that at spinning time they climbed up to the very ceiling of the room, a feat seldom witnessed now-a-days in the silk districts of Europe. So I earnestly believe that I have got in these two varieties,

The Japonica and Rose-Leaf,

The very best food to be had for silkworms; this is a point I regard as gained. This letter is already too long to permit me to speak of the immense advantages of cultivating both kinds in preference to all others, especially the small leaf one, as most of our plantations in California are made of. To make the business pay, we must save labor, keep the variety that yields the most by the acre and which propagate the quickest. All of these requisites I have found in the Japonica and Rose-Leaf varieties.

However, the main question in rearing silkworms, whether that is done with this or that leaf, will it pay? really, that is the question. To answer the query well, I must consider the question as put more particularly to cocoon raising, for parties might make considerable money in selling silkworm eggs here and abroad while others could not; then we cannot rely on the egg trade. Now I do not believe I am too rash in affirming that

It will Pay.

And pay pretty well if we think of the short time spent in rearing the worms, and the chance people would have of employing women and children. I say it will pay, because the farmer who can in forty days clear from 20 to 200 dollars, with a few trees and the help of his family, and without disturbing him in his daily occupations, cannot say otherwise, but that it is money easily gained. How much time and hard work would it take him to clear as much in raising wheat, hay or any other produce? All can answer it readily. I will not for the sake of selling them trees, tell our farmers that they can clear two thousand dollars an acre, by raising silkworm eggs, that's all humbug, and we have got enough of it. I say it again, there is no reliance in the egg trade, and people had better rely only on the production of the raw material, that is cocoons. As I said in a late letter published in the RURAL, all we need now to give an impetus to silk raising, are reeling establishments, where cocoons could be bought in small lots. But that will come along, too, in its time. As to large plantations and cocooneries, that is silk raising carried on a large scale, when done properly and in a suitable district, the business would certainly be a paying one, considering the high price of silk; however, I believe it to be a better plan to go at it by degrees; that is what I am doing this year; I have been

Raising Silkworms

Of three different varieties, viz: the Alps Yellow, Riom, Pale Yellow, and old California French annual of Prevost, the two former ones, the Alps and Riom, cannot be beaten; they were sent to me from France as belonging to the finest races; those very ones that succeed there no more, and which silk factories are trying to have raised elsewhere, and save them in this way from the general wreck.

The result of my education (word used in Europe for rearing of the worms from hatching up to spinning time), was splendid. The Alps variety seemed to be the most vigorous of all; the worms are large and all striped across the body; they spun cocoons of a middle size but very hard and of a fine silk; they varied in color from a rather bright yellow to a pale tint. Pale yellow, you will know, is the most preferable color of all.

The Riom race gave worms of a large size, too, but with white skins. They spun cocoons of middle size, having exactly the shape of a peanut, and all of a pale yellow. Likewise they were hard and the silk very fine. As to the California-French, of Prevost, the race mostly raised in California, the result was different and not so good. The cocoons, it is true, were large, but weak to the finger; varying in color from a bright yellow to green and white. Besides, they had an unusual number of doubles, (two worms in a cocoon) as much as 7 per cent., while the two other races, the Alps and Riom had only one double on one thousand.

I met so far with a very nice success, and hope that in keeping on in the same cautious way, I will be able to succeed on a larger scale as well as I did this year on a smaller one. I turned all my cocoons into eggs.

Before closing up this letter I will answer a little query from you, viz: whether we have the best kind of leaf for feeding, or owing to our too hot climate, it is not too dry and crisp, and dries too quickly on being fed to the worms. The first part of the paragraph I have partially answered through this communication; as to the second part, I have to say that the climate is not too dry, indeed I have fed my worms when the thermometer marked 96°, and not only did not the leaf dry or crisp, but the worms would not give it time to dry or crisp; that is, the leaves I used (Japonica and Rose-Leaf) were not at all affected by the heat. But I believe that some inexperienced silk growers give their worms too much food at one time, so that what was not eaten up had, of course, to dry and crisp.

You will excuse the length of this letter, yet I hardly believe I could get it much shorter. At some other time I expect to write you a few words on the silkworm egg trade, a very important question at this juncture, considering the continual failures all over the silk-raising countries of Europe and Asia, in raising the old, fine, yellow races, obliging them to buy the whole of their eggs from Japan, for the little yearly consideration of four millions of dollars.

Yours, very truly, FELIX GILLET.
Nevada City, July 26th, 1872.

acquired and the experiments I have made, may be of service to my confreres in silk culture, besides throwing some

New Light,

On what can be regarded as the nicest and most interesting of our industries, to be certain to make no mistake, I have been careful to take the advice of old practical silk culturists in my own country, France, subscribed to our silk organ, bought the best works on mulberry planting and silkworm raising; in fact, I went theoretically and practically, studying it and practicing it all the time; this I thought to be the only rational way to proceed, to know well a business before starting in it. Then when I speak of it, you may be assured that I know what I am speaking about.

All our old and modern authors on sericulture, all our most intelligent silk growers, are unanimous on this very important point, that "quality of the leaf" is the

Corner Stone of Silk Culture,

The condition *sine qua non* to a successful education or rearing. This struck me, and all my attention was then turned towards finding the best food to be given our worms in California.

But here the question is already dividing itself in two, for trees that will in the mountains yield a wholesome food, will not in the valleys; so that what may apply to our hills, will not to our bottom lands, the variety of the mulberry tree used will not consequently constitute by itself a wholesome food, soil, altitude, pruning, etc., have much to do with that particular requisite.

On my plantation, I have most all varieties of mulberry tree represented, seven all together. I cultivate, however, more generally the Morus Japonica (wild) and the Rose Leaf (grafted) both of the alba family; the worms being fed in the first four ages with the wild Japonica Leaf, and in the last and more important age with both the grafted and Japonica; these two varieties bear very large leaves, and gave me some of the nicest cocoons ever raised in this State, the worms fed with it were so healthy and vigorous



Her Sphere.

BY ELIZABETH AKERS ALLEN.

No outward sign her angelhood revealed,
Save that her eyes were wondrous mild and fair;
The aureole round her forehead was concealed,
By the pale glory of her shining hair.

She bore the yoke, and wore the name of wife
To one who made her tenderness and grace
A mere convenience of his narrow life,
And put a seraph in a serpent's place.

She cheered his meagre hearth—she blessed and warmed
His poverty, and met his harsh demands
With meek, unvarying patience, and performed
Its menial tasks with stained and battered hands.

She nursed his children through their helpless years—
Gave them her strength, her youth, her beauty's prime;
Bore for them sore privation, toil, and tears,
Which made her old and tired before her time.

And when fierce fever smote him with its blight,
Her calm, consoling presence charmed his pain;
Through long and thankless watches, day and night,
Her fluttering fingers cooled his face like rain.

With soft, magnetic touch, and murmurs sweet,
She brought him sleep, and stilled his fretful moan;
And taught his flying pulses to repeat
The mild and moderate measure of her own.

She had an artist's quick, perceptive eyes
For all the beautiful; a poet's heart
To every changing phase of earth and skies,
And all things fair in nature, and in art.

She looked with all a woman's keen delight
On jewels rich, and dainty drapery,
Rare fabrics and soft hues—the happy right
Of those more favored, but less fair than she;

On palid pearls, which glimmer cool and white,
Dimming proud foreheads with their purity;
On silks which gleam and ripple in the light,
And shift and shimmer like the summer sea.

On gems like drops by sudden sunlight kissed,
When fall the last large brilliants of the rain
On laces delicate as frozen mist,
Embroidering a winter window-pane.

Yet, near the throng of worldly butterflies
She dwelt, a chrysalis, in homely brown;
With costliest splendors flaunting in her eyes,
She went her dull way in a gingham gown.

Hedged in by alien hearts, unloved, alone,
With slender shoulders bowed beneath their load,
She trod the path that Fate had made her own,
Nor met one kindred spirit on the road.

Slowly the years rolled onward; and, at last,
When the bruised reed was broken, and her soul
Knew its sad term of earthly bondage past,
And felt its nearness to the heavenly goal,

Then a strange gladness filled the tender eyes,
Which gazed afar beyond all grief and sin,
And seemed to see the gates of Paradise
Unclosing for her feet to enter in.

Vainly the master she had served so long
Clasped her worn hands and, with remorseful tears,
Cried: "Stay! oh, stay! Forgive my bitter wrong—
Let me atone for all those dreary years!"

Alas, for heedless hearts and blinded sense,
With that faint welcome and that meagre fare,
What mean subjections, and small recompense,
We entertain our angels unaware.

Home and Family.

EDITORS PACIFIC RURAL PRESS:—Among the various subjects discussed by your correspondents no one has interested me to that extent, and no sentiments could more fully coincide with my views and observations of the subject treated upon, than "Farm-House Chat," published in the *RURAL* of May 25th, which so truthfully illustrates the relative social position occupied by a large proportion of the wives and mothers of our land; a subject which should command the serious attention of every well wisher of the future welfare of our country; for if, as is generally admitted, its prosperity depends mainly upon the morals and education of

the rising generation, when we take into consideration how much of the care and responsibility is left for mothers to perform, it is a constant wonder and surprise to me that men can become so completely absorbed in a blind and selfish grasping for present wealth and power, that they will allow prejudice and self-conceit to warp their naturally better judgment, until it assumes the form of a hateful tyranny over their families, especially the life partners of their sorrows, if not their joys, who should not only be treated as equals, whose every reasonable request which would add to their convenience and happiness, should be carried into effect, but others, if necessary, suggested to cheer the dull monotony of a constant routine of daily business, too often only relieved by the trials and vexations incident to the cares and training of a family of children, that they may become not only useful ornaments to society, but an honor to the future of our country.

Home Tyranny.

I hate tyranny in any form; but, most of all, do I despise this petty home tyranny, which the law fails to reach; where justice and mutual rights are unrespected, where the stronger holds absolute despotic sway over the weaker, regardless of the happiness of the latter; that this, in a greater or less degree, is the case in a large proportion of families, no intelligent observing person will deny. Human nature is about the same everywhere, and, although I have not as yet assumed the responsibility of becoming a self-constituted ruler of this class, I have not failed to notice this usurpation of unlimited authority by fathers of families in my travels north, south, east and west, and while it continues, and wives and mothers are wearing away their unhappy lives, children of the present generation will necessarily be neglected, and future generations will deplore that neglect, as they look backward and become sensible of its effect upon their well being, as well as the destiny of our Government and institutions.

Farmers' wives especially who are isolated from society, and whose duties, if constant, keep them within doors, whose only hope of happiness on earth, in many cases is centered in their own families and homes, feel more keenly undue restraint, or lack of appreciation of life-long services rendered, than others who mingle freely in society and places of amusement; and while I admit that some wives are unworthy of their husbands, yet, any man who deliberately induces a girl to leave a comfortable, happy home, to enter into a life partnership with him through the institution of marriage, and fails to respect her rights as an equal ever after, (unless there has been an express understanding to the contrary) who is unwilling to bestow those little attentions and favors so highly prized by the opposite sex and go far towards making up the sum total of happiness, who assumes unlimited control of property and children, irrespective of her wishes, in short, who fails to use all reasonable endeavors to better her former condition is a disgrace to the marriage institution, a tyrant, a usurper and a fraud.

The Door of Escape.

I can scarcely conceive a more humiliating or discouraging condition for a refined and intelligent woman to be placed, than to be bound for life to a drunkard, a coarse, uncongenial companion, or, as is often the case, one too self-conceited and overbearing to consult the wishes or judgment of a woman, especially his wife, whose intelligence, education and business capacities may be superior to his own, and whose only door of escape is death, and whose only hope of happiness or recompense is based upon the uncertainties of a hereafter.

However happily the author of the article alluded to may be situated, I hope and trust that so long as she can wield a pen in defence of the right of her sex, she will not fail to do so, until this worst, if not only relic of slavery in our country is blotted out; and she can rest assured that her efforts will be approved by all impartial lovers of justice and right of both sexes and although she truly says, "perhaps the majority of married women are indifferent to political power because they know that it cannot assure them the simple, personal rights that depend wholly upon the large good nature and good sense of the two individuals bearing the same yoke," and "the hard and selfish woman is not made a whit more tender because of the political power her husband wields."

The Ballot.

The harsh and arbitrary will of man can never change to soft and lovely flexibility at the flutter of a ballot in the wife's hand," yet the ballot might remove legal inequalities; and I cannot better express my sentiments than by quoting the following from E. B. Foote, author of "Plain Home Talk, and Medical Common Sense," a book by the way, which, however plain it may treat upon subjects of vital importance to both sexes, should be read by every family in the Union.

In treating upon the health in connection with the degradation of women of past ages with rights withheld he says: "But let no man who suddenly awakens to this injustice, suppose in his arrogance that he can give woman her rights. The very fact that men talk of allowing women this or that liberty is evidence

in itself that authority has been usurped. As well might a pickpocket talk of giving a portmanteau to somebody from whom he had clandestinely filched it. I tell you, reader, women have no rights to give to women, she possesses naturally the same rights as we do. If she does not enjoy them, some one is a robber. Who is the thief? Let him make full restitution with the full understanding that he is entitled to neither reward nor thanks."

In my opinion a more truthful or manly sentiment never emanated from the pen of man; and so long as I am entitled to a freeman's right to vote and wield a pen, it shall be in defense of the rights of the "weaker and better portion of creation." I herewith forward for publication a selected poem entitled

Her Sphere.

Lines most touchingly tender and beautiful, descriptive of the sad fate of many a patient uncomplaining wife and mother, who, worn out and overburdened with cares, have "died before their time." He who can read this poem unmoved, cannot possess the soul of a man; and even if the author had never written anything else, this should immortalize her name.

Yours for truth, justice and right, I. A. H.
Colfax, Cal., July 28th, 1872.

Old Age.

Age is the night of life; night is the age of day; but, nevertheless, it is full of magnificence, and for many beings it is more brilliant than the day. Infinite are the relations between age and night. It is in God that we must contemplate the one, as it is in the heavens that we must study the other. See whether for its dear stars the heavens have any seasons. See the night of age; it, also, is strewn with stars, and even as the heavens the old man has nothing to do with seasons; the world of vicissitudes tosses and struggles at his feet, the impassiveness of the firmament is his.

Let him withdraw himself to the depths of his pious thoughts, there space does not fail him. Let winter strike this world below, the heavens are always blue and each diamond is a world. At times, in the prolonged night at the poles, a light appears which resembles the aurora, and, in an instant, dissipates the gloom; thus with the aged man, instinctive illuminations, as if belonging to a new world strike upon his eyes. The hours of night do him good, it is rare that these silent companions do not bear to him, like a benediction, some thought of heaven.

"The day belongs to men," has said one of the ancients, "and the night to the gods." Yes, day in its activity and its bustle is to men and human things what youth and strength are to age, but night in its silence and meditation is to God like age, in which the contemplation of the heavenly host triumphs over all the interests of life. Does not age resemble the repose of the last hour of the day, the repose which comes after all duties done?

The years of the old man which correspond to these hours, are they not his property more than any other? Has not he acquitted himself of all his debts, this veteran of the earth, and, perhaps, according to the words of the Psalmist, paid what he did not owe? That which remains to him is, indeed, his; and that which he possesses is it not God's?

HOW TO WALK GRACEFULLY.—Dr. Dio Lewis writes as follows upon this graceful subject: "A graceful walk is rare. A queenly, elastic step atones for a homely face. It was her expert walking from one side of the stage to the other, while she never said a word, that constituted Mrs. Charles Kean's great attraction in a play that had a run of 150 nights. The prerequisites for fine walking are: 1st, shoes made to fit the feet; 2d, the clothing about the waist loose—the corset is a deadly enemy to fine walking as it is to life; 3d, carrying the chin close to the neck. The soles of the shoes should correspond precisely to the bottom of the feet, as outlined by a pencil mark drawn around the foot. As now made, the sole is an inch and a half smaller than the foot, and the result is a plentiful crop of corns and bunions, and in conjunction with the high heel, an awkward gait and bent position of the body in walking."

AN ANGEL IN THE BOSSOM.—When a child can be brought to tears, not from fear of punishment, but from repentance for offense, he need no chastisement. When the tears begin to flow from grief at one's own conduct, be sure there is an angel in the bosom.

THE WIFE IS THE SUN TO THE SOCIAL SYSTEM. Unless she attracts, there is nothing to keep heavenly bodies, like husbands, from flying into space.

EVERYBODY sees the cloud on the horizon, but who thinks of the blue sky above it.

Young Folks' Column.

The Broken Saw.

A boy went to live with a man who was accounted a hard master. He never kept his boys; they ran away or gave notice they meant to quit; so he was half his time without, and in search of a boy. The work was not very hard—opening and sweeping out the shop, chopping wood, going errands and helping round. At last Sam Fisher went to live with him. "Sam's a good boy," said his mother. "I should like to see a boy now-a-days that had a spark of goodness in him," growled the new master.

It is always bad to begin with a man who has no confidence in you; because, do your best, you are likely to have little credit for it. However, Sam thought he would try; the wages were good, and his mother wanted him to go. Sam had been there but three days before, in sawing a cross-grained stick of wood, he broke the saw. He was a little frightened. He knew he was careful, and he knew he was a pretty good sawyer, too, for a boy of his age; nevertheless the saw broke in his hands.

"And Mr. Jones will thrash you for it," said another boy who was in the wood-house with him. "Why, of course I didn't mean it, and accidents will happen to the best of folks," said Sam, looking with a very sorrowful air on the broken saw. "Mr. Jones never makes allowances," said the other boy, "I never saw anything like him. That Bill might have stayed, only that he jumped into a hen's nest and broke her eggs. He daren't tell of it; but Mr. Jones kept suspecting and suspecting, and laid everything out of the way to Bill, whether Bill was to blame or not, till Bill couldn't stand it, and wouldn't."

"Didn't he tell Mr. Jones about the eggs?" asked Sam. "No," said the boy; "he was afraid; Mr. Jones has got such a temper." "I think he'd better owned just at once," said Sam. "I suspect you'll find it better to preach than to practice," said the boy. "I'd run away before I'd tell him," and he soon turned on his heel and left poor Sam alone with his broken saw.

The poor boy did not feel very comfortable or happy. He shut up the wood-house walked out into the garden, and then went up to his little chamber under the eaves. He wished he could tell Mrs. Jones; but she wasn't sociable, and he had rather not. "Oh, my God," said Sam, falling on his knees, "help me to do the thing that is right."

I do not know what time it was, but when Mr. Jones came into the house the boy heard him. He got up, crept down stairs, and met Mr. Jones in the kitchen.

"Sir," said Sam, "I broke your saw, and I thought I'd come and tell you 'fore you saw it in the morning."

"I should think morning soon enough to tell of your carelessness. Why do you come down to-night?"

"Because," said Sam, "I was afraid if I put it off I might be tempted to tell a lie about it. I'm sorry I broke it, but I tried to be careful."

Mr. Jones looked at the boy from head to foot, then stretching out his hand, "There, Sam," he said heartily, "give me your hand. Shake hands; I'll trust you, Sam. That's right; that's right. Go to bed, boy. Never fear. I'm glad the saw broke; it shows the mettle's in you. Go to bed."

Mr. Jones was fairly won. Never were better friends after that than Sam and he. Sam thinks justice has not been done Mr. Jones. If the boys had treated him honestly and "above-board" he would have been a good man to live with. It was their conduct which soured and made him suspicious. I do not know how this is; I only know that Sam Fisher finds in Mr. Jones a kind and faithful master.

LITTLE MARY AND HER MOTHER.—When you attire Mary in a beautiful white dress, and after a little you see it all smutted up, dark with greasy spots here and there on it, how speedily you off with it, and put on something in its place, nice, plain, neat, and comely. You can't endure to see her go slipshod, or with dirty or spotted garments a single moment. Are you equally cautious, beloved, in keeping her soul unspotted? Of all the snares to which children are exposed, we know of none more fatal, more ruinous than those which spring from improper companions.

A HELPING word to one in trouble is often like a switch on a railroad track—but one inch between wreck and a smooth-rolling prosperity.

MISCELLANEOUS.

Mind in Farming.

We find the following remarks in an exchange, and fully concur in the view taken of the intellectual nature of agricultural pursuits, and the necessity of regulating farm operations by a wise exercise of an educated judgment:—"Much has been said and written about the cultivation of land and rearing of farm stock, and great improvements have been effected from the ingenuity of men of arts and sciences; but for all that has been said and done, there is often such a diversity of opinion on 'knotty points' amongst eminent men, that a man of moderate intellect is often baffled which opinion to adopt, as being best calculated to promote his interest. To the studious farmer every day brings forth something new, and the oldest and most experienced admit, when their career is near at end, that they were only beginning to know a little of the laws of Nature. A farmer, like the general of an army, requires to be continually on the watch; new difficulties daily arise; he purposes doing a certain thing to-morrow; the weather, or some other element, causes him to shift his position; and having continually new and unforeseen difficulties to meet, his anxiety increases, and his mind expands to meet the difficulty. With all these troubles before him, he rises early and enjoys much pleasure in watching the progress of experiments in his growing crops; sees his stocks of all kinds continue to increase; sees his fields in all their loveliness; and hears the song of the sweet warblers in the woods—pleasures which go far to make up for his hard toil and stormy blasts."

PRODUCTIONS OF AN "ARID PLAIN."—T. N. Willis has cut, threshed and sacked a ton of wheat to the acre on six hundred acres of land, in one body, on Eden Plain, ten miles east of Antioch. He also has a garden, orchard and vineyard right here upon this dry plain, where it is forty feet to the water (and from whence he has not drawn a drop to irrigate anything) that would surprise and delight any one to see. His fruit trees of apple, pear, peach, apricot, and almond are just coming into bearing, and are making as rapid growth as they do in the best Bay valleys of the State, or in the East where they have summer rains. His vineyard in its second year is growing luxuriantly. He has squash, watermelon, muskmelon and gourd vines planted through his orchard that are growing, running and bearing, like the Sacramento bottoms. Melons weighing from ten to twenty pounds lie over the ground thick, and the vines full of smaller sizes. The whole place looks as rank and green as such a place would on Sherman Island, or back on the rich bottoms of our Eastern rivers.

THE DISTRICT FAIR.—The Board of Directors of the Sonoma and Marin District Agricultural Society, says the *Petaluma Argus*, are bending every effort toward making the exhibition this fall one that will be a pride to Sonoma county, and that shall rebound to the credit of the State. There is every reason why this should be the case. The district embraces the choicest agricultural, vinicultural and stock-raising lands in the State, and if the products of each section could be brought together, it would present such an exhibition as would open the eyes of the world. Let each particular farmer of the District resolve to present something at the Fair—contribute his share toward the approaching exposition. Farmers of Sonoma county should take a particular pride in this respect, and endeavor to make the Fair represent the county in its true light.

CHEAP RAILROAD FARES FOR WORKINGMEN.—An improvement is on foot in Boston, headed by the Hon. Josiah Quincy, requiring the railroads centering in that city to attach daily second-class cars, at one-third of the usual rates, to at least two trains entering the city in the morning and two leaving at night. In London the railways are required to run trains morning and evening ten miles for a fare not exceeding two cents a trip. The question of cheap fares and depot transit is one which demands the consideration of all great centres of population, trade, and manufactures.

MESQUIT.—Some two years since the Mesquit grass was introduced into this county direct from Texas. L. Harbine, of Sebastopol, states that in bottom land it is a complete success, and does well, also, on uplands of certain kinds of soil. He has nine acres of this grass now on his land, and intends to sow more. Some of it is six feet high, and the field averages four and a half feet high.—*Russian River Flag*.

DOMESTIC ECONOMY.

Good Receipts not all that is Needed.

Something more than good receipts are necessary, to make a thorough cook. Be patient and persevering, remembering that steady practice and an earnest desire to succeed are indispensable in this department as well as in every separate division of household labor; and, united to these, you will find that the ability to vary somewhat the primary directions will often be equally necessary, requiring the good sense and judgment which should have been partially, at least, developed and greatly strengthened in those hours spent in study during your girlhood, which you are now so ready to feel were misspent and wasted.

It often happens that some ingredient will be needed, and you did not discover the want of it until the article to be prepared was too far under way to make easy a change in the bill of fare for that day. To be sure you should not have begun until all the necessary materials were laid out in order; but, having made the mistake, practice, experience, and a sufficient knowledge of the various articles that can be substituted and properly combined in place of the missing one, will soon show you how to conquer difficulties, and teach you how to release yourself successfully from all such dilemmas.

But in all the new cases that will rise constantly, you will find many things to be taken into consideration,—certain general rules will be understood; and, above all, good common sense and sound judgment must be called into active life to assist in the true application; a quick intuition to show just where, and how much, it will be safe to vary and modify the first directions given.

There are very few receipts that will not be the better for changes, which are often made necessary by the quality of the material you may be obliged to work with. If flour is dry, moist, or runny; if the sugar proves the best refined, or a second-class; if eggs are fresh, or rather old,—all these points require good judgment, as well as authenticated receipts. To follow the exact letter of a receipt always, may often insure a failure. Besides, as in the agricultural and horticultural world, a seedling may prove more desirable than the parent receipt.

To assist, as far as possible, in forming a correct idea of such modifications as from time to time may be advisable, some general directions are very necessary. We occasionally meet one who from childhood has manifested a gift for household management, and more particularly for all that pertains to the mystery of cooking, and for whom all rules and directions seem superfluous. Instinct is apparently the guide, and whatever the hand touches the result is successful. Yet, ask these favored ones for directions for any article which you know in their hands will be all right, and not once in a hundred times can they give you details that will prove at all satisfactory.

We knew a housekeeper "out West," whose cooking was never trusted to any hand but her own,—we mean her "company cooking;" "every day doings" were of little consequence. Under her hand, her bread was always the lightest, yet retaining the sweet, natural taste of the pure wheat perfectly,—never sour, never over or under-baked. Her pies, sweetened and flavored

"So as not to mix Taste not well joined, inelegant, but bring Taste after taste, upheld with kindest change."

Yet, judging from her own remarks, she never gave much heed to any receipts, having only a vague idea of the modes cooks employed; nor do we believe she ever weighed or measured anything, or could give another any distinct direction or idea of her manner of procedure in making the many delightful compounds she so skillfully prepared. No direction given by her could be followed, or any approximation to that which sprang from her magical touch reached.

"Do tell me how you made that delicious cake."

"Oh I hardly know myself. Never made anything twice alike. I just throw certain things together, and somehow—why—they make themselves, I think. When I begin to make anything, I never have any clear idea of what will be the result,—only I am pretty sure it will be good."

"Why, you have just made this cake, and can't have forgotten! Please tell me exactly how you did it."

"Oh, take a little flour, just a mite of salt, two or three eggs; beat them well, you know; throw in a lot of sugar, and a 'right smart chance' of butter, and milk enough to make it about right for stiffness. Dash in any kind of spice you like, and bake—well, some time—you can always tell when a thing is done, you know easy enough."

Was not that brilliant and lucid explanation sufficient to comfort the heart and strengthen the hands of any young wife already at her "wits' ends" because she did not know how to do things and make them good? Going to Mrs. —, who was "such a splendid cook," because she thought she must be the best exponent of the art, she listens, and finds it all "Greek" to her. In deep mortification and discouragement she feels that the coveted lesson has made "that darker which was dark enough before," and returns to her household cares bewildered and disheartened, imagining herself the most stupid of beings. She never thought

that directions about cooking could be so hard to understand.

These self-taught, or rather instinctive, cooks and housekeepers are the worst teachers for young folks. They never give an intelligible reason why they do thus and so. They do not realize that they give much thought to their work; it comes to them, or, as this lady said, things do themselves. They can no more tell how or why than precious baby-singers; or wonderful boy-musicians can tell why they catch a tune or touch the right keys on the piano.

Take courage. For awhile you may find "perfecting yourself in all housewifely arts, n-hill work," but no more than in your school-days you found in mastering French and Algebra. Now, as then, patience and perseverance will win the day, guided by the strong desire and good sense; and knowledge of any kind gained by one's own courage and labor is far more precious and reliable than that which comes to you without exertion.

We do not like to see young housekeepers feel that if a girl marries and attempts to keep house, all the years spent in school were wasted, and the knowledge gained can in no manner be used to aid her in her attempts to understand her new duties. Everything in your youthful studies that tends to strengthen the mind, cultivate a correct mode of looking into and forming sound judgment about everything that passes under your observation, will come into practical use more in the "tame commonalities" of the kitchen and cooking department, than in fashionable life or refined society. Practice must teach you many things which you cannot learn in the most elaborate cook book; but a good solid education will do much toward interpreting all directions, and making your cares and labors a source of pleasure and solid enjoyment.—*Mrs. H. W. Beecher*.

DRYING PUMPKINS.—We have tried all modes of drying, but no plan is equal, we think, to this: "Take the ripe pumpkins, pare, cut into small pieces, stew soft, mash and strain through a cullender, as if for making pies. Spread this pulp on plates in layers not quite an inch thick; dry it down in the stove oven, keep at so low a temperature as not to scorch it. In about a day it will become dry and crisp. The sheets thus made can be stored away in a dry place, and they are always ready for use for pies or sauce. Soak the pieces over night in a little milk, and they will return to a nice pulp, as delicious as the fresh pumpkin—we think much more so. The quick drying after cooking, prevents any portion from slightly souriug, as is always the case when the uncooked pieces are dried; the flavor is much better preserved, and after cooking is saved. This plan is quite as little trouble as the old mode, to say nothing of the superiority in the quality of the material obtained. Try it and you will not return to the old method, we are sure, and you will also become a great lover of pumpkin pie, all the year round.

COOKING SPINACH.—This is far superior to all other greens. It is also very wholesome. Its quality as a dish, however, depends upon the cooking, and this is the way to do it: Having peeled and washed the spinach, put into a tin-kettle, without water, or only that which may remain after washing; put this kettle inside of another containing water. When the spinach is well steamed, not boiled, take it up and drain it without pressing as that will make it tough and dry. Then chop it small, and add some hard boiled eggs also chopped; season with pepper and good butter, mix it well, return to the kettle, and stew a quarter of an hour. It is then delicious. Some people eat it with oil and it is an excellent addition.—*German Town Telegraph*.

HOME-MADE CANDY.—Use a new tin basin; put into it four tablespoons of water, one pound of "coffee A" sugar, one teaspoonful of good cream tartar; boil, stirring constantly to avoid burning. After it begins to have a soupy appearance try it often by dropping a little cold water, and if done it will at once become brittle. Butter an earthen dish and pour the hot candy into it, that it may cool just enough to handle. Flavor to taste with oil of peppermint, winter-green, sassafras or lemon. Two drops of oil will flavor it strong. For variety, divide into three or four parts and flavor differently by touching one kind of oil to each. Work in the hands at once; the more it is pulled the whiter it will get.

TO WASH SILK.—Half a pint of gin, four ozs. of soap, and two ounces of honey, well shaken. Wet a sponge with this mixture and rub the silk, which should be spread upon the table. Then wash it through two waters, in which put two or three spoonfuls of ox gall, which will brighten the colors and prevent their running. Do not wring the silk, but hang it up to dry, and while damp iron it. The lady who furnishes this receipt says she has washed a green silk dress by it, and it looks as good as new.

CLEANSING THE HAIR.—The best substance with which to cleanse the hair is a teaspoonful of water of common spirits of ammonia in a basin of water. The scalp and hair should be thoroughly washed and rinsed and wiped dry. A little glycerine dissolved in alcohol may then be advantageously applied; all other oils will become stale, and are unfit for such use. Barbers commonly use carbonate of potash in the water they employ for shampooing; but spirits of ammonia is better.

Preserving Green Corn.

There are three ways recommended for preserving green corn for winter use. The first and simplest is packing the husked ears, picked while in the milk, in barrels, and filling them up with good, clear, strong brine, best made by dissolving the salt, then skimming and cooling.)

The second way is to pick corn a little older than most people prefer for eating green, and parboil; then split the rows with a sharp knife, cut or scrape the kernels off, and dry them either in the sun or some drying room. The top of a stove in which there is fire, a slat frame hung high above the kitchen stove, an oven which is not hot enough to scorch, are the drying places usually employed. We prefer a well-regulated fruit-drying kiln. The corn may be spread upon plates or tins, in the small way, or on cotton cloth stretched on frames. The bulk and weight of the corn is rapidly reduced, so that the contents of two or more frames or tins may be turned together very soon. With a very little practice, one can judge very accurately whether it is dry enough not to mould by its rattling, and by the feeling of the grains when pressed against the closed lips. When dry it may be kept indefinitely in barrels or bags, away from mice and moisture.

The third way is by cauing—a method attended with a little difficulty. The corn is apt to ferment and burst the cans, besides spoiling the corn, which has often a most distressingly corrupt odor. This is the chief trouble. It may, however, be obviated by thorough boiling, aided by the addition of a little sugar—(just enough to taste.) The corn should be scraped from the cob, after splitting each row of kernels as before specified, either after parboiling or after thoroughly boiling, as for the table. The pulp is then salted to taste, and sweetened a little, while it is cooking. A little water must be added if it is in danger of scorching on the fire, and it must be boiled till the air is thoroughly expelled, which it requires some judgment to determine. It is then put in cans, which are closed air tight. When success attends this, it is the most satisfactory method.

To be served for the table, corn prepared by the first method must be boiled in two waters; by the second method it must be soaked and then boiled, with the addition of milk, butter and salt, (and perhaps beans); prepared by the third method, it needs only to be heated hot in the cans, turned out, and dressed with butter and cream.

ITEMS FOR HOUSE-KEEPERS.—Do everything in its proper time. Keep everything in its place. Always mend clothes before washing them.

Alum or vinegar is good to set colors of red, green or yellow.

A hot shovel held over varnished furniture will take out white spots.

Ribbons of any kind should be washed in cold soap-suds and not rinsed.

If your flat-irons are rough rub them with fine salt, and it will make them smooth.

If you are buying a carpet for durability, choose small figures.

Scotch snuff put on the holes where crickets come out will destroy them.

A gallon of strong lye put in a barrel of hard water, will make it as soft as rain water.

Practical Receipts.

EDITORS RURAL PRESS:—I have long desired to add my testimony regarding the excellency of your valuable paper, but a multiplicity of duties have prevented my writing anything for its columns.

I have some recipes, however, which I deem excellent for plain cakes, pies, etc., that I think particularly suited to the wants of farmers' wives—as they are supposed to keep cows and chickens—hence have plenty of milk, cream and eggs.

PIE CRUST.—One cup sour cream; 1 cup buttermilk; soda sufficient to neutralize the acid; a little salt and flour; roll a little thinner than lard pie crust; it will not be "flaky" but light and delicious to one who has more regard for health than for mere custom and fancy.

GRAHAM GINGER CAKE.—One cup sour cream; 1 egg; 1 cup syrup; 1 teaspoonful ginger; 1 small teaspoonful soda; a little salt; graham flour sufficient to make a thick batter.

It think it time hygienic people gave some strict, plain recipes to the world so that we may occasionally find a meal gotten up on hygienic principles.

Will you or some of your numerous readers give a sure remedy for destroying the lice which infest the poultry yard? and oblige

Mrs. W. R. MICHENER.

We know of nothing better than carbolic acid, a very mild solution of which should be sprinkled, occasionally, over the nests, roosts and the birds themselves. Flour of sulphur answers a very good purpose. Care should be taken in using the carbolic acid, especially very young chickens, not to have it too strong or apply it too plentifully. A single drop of a very weak solution under the wings and a very tiny drop upon the top of the head of a chicken will soon rid it of vermin.

California Flour.

Our flour has a high reputation abroad; English and French bakers prefer it to any other American brand. It is better than any Eastern flour for certain purposes and for certain reasons. Our flour will make just as good macaroni as is made in the world, while Eastern flour will not. Our flour will—as the bakers say—"take more water," than any other flour known, except Chili flour.

What we mean by this is, that in making up the dough into loaf ready for the oven, more water is required to make good bread than with most other flour, and more weight of bread results from a given weight of flour. Hence the preference given to California brands.

Housewives on first trial of our flour, in their usual way of making it in the Atlantic States, often find it difficult to make good bread; but on being told to mix more water in the dough, that is, make the dough or paste much softer, all difficulty vanishes.

We copy an article from the *Bulletin* in another column, relative to the effect of harvesting upon the quality of our flour, that should receive the careful consideration of wheat growers. It seems that the method of harvesting, denominated heading, as differing from the old methods by which the greater part of the straw is left attached to the head, is working an injury to the quality of California flour.

That wheat harvested by "heading" or by being threshed directly from the standing straw, with no opportunity of "curing," is not in good favor with mill men; in fact is refused by those who are determined to maintain the reputation of their manufactures. If their opinions shall prove to be well founded, it becomes a serious matter with reference to the use or discontinuance of that class of harvesting machines denominated headers, or those that thresh and clean directly from the standing straw.

SAN RAMON VALLEY.—The harvest in this section of Contra Costa county, averages about 10 sacks of wheat to the acre, or 20 to 25 bushels. The kernels most especially from seed sown in January and February, which seemed to produce better than earlier sown grain, are plump and round. It is the best crop for years. Most of the grain grown from this valley, including Walnut Creek, Danville and vicinity, is shipped from Pacheco Landing. A narrow gauge railroad to Oakland is considered practical from the valley. A new wagon road should be built, which by passing through a short tunnel of 700 feet, would shorten the distance to Oakland some five miles. The hay crop in the valley is large, and some of the best quality is selling at \$7 a ton.

A Worthy Invention—The Importance of Reliable Patent Agents.

Messrs. Dewey & Co., Patent Agents, No. 338 Montgomery St., S. F.—Gents:—To remove a reproachful custom detrimental to the present and permanent interests of California. To preserve and perpetuate the wealth of the soil, the true source of a nation's prosperity. To make farming remunerative, reliable and attractive. To abolish the wanton, but heretofore necessary practice of annually destroying by fire, the vast masses of straw produced throughout this great State. To improve and increase in a four fold degree, the quality and quantity of feed at a time when so greatly needed, by the millions of sheep and thousands of starving cattle that are annually driven from the many pastures of the State to subsist in our valleys during the long dry period between the months of July and January.

You were by me recently furnished with a complete working model of a machine that will cut, chop, roll and spread evenly, or in rows, all the straw over the surface of the land, thereby affording immense quantities of improved feed of a choice kind for cattle and sheep, the refuse left by them not to be burned, but to be turned under by the plow to manure the ground on which it grew.

Understanding my right to said machine has just been secured through your efficient instrumentality, I regret my inability to use language sufficiently forcible or expressive of my high appreciation of your firm in the capacity of Patent Agents.

Your integrity, business ability and discreet dispatch are remarkable and praiseworthy. The public generally and justly suppose that the Patent Agent holds a position peculiarly sacred and responsible, yet it is well known that unreliable and unprincipled men frequently find their way into that honorable calling, not to protect their patrons' interests, but for purposes of prey; hence the magnitude of distrust indulged in by many inventors when transacting business through agents of whom they have but a limited and meagre knowledge.

I have known persons to retain in model form their inventions for years before being reconciled to allow an agent to look thereon, thus debarbing themselves and the world from the benefits of their really valuable invention.

Suggestions to Patentees.

After a valuable discovery is made, the first question put is, where shall I find an agent who is known to be able, honest and reliable. To remove distrust from the minds of this class of persons as a guide to the simple and unvarying, I would suggest that it is a duty incumbent upon all patentees to have secured to every patented article or machine of worth, the name of the agent through whom the patent was secured.

By this means I apprehend a discerning public would see and know by a better than newspaper evidence,

through whose instrumentality valuable patents have been obtained.

Inventors throughout the length and breadth of the whole land would be conducted to proper persons who would foster, not fleece them of their rights, besides affording publicity to a truthful and substantial character to worthy and deserving agents, by the right means—the machines themselves. By the right parties—the Patentees.

Irresponsible and dishonest men would be shorn of patronage and driven into deserved seclusion. Able and worthy agents would be elevated to an eminence, honorable and enviable by the potent pressure of public esteem.

Inventors stimulated to increased activity and energy, improvements in all branches of legitimate pursuits would make great and rapid strides, labor lightened, humanity dignified. Upon the plan suggested I shall always act, and as far as possible, to be carried out, confident as I am that I thereby discharge a duty, a duty I owe to myself, to my agent and to a solicitous and inventive public.

Many of my machines are now useful and valuable, adapted as they are, not only to this State, but every State throughout this great and influential country. The Canadas on the north and vast possessions of other governments on the Continent, Australia and the Colonies as well, and each one as it goes shall contribute to give to DEWEY & CO., U. S. and FOREIGN PATENT AGENTS, SAN FRANCISCO, CALIFORNIA—that honorable and enduring public prominence so justly and well deserved. With undiminished confidence, W. A. DAWSON. Alameda Co., Cal., August, 1872.

TO WINE GROWERS AND OTHERS USING TANKS AND CASKS.—Your attention is called to the home manufacturing house of Fulda & Sons on page 93.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Aug. 8.

FLOUR.—The interior and local demand is reported good, with a fair inquiry for export. We quote prices as follows:

Superfine, \$4.25@4.50; extra, in sacks, of 196 lbs. \$5.62@5.75; Oregon brands, \$5.25@5.87½ in sacks of 196 lbs.

WHEAT.—The market has been active at unchanged rates since our last review. Receipts are free. Sales aggregate 100,000 sacks fair to choice, at \$1.50@1.60. The range for shipping grades is \$1.50@1.55, and choice milling, \$1.57½@1.60 per 100 lbs.

The latest Liverpool market quotations come through at 11s. 8d. per cental.

BARLEY.—Market firm. Sales embrace 12-000 sacks, at \$1.10@1.15 for new. The range at close is, new bay 1.10@1.15; old brewing \$1.60@1.90.

OATS.—Market is steady. New are quotable at 1.85, and old are scarce and jobbing at \$2 per cental.

CORN.—Is quotable at \$1.65@1.75, jobbing at \$1.75@1.90 per 100 lbs.

CORNMEAL.—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$1.75 per 100 lbs.

RYE.—Is quiet at 1.80 per 100 lbs.

STRAW.—Quotable at \$6@7.25 per ton for cargo lots.

HAY.—Is selling at \$16 per ton from the mill.

MIDDLINGS.—For feed, are \$25.00 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been pretty free during the week. Quotable at close at \$10@15.00 per ton.

HONEY.—In the comb is selling at 10@20; do. strained, 12@15c. per lb.

POTATOES.—There has been a pretty fair demand this week, and very free supplies especially of sweet. Sales of Red at \$1.25@1.50 per 100 lbs.; Carolina, \$1.75 per 100 lbs.

WOOL.—No sales have been made this week. The range of prices is nominally 30@35c. for clean, and 20@30c. for burry. Oregon was sold for 35@40c. Stocks here amounted to almost 3,000,000 lbs.

TALLOW.—Good quality of Cal. 8c.@8½. SEEDS.—Flax 3c.; Canary, 4½@5½c. Alfalfa, 16@20; mustard, 2½@5c. per lb.

PROVISIONS.—California Bacon 12½@14c per lb.; Oregon, 13½@14c. Eastern do, 10@12 for clear and 11@13 for sugar-cured Breakfast; Cal. Hams 13@14; Eastern do, 16@18; California Smoked Beef, 13½@14c. per lb.

BEANS.—The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25; large \$3.75; Bayo, 5.25@5.50.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 6c. Pean., 25c. per lb.; Hickory, 12c.; Brazil, 15c.; Chili Walnuts, 15c.; French Almonds, 25@30c.; Princess Almonds, 35@40c.; Cocoanuts, \$7.00 per 100.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 8@9 c. per lb. do. 2d quality 6@7 c. per lb.; do. 3d do. 4@5c.

VEAL—Quotable at 8@12½c.

MUTTON—Quiet at 6c. per lb.

LAMB—8@9c.

PORK—Undressed grain-fed is quotable at 5½@6½c. dressed, grain-fed, 8@9c. per lb.

Roasting pigs are in good demand at \$1.75@2.00 each.

POULTRY.—Live Turkeys, 25c. per lb.; dressed, 27c. per lb.; Hens \$9.00@9.50; Roosters, \$6.00@8.00 per dozen; Spring Chickens, \$3.75@4.00; Ducks, tame, \$7.00@8.00 per doz.; Geese, \$12@15 c. per dozen.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 25@30c., with a few choice lots at 32½. New firkin is quotable at 20@27½c., pickled, old 18@20c.; Eastern firkin 18@27½c.

CHEESE.—New California, 11@13½c.; Eastern is jobbing at 12½@13c. per lb.

EGGS.—California fresh, are 41@42½c., jobbing at 40c. per doz.

LARD.—California 12@13; Oregon, none in market. Eastern in cases 14@14½c.; do in tcs. 11½@12c.; in kegs, 12@13c. per lb.

DRIED FRUIT.
Apples, per doz. 10@10c. Pitted, do. 20@25
Pears, per doz. 9@10 Raisins, per doz. 5@15
Peaches, per doz. 10@11 Black Figs, per doz. 6@8
Apricots, per doz. 5@6 White, do. 15@20
Plums, per doz. 5@10

VEGETABLES.
Cabbage, per doz. 1½@2 Cucumbers, per box. 50@75
Garlic, per doz. 1½@2 Summer Squash, per box 50@75
Rhubarb, per doz. 1@1 Potatoes, per box. 50@75
Green Peas, 2½@4 Tomatoes, per box. 50@75
Pumpkins, per doz. 1@1 String Beans, per doz. 3@4
Cauliflower, per doz. 1@1 Egg Plant, per doz. 2@2
Marrowfat Squash, 10@15 Peppers, per doz. 2@3
per ton. 100@100 Okra, per doz. 6@8

FRUIT MARKET.
(CORRECTED WEEKLY BY HOWE AND HALL, 408 DAVIS ST.)
Tahiti Oranges, M. 12@15 Apricots, per doz. 6@8
Limes, per doz. 12@15 Nectarines, per doz. 6@8
Athin Lemons, M. 12@15 German Prunes, 6@8
Seville do, M. 12@15 Plums, Choice 1.50@2.00
Bananas, per bunch 2.00@2.50 Plums, Common 50@1.00
Pineapples, per doz. 6.00@7.00 Figs, 8@10
Apples, per doz. 1.50@2.00 Grapes, 4@10
Sweet Corn, per doz. 1.00@1.50 Crab Apples, per box 1.25@1.50
Pears, Bartlett, per doz. 2.50@3.00 Strawberries, 5@6
Pears, Bloodgood, 2.50@3.00 Blackberries, 5@6
Pears, Cooking, 2.50@3.00 Raspberries, 5@6
Peaches, Choice, 1.25@1.50 Cantaloupes, per doz. 50@1.00
Peaches, Common, 75@1.00 Watermelons, 100.00@12.50

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING.—Prices are as follows: Hland-sewed Burlap sacks 22x36, are 15½c. Sales of 60,000 wheat sacks from Oakland Factory at 14½c. Flour sacks 9@9½c. for qrs. and 13½c. for hls. Standard Gunnies are jobbing at 20@21c.; Wool 75@80c. Burlap sacks 17½@18; price of 40-inch Burlap, is 12½c.

BUILDING AND FENCING MATERIALS.

The demand for lumber in the interior is light, and the export trade is light also. Dealers pay for cargoes of Oregon as follows: Although there is some disagreement among dealers about the advance in prices on the 1st of September, prices are pretty soon to go up. Rough \$16@17; do surfaced at \$27@28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine \$35@40; Cedar \$27½@37½. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices is continued by the Lumber Dealers' Exchange.

Puget Sound Pine.
Rough, per M. 22.50
Flooring and Stepping, per M. 35.00
Flooring, second quality, per M. 25.00
Laths, per M. 3.00
Fencing, per lineal foot. 3c
Redwood—
Rough, per M. 22.50
Rough refuse, per M. 17.00
Rough Pickets, per M. 18.00
Rough Pickets, pointed, per M. 20.00
Rough Pickets, per M. 30.00
Siding, per M. 25.00
Tongued and Grooved, surfaced, per M. 37.50
Do do refuse per M. 35.00
Half-inch surfaced, per M. 35.00
Rustic per M. 40.00
Batten per lineal foot. 4c
Shingles per M. 3.00
Sugar Pine is jobbing at \$35 for clear and \$15 for second quality.

COFFEE.—Costa Rica 20½c.; Guatemala 18c. Java 23c.; Manila, 18½c.; Rio 19½c. @20; Ground Coffee in cases 30c.; Chicory, 12½c.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c. per lb.

FISH.—We quote Pacific Dry Cod in bundles at 4½c.@5½. Salmon in bbls. \$6.00@7.00, hf do, \$3.50@4.50; Case Salmon, \$2.50 for 2½-b. cans, \$2.25 for 2-b. cans, and \$1.75 for 1-b. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$8.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.15; do No. 2, \$1.50@1.62½.

NAILS.—Quotable at \$6 25@9.00 for assorted sizes.

PAPER.—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 per rem.

PAINTS.—Standard White Lead 12½c.; White-enig, 2½c.; Chalk 2½c.; Paris White 3c.; Ochre, 3½c.; Venetian Red, 3c.; Red lead, 11½c.; Litharge, 11c. per lb.

RICE.—Sales of China No. 1 at 7@7½c. and No. 2 at 6½@6¾c. per lb; Siam, quotable at 5½@6½c. in mats; Carolina Table, 10@11; Hawaiian, 9@10c. per lb.

SUGAR.—We quote Cal. Cube at 13½c.; Circle A Crushed, 13c., and Granulated 12½c.; Golden C. 11c.; extra Golden 11½c.; Hawaiian 8@11c. as extremes per lb.

SYRUP.—Prices may be given as follows: 57½c. in bbls, 60 in hf bbls, and 65c. in kegs.

SALT.—California Bay sells at \$6@6¼; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP.—The prices for local brands are 5@10c., and Castile, 13@13½c. per lb.

TEA.—We quote as follows for bulk descriptions: Amoy — Common to fair, 30@45c.; superior to fine, 55@65c.; extra fine, 75@85c. Foochow — Common to fair, 25@45c.; superior to fine, 50@60c.; extra fine, 75c. Souchong and Congou — Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Japan — Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55@75c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, August 8, 1872.

MISCELLANEOUS.
Butter, Cal fr. do. 25@35 Flour sds, qr. 10@11
do Oregon, do. 25@30 do 1lb. 10@11
Honey, per lb. 25@30 Potato (q) Bags. 12@16
Cheese, per lb. 20@25 Second-hand do 12@16
Eggs, per doz. 45@50 Deer Skins, per lb. 15@22
Lard, per lb. 18@20 Sheep sds, w/o 50@75
Sugar, cr. 7@10 do 1lb. 10@11
Brown do, per lb. 8@9 Goat skins, each. 25@50
Butter, do. 12@13 Dry Cal. Hides. 18½@19
Boat, do. 12@15 do Salted. 18½@19
Sugar, Map. do. 25@30 do Dry Mex. Hides. 17½@18
Plums, dried, do. 15@30 do Salted. 18½@19
Peaches, dried, do. 20@30 do Live Oak Wood. 10@12½
Wool sacks, new 25@30 Tallow, 8½@10
Second-hand do 82½@85

PRODUCE, ETC.
Flour, ex. per bbl. 6.00@6.25 Barley, cwt. 1.50@1.65
Superfine, do. 6.00@6.50 Horse, cwt. 1.00@1.50
Corn Meal, 100 lb. 3.00@3.50 Dry Lima Beans, per lb. 8
Wheat, per 100 lbs. 2.40@2.60 Hay, per ton. 17.00@25.00
Oats, per 100 lbs. 1.60@1.75 Potatoes, per cwt. 75@1.00

FRUITS, VEGETABLES, ETC.
Apricots, per doz. 16@18 Celery, per doz. 75@100
Pine Apples, per doz. 15@18 Cucumbers, per doz. 10@15
Bananas, per bunch 50@100 Tomatoes, per doz. 4@15
Cantaloupes, per doz. 25@50 Cress, per doz. 20@25
Watermelons, per doz. 20@30 Green Herbs, per lb. 25@50
Cal. Walnuts, per doz. 20@30 Green Peas, per lb. 15@20
Cranberries, per doz. 10@15 Green Corn, doz. 15@20
Strawberries, per doz. 10@15 Lettuce, per doz. 12@25
Raspberries, per doz. 15@20 Mushrooms, per doz. 10@25
Cranberries, O. 8@12 Cabbage, per doz. 10@15
Goschberries, 8@12 Okra, dried, per lb. 50@75
Cherries, per doz. 15@30 Pumpkin, per lb. 3@4
Oranges, per 100, 20.00@25.00 Parsnips, per bunch 20@25
Lemons, per 100, 5.00@10.00 Parsley, per bunch 50@25
Figs, fresh, per lb. 12@15 Pickles, per gal. 50@100
Asparagus, wh. 7@10 Rhubarb, per lb. 5@10
Artichokes, doz. 50@60 Radishes, per bunch 10@15
Brussels sprouts, 10@12 Summer Squash 3@4
Beets, per doz. 25@30 Marrowfat, per doz. 2
Potatoes, New, per lb. 1½@2 Dry Lima, shell. 6@8
Potatoes, sweet, 2@2 Spinage, per bkt. 25@50
Broccoli, per doz. 1.50@2.00 Cauliflower, per doz. 1.50@2.00
Cauliflower, per doz. 1.50@2.00 Cabbage, per doz. 1.50@2.00
Carrots, per doz. 15@25 Turnips, per doz. 15@25

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, apiece 50@100 Choice D'field 10@25
Turkeys, per lb. 10@15 Stuffed turkeys 10@25
Ducks, wild, per lb. 10@15 Stuffed ducks 10@25
Tame, do. 1.50@2.50 Moulting, per lb. 15@18
Teal, per doz. 10@15 Salmon, per lb. 8@10
Geese, wild, pair 25@30 Smoked, new, 12@15
Tame, per pair. 50@60 Pickled, per lb. 6@10
Hens, each. 75@100 Rock Corn, 10@15
Suipe, per doz. 10@15 Perch, s water, lb. 12@15
English, do. 10@15 Fresh water, lb. 10@15
Quails, per doz. 10@15 Lake Big Trout, 10@25
Pigeons, dom. do. 30@50 Smelts, large, per lb. 8@10
Wild, do. 20@30 Pheasant, per lb. 10@15
Hares, each. 40@50 Silver Smelts, 15@20
Rabbits, tame, 75@100 Soles, per lb. 30@40
Wild, do. 25@30 Herrings, fresh 10@15
Beef, tend, per lb. 18@25 Sm'kd, per lb. 10@15
Corned, per lb. 10@15 Tomcod, per lb. 25@30
Smoked, per lb. 15@18 Terrapin, per doz. 60@80
Pork, rib, etc. 10@15 Mackerel, p k ea. 10@15
Chops, do. 15@20 Fresh, do. 10@15
Veal, per lb. 15@20 Sea Bass, per lb. 10@15
Culet, do. 15@20 Halibut, per lb. 10@15
Mutton chops, 12@15 Sturgeon, per lb. 4@5
Leg, per lb. 15@18 Oysters, per 100, 1.00@1.25
Lamb, per lb. 18@20 Chesep. per doz. 50@60
Tongues, beef, ea. 15@20 Turbot, per lb. 30@35
Tongues, pig, ea. 15@20 Crabs, per doz. 1.00@1.50
Bacon, Cal. per lb. 18@20 Soft Shell, 10@15
Oregon, do. 16@20 Shrimps, 10@15
Hams, Cal. do. 16@20 Prawns, 10@15
Hams, Cross s e 25@30 Sardines, 8@10

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, August 8, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as follows:—

City Tanned Leather, per lb. 25@29
Santa Cruz Leather, per lb. 25@29
Country Leather, per lb. 25@29
Stockton Leather, per lb. 25@29
French skins continue firm. All California skins are scarce and bring full prices.
Jodot, 8 Kil, per doz. 800 00
Jodot, 11 to 19 Kil, per doz. 800 00
Jodot, second choice, 11 to 19 Kil, per doz. 500 00
Lemoine, 16 to 18 Kil, per doz. 750 00
Lemoine, 12 and 13 Kil, per doz. 750 00
Cornelian, 16 to 19 Kil, per doz. 650 00
Cornelian, 12 to 14 Kil, per doz. 600 00
Ogerau Calif. per doz. 500 00
Simon, 18 Kil, per doz. 650 00
Simon, 20 Kil, per doz. 650 00
Simon, 24 Kil, per doz. 720 00
Robert Calif, 7 and 8 Kil. 350 00
French Kips, per lb. 1 00
French Sheep, all colors, per doz. 15 00
Eastern Calif for Backs, per lb. 1 50
Sheep Roans for Toppings, all colors, per doz. 9 00
Sheep Roans for Linings, per doz. 5 50
California Russet Sheep Linings 1 75
Best Jodot Calif Boot Legs, per pair. 3 25
Good French Calif Boot Legs, per pair. 5 00
French Calif Boot Legs, per pair. 4 00
Harnes Leather, per lb. 30 00
Fair Bridge Leather, per doz. 48 00
Skinning Leather, per lb. 3 00
Welt Leather, per doz. 30 00
Buff Leather, per foot 18 21
Wax Side Leather, per foot. 20 00

From the Purchaser of the Thresher's Guide.

Guide.

COVERDALE, August 6, 1872.—Messrs. DEWEY & CO:

Not long since I purchased from the Pacific Rural Press office a copy of the Thresher's Guide, and you requested me to send you a line and let you know whether the book is worth its price. I think it is, as there are but few of us threshers and farmers but can get a dollar's worth of information from some one of the subjects treated of, to say nothing about the whole book. I intended to have sent you a line before now, but I have been so busy with my header that I have had scarcely time to read (my favorite) the Rural Press, and I shall commence work with my thrasher in a few days. Yours, most respectfully, J. BURROUGH.

WE WILL CHANGE THE ADDRESS of any subscriber who requests it, *if* by the present address is stated.

Violets and Water Lilies

Breath an exquisite fragrance agreeable to the most fastidious; but in the FLORIDA WATER of MURRAY & LANMAN, it is not to these two floral beauties alone that we are confined; in it we have the full fragrance of a whole bouquet of blooming troic flowers. Sold by druggists everywhere. 663

An Article of True Merit.—Brown's Bronchial Troches are the most popular article in this country or Europe for Throat Diseases and Coughs, and this popularity is based upon real merit.

Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plants. Catalogues, 20c. F. R. PHENIX, Bloomington Nursery, Ill. 244-101

To have a good Shoe made upon the right principle, buy those made with the patent CABLE SCREW WIRE. The only reliable covering for the foot yet found. Try them.

</

STATE FAIR FOR 1872,
AT SACRAMENTO,
COMMENCING
On Thursday - - - the 19th,
AND CLOSING
On Friday, - - the 27th of September.

\$10,000

To be Distributed in Cash Premiums!

Exhibition to be divided into seven departments, and the SOCIETY'S GOLD MEDAL awarded to the most meritorious exhibition in each department.

THE LARGEST STOCK SHOW
Ever had on the Pacific Coast.

THE MOST ATTRACTIVE SPEED PROGRAMME
Ever offered in the Union.

The First Annual Exhibition of the California Wine Growers' Association to be held at the same time and place.

A GRAND FLOWING MATCH
To come off on the grounds.

A GRAND REGATTA ON THE RIVER,
In which eight or ten boats will participate.

A public sale of Thoroughbred Stock at the Park each day of the Fair.

The Central Pacific Company's railroads and steamers will carry all articles to and from the Fair FREE OF CHARGE.

Wells, Fargo & Co.'s Express will deliver all packages FREE not weighing over 20 pounds.

Applications for Stalls at the Park and space at the Pavilion should be made to ROBERT BECK, Recording Secretary, at once.

Memberships, \$5. Single Admission, 50 cents.

C. F. REED, President.

ROBERT BECK, Secretary.

TANK MAKING.

The undersigned having adopted TANK MAKING as their specialty, are now prepared to manufacture

Tanks of Any Description
—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood
FOR THE SPECIAL PURPOSE OF MAKING

LARGE WINE TANKS AND CASKS
Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,
made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.
1,000 to 2,000 gallons, bound with 5 hoops 1 3/4 x 1/2 and 1 hoop 1 3/4 x 3-16.
2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2 hoop 2 x 3-16.
4,500 to 7,500 gallons, bound with 5 hoops 2 1/2 x 1/2 and 2 hoop 2 1/2 x 3-16.
7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 1/2 and 2 hoops 2 1/2 x 3-16.
15,000 to 20,000 gallons, bound with 8 hoops 3 x 1/2 and 3 hoops 3 x 3-16.

PRICE, - - From 1 1/2 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2 1/2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD
Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.

REDWOOD CASKS (split lumber) with oak middle piece and gate, from 7 to 9 c. per gallon.

OAK CASKS (full stock,) from 12 1/2 to 15 c. per gallon. Send for Price List.

For further particulars address.

M. FULDA & SONS,
Cor. Commercial and Drum Streets, S. F.
54-6t

From **ALL SIZES**
3 to 30
Horse
Power.

Hoadley's
Engines
Sole Agents
TREADWELL & CO

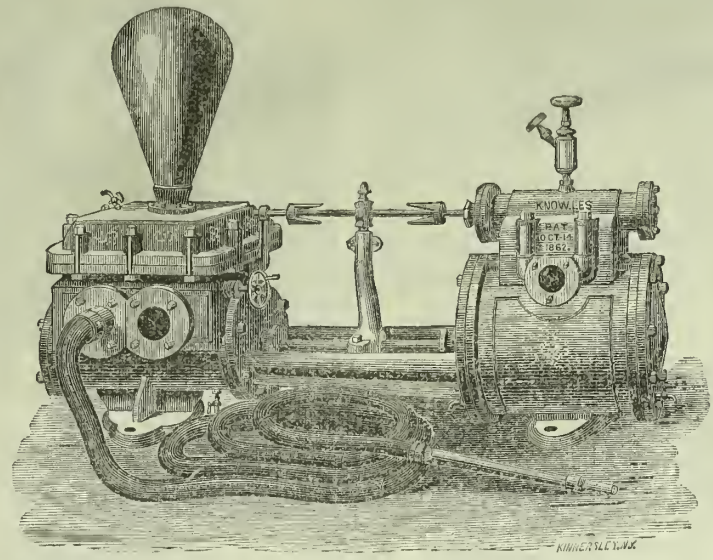
"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 cowbp

KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

v113-awhp G. W. DICKIE, CHAS. R. STEIGER, W. EPPELSHEIMER, H. B. ANGELL, MELVILLE ATWOOD."



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11 1/2 per cent., while others lost as high as 40 per cent., showing great difference in economy.

WE BUILD AND HAVE CONSTANTLY ON HAND
THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.

A. L. FISH, Agent.
No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand. 3v24-cow-bp

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as **THE BEST STEAM PUMP.** [Awarded a SILVER MEDAL, JAS. SPIERS, WM. H. BIRCH. (Signed)]

From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGELL, CHAS. R. STEIGER, W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for which we are also selling agents.—See official Report of the above Committee.]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,
TREADWELL & CO.,
Market Street, corner of Fremont, SAN FRANCISCO.

MOWER and REAPER SECTIONS

On hand and made to order at Lowest Prices by the
PACIFIC FILE WORKS,
53 Beale Street, S. F.

New FILES on hand. 19v3-2m Old FILES Re-Cut.

Attention, Owners of Horses.

The ZINC COLLAR PAD is guaranteed to cure the worst case of raw and inflamed sore neck in Ten Days, and work the horse every day, or money refunded; and will not chafe or wear the mane off of the neck. For sale by Saddlery, Hardware Establishments and Harness Makers. Manufactured by the ZINC COLLAR PAD CO., Buchanan, Michigan. 3v4-4t

WILCOX'S IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger,
The most Simple, Durable, and in all respects the most ECONOMICAL of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

WANTED.
A Dairy or Stock Ranch, of about Three Hundred Acres; part good rich bottom land, and part hills, with good water, and within two or three hours, by a road or steamboat, of Oakland. Price must be moderate.

Address **H. M. AMES,**
3v4-1m P. O. Box 40, Oakland.

PURCHASERS please say ad vertized in Pacific Rural Press.

LIST OF PREMIUMS ON WINE, BRANDY, GRAPES, ETC.,

As agreed upon by the Board of Directors of the
California Vine-Growers and Wine and Brandy Association.

Brandy.
Best grape brandy, vintage 1871..... \$25
Best grape brandy, vintage 1870..... 25
Best grape brandy, vintage 1869..... 25
Best grape brandy, vintage 1868..... 25
Best grape brandy, vintage 1867 or older..... Diploma.

Dry Wines.
Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Sweet Wines.
Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Special Wines.
Best California port wine, vintage 1871..... \$25
Best California port wine, vintage 1870..... 25
Best Cal. port wine, vintage 1869 or older..... Diploma.
Best California sherry wine, vintage 1871..... 25
Best California sherry wine, vintage 1870..... 25
Best Cal. sherry wine, vintage 1869, or older..... Diploma.
Best California sparkling wine, vintage 1871..... 25
Best California sparkling wine, vintage 1870..... 25
Best California sparkling wine, vintage 1869 or older..... Diploma.
Best California Angelica wine, vintage 1871..... 25
Best California Angelica wine, vintage 1870..... 25
Best California Angelica wine, vintage 1869 or older..... Diploma.

Miscellaneous.
Best samples of grape syrup, not less than one gallon..... \$20
Best sample of grape sugar, not less than five pounds..... 20
Best twenty-five pounds of raisins..... 50
Best still..... 50
Best grape crusher and separator..... 50
Best and cheapest tank, cask or butt for wine or brandy for storage..... 50

Grapes.
Best twelve varieties of the table grapes, not less than three bunches each..... \$25
Best six varieties of table grapes, not less than three bunches each..... 20
Best three varieties of table grapes, not less than three bunches each..... 15
Best two varieties of table grapes, not less than three bunches each..... 10
Best one variety of table grapes, not less than three bunches each..... 20
Best twelve varieties of wine grapes, not less than three bunches each..... 25
Best six varieties of wine grapes, not less than three bunches each..... 20
Best three varieties of wine grapes, not less than three bunches each..... 15
Best two varieties of wine grapes, not less than three bunches each..... 10
Best one variety of wine grapes, not less than three bunches..... 20
Best variety of raisin grapes..... 10
Best and greatest variety of grapes, not less than three bunches each..... 60
Second best and greatest variety of grapes, not less than three bunches each..... 40

The above list of premiums, together with the Rules and Regulations which have been adopted by the Association, will be published in a pamphlet form for free circulation on application to the Secretary, I. N. Hoag.

POPULAR MUSIC BOOKS.

Now select the Music Books needed during the next Autumn, and agreeably occupy your Summer leisure in examining, playing and singing from them.

THE STANDARD! Price \$1.50; \$13.50 per doz.
Destined to be the BANNER CHURCH MUSIC BOOK OF THE SEASON. Singers, leaders, teachers! "Rally round the banner!"

SPARKLING RUBIES! Price 35 cents.
For Sabbath Schools. None better.

THE PILGRIM'S HARP! Price 60 cents.
For Vestries and Prayer Meetings. Unexcelled.

Take with you, for entertainment at Summer Resorts, **THE MUSICAL TREASURE.**
225 pages of new and popular Songs and Pianoforte pieces, or

SHOWER OF PEARLS.
Full of the best Vocal Duets. Or,

OPERATIC PEARLS.
Full of the best Opera Songs. Or,

PIANIST'S ALBUM.
Full of the best Piano pieces. Or,

PIANO-FORTE GEMS.
Full of the best Piano pieces.

Each of the above five books costs \$2.50 in boards, or \$3.00 in cloth. Has more than 200 large pages full of popular music, and either book is a most entertaining companion to a lover of music.

Specimens of the STANDARD sent, for the present, post-paid, for \$1.25, and of the other books for the retail price.

OLIVER DITSON & CO., Boston.
C. H. DITSON & CO., New York.

The Celebrated Whitewater Wagons
Thimble Skein AND IRON AXLE
Sole Agents
TREADWELL & CO.

It will pay any man who wants a Wagon to examine "The Whitewater." It has the reputation of being the BEST Farm Wagon ever sold in California. All sizes for sale by TREADWELL & CO., Sole Agents, San Francisco. 16v24 cowbp

Important to Wool Growers.

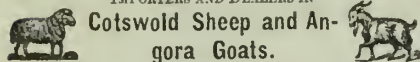


**PURE BLOODED
FRENCH MERINO RAMS
FOR SALE BY ROBERT BLACOW,
Of Centerville, Alameda County, Cal.**

These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to buy or purchase the best and purest of stock. 16v3-6m

LANDRUM & RODGERS,

IMPORTERS AND DEALERS IN



Cotswold Sheep and Angora Goats.

A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

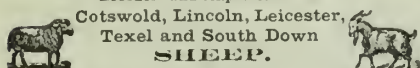
All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

We are expecting a large lot of Goats from the East.

Address **LANDRUM & RODGERS,**
2v4-3m Watsonville, Santa Cruz Co., Cal.

THOS. BUTTERFIELD & SON,

Breeders and Importers of the



**Cotswold, Lincoln, Leicester,
Texel and South Down
SHEEP.**

ALSO, THE ANGORA COAT.

Now offer for sale the Pure Bred and High Grades. We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

THOS. BUTTERFIELD & SON,
3v4-10t Hollister, Monterey County, Cal.

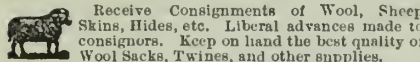
FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed. Persons living in Utah or Nevada, by giving timely notice, may have stock delivered on their way westward, thereby saving the cost of freight back. 26v3-tf

ROBERT BECK.

**WATT & MCLENNAN,
WOOL COMMISSION MERCHANTS,**

625 Sansome street, corner Jackson, SAN FRANCISCO.



Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

THE OLD

Maple Leaf Nursery.

Has constant varieties of ORNAMENTAL TREES AND SHRUBS; also a large assortment of Choice perennials to Green House plants and Bulbs, and Flower Seeds of all kinds, are for sale by

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

H. K. CUMMINGS, 1858. **J. M. MAXWELL,** 1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer. 4v23-1y

GEORGE HUGHES,

FRUIT, PRODUCE,

And General Commission Merchant,
313 and 315 Washington street,
Between Front and Battery.....SAN FRANCISCO.

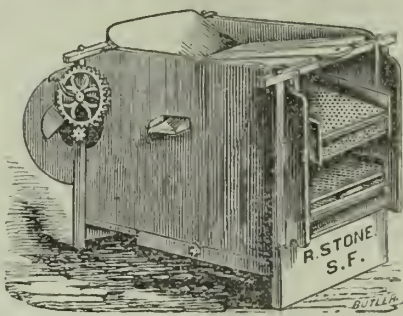
HOUSE ESTABLISHED IN 1850.
14v3-6m

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

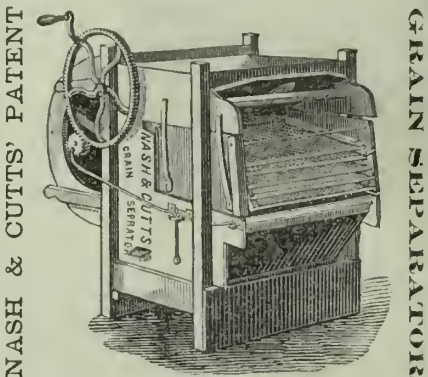
WIESTER & CO.,
3v4-3m 17 New Montgomery street, S. F.

**THE PATENT
Novelty Mill and Grain Separator**



Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to **R. STONE,**
1v4-3m 422 Battery street, San Francisco.



Three sizes, warranted to clean from 60 to 200 bushels per hour, according to size. Prices, \$40, \$50 and \$75. First Premiums at California State Fairs in 1870 and 1871. Warranted to separate Mustard Seed, Cheat, Barley and Oats, from Wheat. Cleans the Morning Glory Seed from Alfalfa.

Circulars mailed on application. Address **NASH, MILLER & CO.,**
Sole Proprietors and Manufacturers, Sacramento, Cal.
N. B.—All the Nash & Cutts Steam Separators are fully warranted. 3v4-15t

C. P. SHEFFIELD, N. W. SPAULDING, J. PATTERSON.



Pacific Saw Manufacturing Co.,

17 and 19 Fremont Street, San Francisco.

REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted. 11v3-tf

15v3-3m

Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine.
Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address **S. WYNKOOP & CO.** 2054, Ridge Avenue, or P. O. Box 2726, Philadelphia, Pa. 22v3-3m

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (alike on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

E. W. HAINES, General Agent,

17 New Montgomery street, Grand Hotel Building,
SAN FRANCISCO.

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CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list. 15v23-3m

HELY & JEWELL, Agents.

**Endless Chain Elevator,
FOR RAISING WATER FROM WELLS.
BALL & CRARY, Patentees.**



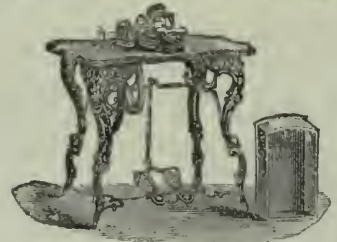
The inventor claims that his ELEVATOR excels any other apparatus that has ever been brought before the public for the purpose of raising water from wells. Its chief merits are: First—The water is obtained from the well in a purer and colder state, for the reason that it is drawn from near the bottom. Second—It is operated with the least difficulty, particularly in lifting a certain amount of water from any depth in a given time, as compared with any other mode. Third—It obviates all necessity for going down into the well in putting in the machinery, or for repairing the same, as such labor can be performed at the surface. Fourth—It can be easily taken out of one well and transferred to another. Fifth—It is less liable to get out of repair—but when repairs are necessary they can be easily made by any one; the action made by the Endless Chain and huckets keeps the well properly ventilated; there is no possibility for the person operating it (nor for a child) to fall into the well.

P. S.—These Elevators are now being made by new machinery in St. Louis, Mo., and will be sold at a reduction of \$10 or more on former prices. They will be on exhibition at the STATE FAIR in Sacramento this season

For circulars and particulars address

JOHN A. BALL,
2v4-tf Grass Valley, Nevada Co., Cal.

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FLORENCE**



Will sew everything needed in a family, from the heaviest to the lightest fabric.

**IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,
Than any other machine.**

If there is a Florence Sewing Machine within one thousand miles of San Francisco not working well and giving entire satisfaction, if I am informed of it, it will be attended to without expense of any kind to the owner.

SAMUEL HILL, Agent,
19 New Montgomery Street,
Grand Hotel Building, San Francisco.

Send for Circulars and samples of the work. Active Agents wanted in every place.

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WEIGH

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Wagons,

HAY,

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**THE UNITED STATES
STANDARD.**

6,000 to 40,000 Pounds Capacity.

THE SAME SCALE IS USED FOR WEIGHING CATTLE, HOGS, ETC.

Scales of every kind. Address

FAIRBANKS & HUTCHINSON,
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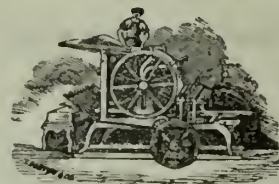
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AT REASONABLE PRICES

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Executed correctly and with dispatch.

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'Mid pleasures and pal-a-ces,

"Live and Let Live,"

Having recently added a large assortment of new and elegant modern Types, together with one of R. Hoe's STEAM CYLINDER JOB PRESSES, we are prepared to execute all kinds of Fine Printing equal to the best work done either here or in the East, and at prices as low as in Chicago—or anywhere else.

Catalogues for Nurseries neatly printed. We have a great variety of wood engravings especially suited for this work. Orders solicited.

Address:

SPAULDING & BARTO,
(P. O. Box 582.) 414 Clay Street, San Francisco.

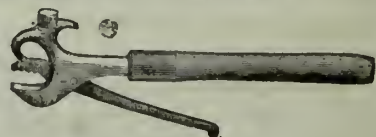
To Parties About Building.



A person who is competent to prepare plans and take charge of the construction of Dwellings, Mills, Bridges, or other architectural improvements, will make favorable engagements with persons or corporations in the city or the interior. Has had full experience on this coast, and can insure good satisfaction.

Address **EDW. W. TIFT,**
5-v24-sa No. 626 Jessie street, San Francisco

LONGSHORE'S COMBINATION TOOL.



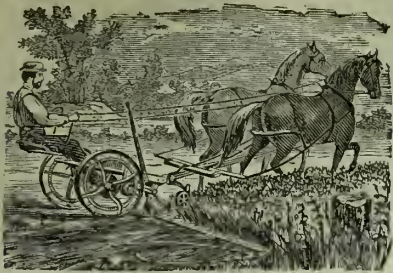
This device is just what its name indicates. As a KITCHEN TOOL it is indispensable. It will fit and lift with perfect safety, any Stove Lid, Frying Pan, Pie Pan, Pot, Kettle, or any other vessel or dish used about a stove. It is a complete tool for stretching carpets, driving tacks, pulling tacks, &c., &c. It answers the double purpose of hammer and pincers, and is also a good Nut Cracker. It is made of the best malleable iron, and the Hammer, Pincers and tack puller are all hardened so as to stand the roughest usage. An Agent is wanted in every town on the Pacific Coast to sell this valuable little implement. Retail price fifty cents. Special inducements to agents.

WIESTER & CO.,
17 New Montgomery st. (under Grand Hotel), S. F.

**THE ONLY RELIABLE COVERING FOR
THE FOOT.**

**Good Cable Screw Wire
BOOTS AND SHOES.**

CHINESE SERVANTS AND LABORERS
of all kinds furnished at the shortest notice by applying to **WOLF & CO.,** 610 Pine Street, San Francisco. 13v24-3m



IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years SUCCESSFUL TEST. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are,

1st—A JOINTED PITMAN, which allows the knife or cutter-bar to WORK ON ANY ANGLE WITHOUT EXTRA STRAIN OR FRICTION.

2d—It can be run with a STIFF OR LIMBER POLE, as DESIRED.

3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.

4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.

5th—A new device of the Pitman, expressly designed for California, by which it will take up its own weir, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.
Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draft, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!
These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,
Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide. This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at Marysville by
HILL & KNAUGH,
And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal. 14v2-3m

A New Firm.

JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento.
G. R. JEWELL,
T. B. FLINT. 16v3-3m

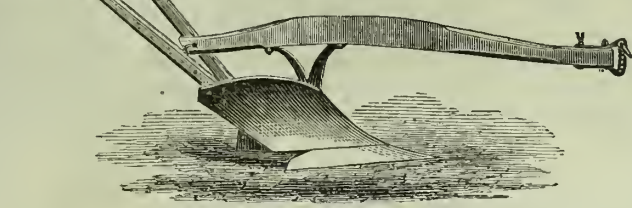
THE "JONES" PLOW.

Manufactured by the Naperville Agricultural Works, Naperville, Illinois.

First they are unlike other Plows—Because they completely pulverize the soil, and run perfectly true. Because—They all have Adjustable Beams, and CAN BE USED BY EITHER TWO OR THREE HORSES. Because—THEY SCOUR WHERE ALL OTHERS FAIL. Because—THEY DO TWO KINDS OF WORK, thus saving to the farmer ONE PLOW.

Because—They are the lightest draft plow made, and will not kill your horses. Because every plow is warranted and can be tried, and if it fails may be returned. Because they are honestly made, and will wear one third longer than

DOUBLE SHIN,
Chemically Hardened Steel Mould Boards.



and the best quality of Lumber. They are HARDENED ALL THROUGH (not case-hardened, or merely hardened on the surface,) but by the use of CHEMICALS KNOWN ONLY TO OURSELVES, we refine the steel and MAKE EVERY MOULD BOARD CLEAR THROUGH AS HARD AS FLINT.

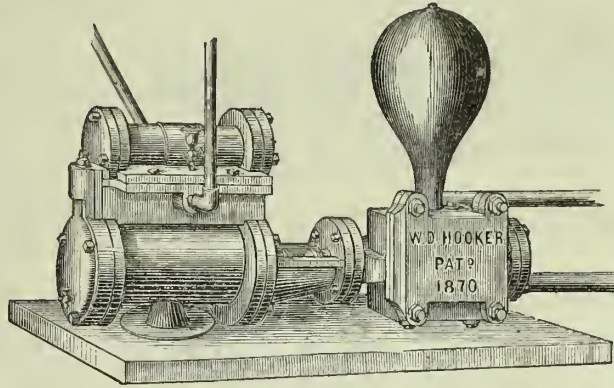
The Jones Plow completely refutes the old notion that no plow can work equally well in stubble or sod. We warrant them to do it in every instance. No matter if every other plow manufacturer has failed to make such a plow. We have succeeded. Let true merit decide; if you have any doubt, TRY THEM—WITH YOUR FAVORITE, and keep the one you like best.

TREADWELL & CO.,

July 27-cow

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Hooker's Patent Direct Acting Steam Pump.



SIMPLE, CHEAP AND DURABLE.

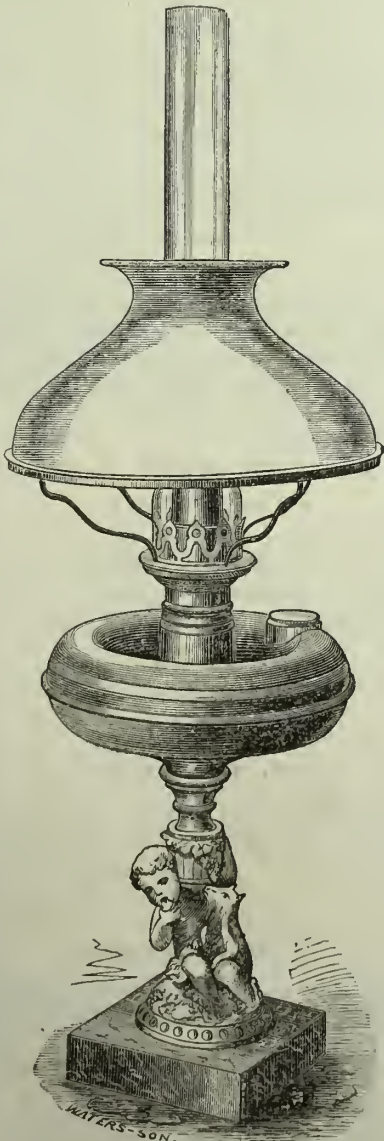
Adapted for all purposes for which Steam Pumps are used. Manufactured by the inventor and patentee, at Hooker's Machine Works, No. 112 Spear street, San Francisco.

SEND FOR CIRCULAR.

N. B.—Also manufacturer of Hooker's Deep Well and Double-Acting Force Pump. Received the Silver Medal awarded at the last Mechanics' Fair in San Francisco. 23v24-1am6m-bp

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (O) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (O), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so the oil is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

State and County Rights for Sale. Agents Wanted.

The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

I. L. MERRELL,

No. 148 J Street, Sacramento. 14v11

STUDEBAKER WAGONS

Have become The Standard Wagons of the Pacific Coast.

For QUALITY, DURABILITY, LIGHT RUNNING, GOOD PROPORTION, AND EXCELLENT STYLE, They Have no Peer.

IRON AXLE, THIMBLE SKEIN, HEADER AND SPRING WAGON, Of all sizes, with HEAVY TIRE riveted on, always on hand and sold for \$100 to \$165.

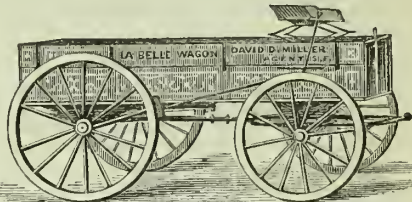
Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES AND SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed, As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

16v3-3m E. E. AMES, General Agent. Factory and Depot, 217 and 219 K street, SACRAMENTO.

Thimble-Skein Farm Wagons.



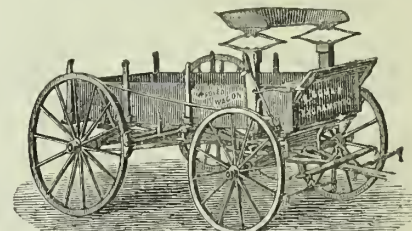
JUST RECEIVED FROM THE CELEBRATED ZUFELT & CO., Sheboygan Falls, Wis., established in 1850. Also the Celebrated La Belle Wagon, Manufactured by FARNSWORTH, WOODWARD & CO., At Fon du Lac, Wis.

PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.
3 in Thimble Skein. \$120 3 in Running Gear. \$90
3 1/2 " " " 125 3 1/2 " " " 95
3 3/4 " " " 130 3 3/4 " " " 100
4 " " " 140 4 " " " 110

Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Backs with California Brakes, in lieu of Boxes, \$5 additional. Above prices include Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

DAVID D. MILLER'S, IMPORTER AND MANUFACTURER, 715 Market street, near Third, San Francisco. 19v4-9m



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE, San Quentin, Cal. ap22-3m

THE CALIFORNIA Safety Gas Lamp.



This New Gas Lamp takes the place of the Candle, the Coal Oil Lamp and Coal Gas, and costs only

One-Half Cent per Hour. Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. NO CHIMNEY IS REQUIRED.

It makes its own gas as fast as it is required, and when the light is blown out the gas ceases to be generated.

One Burner is Equal to Six Candles. This Lamp burns Refined Petroleum, Gasoline, Danforth's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit.

WIESTER & CO., 17 New Montgomery street, Grand Hotel, S. F.

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO., Manufacturers of and Dealers in Monuments, Headstones, Tombs, MANTEL PIECES, ETC., 421 Pine street, between Montgomery and Kearny, SAN FRANCISCO. 21v2-1y

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To Inventors in the Pacific States.

The best, speediest, and surest method for you to obtain patents, file caveats, or transact any other important business with the Patent Office at Washington, or with foreign countries, is through the agency of DEWEY & CO., PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS, SAN FRANCISCO, an able, responsible, and long-established firm, and the principal agents on this side of the continent. They refer to the thousands of inventors who have patronized them, and to all prominent business men of the Pacific Coast, who are more or less familiar with their reputation as straightforward journalists and patent solicitors and counsellors. We not only more readily apprehend the points and secure much more fully and quickly the patents for our home inventors, but with the influence of our carefully read and extensively circulated journals, we are enabled to illustrate the intrinsic merits of their patents, and secure a due reward to the inventor, besides serving the public who are more ready to give a fair trial, and adopt a good thing, upon the recommendation of honest and intelligent publishers.

To Obtain a Patent,

A well-constructed model is generally first needed, if the invention can well be thus illustrated. It must not exceed 12 inches in length or height. When practicable, a smaller model is even more desirable. Paint or engrave the name of the article, and the name of the inventor, and his address upon it.

Send the model (by express or other reliable conveyance), plainly addressed, to "DEWEY & CO., MINING AND SCIENTIFIC PRESS OFFICE, SAN FRANCISCO." At the same time, send a full description, embodying all the ideas and claims of the inventor respecting the improvement describing the various parts and their operations.

Also send \$15 currency, amount of first fee of the Government. The case will be placed on our regular file, the drawings executed, and the documents made up, and soon sent to the inventor for signing.

As soon as signed and returned to us with the fees then due us, it will be sent straightway to the Patent Office at Washington.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separated ingredients, sufficient to make the experiment (unless they are of a common and well-known character), and also of the manufactured article itself, must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case, the applicant has only to send us an exact description, and what is desirable to claim.

For designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances for design patents two photographs, with the negative, answer well instead of drawings.

We do not require the personal attendance of the inventor, unless the invention is one of great complication. Usually the business can be well done by correspondence.

For filing a caveat, which affords the inventor protection for one year, we only require a rough sketch, and a clear description of the invention.

It will cost inventors less to have their business thoroughly and speedily done through our agency than to patronize less able and responsible agents.

For further information, send a stamp for our illustrated circular, containing a digest of PATENT LAWS, 112 illustrated mechanical movements, and HINTS AND INSTRUCTIONS regarding the RIGHTS AND PRIVILEGES of inventors and patentees, which will be furnished post paid. Also a copy of NEW PATENT LAW of 1870.

DEWEY & CO.,

Publishers, Patent Agents, and Engravers,
No. 333 Montgomery St., San Francisco, Cal.

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Mercantile Director.

This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

OUR TABLE OF CONTENTS

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Our first issue for May consists of 24 pages, embracing FORTY-FIVE COLUMNS of important reading matter—mostly original and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, \$1. Subscribers to the MINING AND SCIENTIFIC PRESS or the PACIFIC RURAL PRESS will be supplied at half price.

Published by MURRAY, DEWEY & CO.,
At the Publishing Office of the Mining and Scientific Press and Pacific Rural Press, San Francisco.

ANNUAL EXHIBITION OF THE BAY DISTRICT HORTICULTURAL SOCIETY OF CALIFORNIA.

To be held at their New and Magnificent Hall, Corner of Post and Stockton Streets,
SAN FRANCISCO.

The Hall is well arranged and will hold over 8,000 people.

The exhibition will open on THURSDAY, August 22d, and continue for fifteen days.

The members of the Horticultural Society are determined to make this the grandest and most attractive exhibition ever held on this coast, and will introduce many new and pleasing features.

Over two thousand dollars in cash premiums will be awarded for collections of plants, flowers, fruits and vegetables.

Application for space should be made early to the undersigned, at his office or by mail.

Articles competing for premiums must be entered on or before Tuesday, August 20th, and delivered before 12 o'clock on Thursday, August 22d.

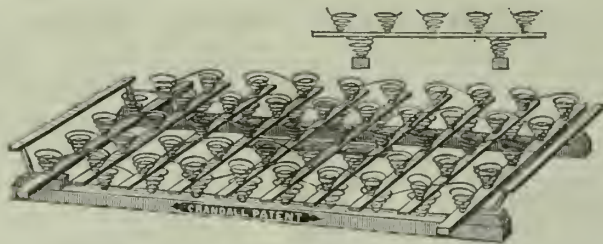
For Premium List, Rules and Regulations, and for all particulars, apply to

F. A. MILLER, Secretary,

aug3-21

Between the hours of 4 and 5 P. M. Room 9, No. 622 Clay street.

Do You Like a Nice, Clean Spring Bed,



ONE THAT WILL NOT GET OUT OF ORDER—WILL LAST YOU A LIFETIME?

IF SO, BUY THE

Crandall Patent Spring Bed.

Received First Premium, State Fair, 1870-71. Also last Mechanics' Fair, 1871.

MANUFACTURED BY COOLEY & GREEN,

938 Market Street.....SAN FRANCISCO.

123 Front Street.....SACRAMENTO.

1874-1883m

The Pacific Rural Press is an established success. Our earnest efforts to produce a first-class illustrated Agricultural Journal on this coast, upon a permanent basis—by giving reliable information in good and desirable form—have been decidedly appreciated. We have a list of worthy readers second to no weekly west of the Rocky Mountains. No journal on this side ever before met with such marked and substantial encouragement. Our patronage is still rapidly extending, and our patrons may expect constant improvement in our paper. We will not go backward, but onward!

A CALL UPON THE PACIFIC RURAL PRESS.—While at San Francisco we availed ourselves of the privilege of dropping in upon our friends of the PACIFIC RURAL PRESS, one of our most welcomed weekly exchanges. The firm of DEWEY & Co. has become a household word throughout the State, from the dignified and valuable character of their publications. These publications aim to meet the varied interests of California, and we are glad to know that they are all being sustained generously. During our trip through the State we met at nearly every point one or other of their issues.

Besides the RURAL PRESS, they publish the SCIENTIFIC PRESS, which ably serves the mining and other industrial interests of the district.

Recently they have added a monthly sixteen-page newspaper of special interest to wholesale and retail tradesmen, called the PACIFIC COAST MERCANTILE DIRECTOR.

In all these enterprises we wish our friends abundant success, and we shall long remember their cordial greeting extended a stray editor sojourning a day or two in their beautiful city.—Philadelphia Journal of the Farm.

GUAVA AND MANGO SEEDS.

Just received, a fresh supply of SWEET, STRAWBERRY, and SOUR GUAVA; MANGO; MANGOSTEEN; fine PALMS. Also a fine collection of Seeds of RARE SANDWICH ISLAND PLANTS; AUSTRALIAN BLUE GUM TREE SEED, and five other sorts; a general assortment of SEEDS, RARE PLANTS, BULBS, etc. At the Old Stand. Catalogues, per mail, free.

E. E. MOORE,
425 Washington street,
San Francisco, Cal.

5v4-1t

PURCHASERS please say advertised in Pacific Rural Press.

WILLCOX & GIBBS IMPROVED NOISELESS Family Sewing Machine IS THE BEST IN THE MARKET.

It is the Most Simple,

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Grass and Clover Seeds.

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Trees, Plants, Roots, Etc.,

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FOR THE HARVEST OF '72, INCLUDING HOADLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers, Kirby's Mowers and Reapers, Header-Wagons, Studebaker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Seythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

TREADWELL & CO.,

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PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, AUGUST 17, 1872.

[Number 7.]

The South Downs.

We give in our illustration this week, a beautiful engraving of the most elegant breed of sheep known to amateurs or fancy breeders. The originals were the property of John D. Patterson, of Westfield, Chautauqua Co., N. Y., and Brooklyn, Alameda Co., Cal, James M. Patterson having the charge of the Alameda branch of the business, to whom communications can be addressed.

The general characteristics of this breed are, a fine form, wool short, close and curled, and entirely free from spiky projecting hairs; the flesh is finely grained and of good flavor.

They are considered the most important race of sheep in England.

In prime American flocks, at two years old they will weigh from 100 to 120 pounds each. Their fleeces average from four to six pounds, according to the keeping and breeding of the flock.

They are not as hardy as some of the crosses between it and a few of the other short-wooled varieties; but still they rank among hardy sheep, and they are good workers, being able to travel further for their feed than any of the long wools. Their mutton sells in England for 3½ cents per pound more than Cotswolds or Leicester, and half a cent more than the other improved short-wooled varieties.

Ralph H. Avery, of Canastota, Madison county, New York, writes in regard to the South Downs, in agricultural Report for 1865, as follows: "My sheep are usually sent to pasture about the first of May, and put into winter quarters about the middle of November, making six and one-half months in pasture."

During the summer and autumn, I am to prevent them from becoming too fat, which I find very difficult. In this they differ from any other breed which I have kept. My only care during the season of pasturing is to put tar upon their noses two or three times, and give them a supply of salt once a week.

They are regularly fed three times a day upon clover hay. Occasionally at noon I feed them on cornstalks, wheat, oat or bean straw, for variety. No grain or roots are fed at any time. I think however a few roots, regularly fed, would be beneficial to their health. My sheep thus kept, are always healthy and in fine condition."

How far this breed of short-wooled mutton sheep would be adapted to our feed and climate, wool and mutton demand, has not perhaps as yet been fully demonstrated. We would like to hear from the growers of this breed in California.

SUGAR FROM HOODLUMS.—Were we as completely out of work as hundreds of the hoodlum element we see on the street, daily, we would try and hire an enclosed yard and shed, borrow a kettle, get a drayman to haul us a few loads of the over-ripe canteleups that are everyday thrown away, and make them into an excellent syrup, if not good sugar.

There have been 2,675 tons of wheat shipped from Antioch this season.

Wool in Boston.

A late review of the condition of the wool trade in the Boston market would seem to indicate that our caution to California growers was well given. Wool is not advancing in price, and the foreign receipts are simply enormous.

California wool is attracting much attention, but more on account of its comparative cheapness than any merit of quality; and brings no more than it did the same time last year, and no prospect of a rise. It is now easy to see that the high prices of last spring were purely speculative and that most buyers at high figures were losers from such investments.

Should the demand during the present month permit of free sales, holders will probably incline to be firmer in their views, but unless the outlook for Woolen Goods is more favorable, manufacturers are not likely to respond, and a dull reaction will inevitably result; therefore the more prudent Consignors will be likely to see their interest in meeting the market moderately, rather than entertain views which would, perhaps, bar the way to an early improvement.

California Wools

Continue to move slowly. Very little has been done in Spring Clip, and Fall Clip of last year is only in moderate demand. Prices are unimproved.

Receipts of Domestic Wool during the month were 8,727 bales and bags; Coastwise, California, 4,010 bales; Texas, 1,984 bales; New Or-

Civilized and Uncivilized.

Civilized men with white skins will agree to work in the harvest field for the season at \$2.00 a day and board. At the end of the first or second week they receive their dues, and knowing farm hands to be scarce, notwithstanding their agreement to work for the season, refuse to do another days' work without advance of wages. Another two weeks a further advance is demanded and generally obtained, only on account of the extreme scarcity of help.

If the farmer refuses to yield to the exorbitant demand, and for non-compliance with contract on the part of the laborer he refuses to pay, or retains a part as a guarantee of continued work, the civilized man utterly refuses to do another days' work; leaves, and more than likely within a week, by a remarkable dispensation of divine providence (?) the farmer's stacks or grain fields are found in a blaze.

Uncivilized Men.

By these we mean the "heathen Chinese." The farmer, after a year of doubt and uncertainty, after the bestowal of great labor and cost in the seeding of his land, with the prospect or not of a fair yield of wheat, finds himself confronted with the low prices for his grain, and with a lack of farm hands except at ruinously high rates.

As the only possible chance of employing laborers at a rate that will leave him a little something over cost of production, he applies to an agent of one of the Chinese companies in San Francisco, and obtains all the help he needs

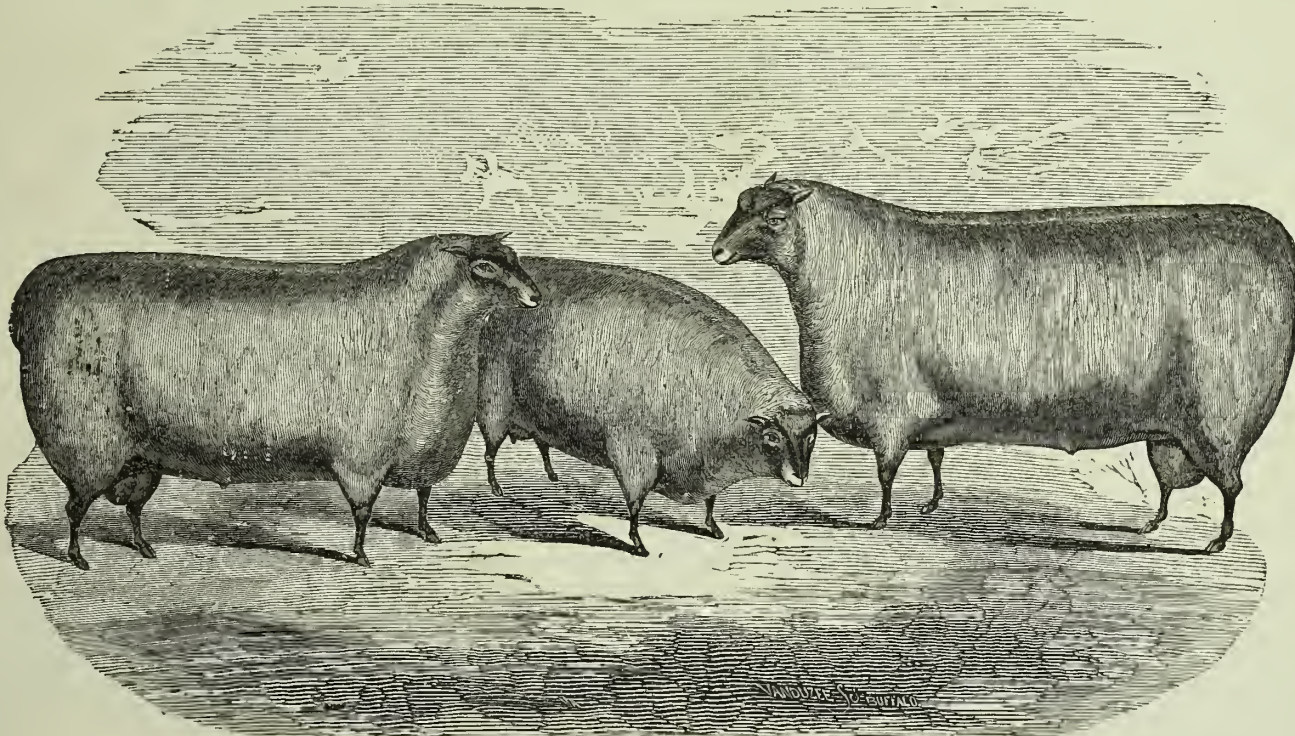
at a stipulated price for the season.

The wages when due are paid to the agent, and he, the farmer, has no trouble about any increase of wages during the whole season, or any annoyance from a non-fulfillment of contract on the part of the employed. Now, as to the propriety of employing one or the other of these classes of men, and of the right to do so, and as to which is the "heathen," let the world judge.

OUR COUNTRY EXCHANGES.—We find a difficulty every week in culling items enough from our exchanges, to fill a page of our AGRICULTURAL NOTES. It is a feature of our paper regarded with great interest by a large number of our readers, as showing the peculiarities that pertain to soils, climates and crops of the different counties, valleys and altitudes, throughout our greatly diversified geographical surface.

We never intentionally neglect to give full credit to the papers from which we obtain our notes of passing events, condition of crops, and live stock interests, which in every instance is letting the world know that a certain paper is printed in said County, State or Territory, of the Pacific Coast.

Too many of our exchanges are in the habit of saying that a certain paper "says" so and so, whilst they wholly neglect to say anything of their own county, or district of country they represent.



JOHN D. PATTERSON, WESTFIELD, CHAUTAQUA COUNTY, NEW YORK, IMPORTER AND BREEDER OF

SOUTH DOWN SHEEP.

Entered according to Act of Congress in the year 1860, by J. D. PATTERSON, in the Clerk's Office of the District Court for the Northern District of New York.

Those few of our farmers who four months ago were ready at almost any sacrifice to turn their cattle herds and almost anything else they possessed into sheep, embarking largely in wool growing as a specialty, will doubtless pause and take a second thought. It must now be admitted that the word of caution which we gave at the time in this regard, was just in place.

There is no principle of Agricultural practice better established, applicable to the farmer of moderate means, than the adoption of a decidedly mixed husbandry. Let him raise a goodly quantity and variety of farm-stock, grains and vegetables, and he is just sure of an easy independent competence. And what will apply to the smaller farmer, will with even greater force to the larger.

Wool in New York.

From Walter Brown & Son's Monthly Wool Circular for July, we extract as follows:—Owing to the continued lack of demand from consumers, the Wool market throughout July remained in the same dull state which we have had to report for the past four months, and prices have still further declined.

Transactions are yet too meagre to admit of other than nominal quotations for Domestic Wools, although in most cases Commission Dealers are unhampered with restrictions or limits from Consignors; nevertheless, the demand has been so light that few returns have been made, and Western shippers are almost as much in the dark as ever, regarding the value of their consignments.

leans, 1,156 bales; other Southern ports, 465 bales. Total, 16,312 bags and bales.

The imports as reported are: Liverpool, 1,810 bales; London 801 bales; Havre, 816 bales; Aspinwall, 23 bales; Montevideo, 151 bales; Vera Cruz and Havana, 3 bales; Curacao, 8 bales; Algoa Bay, 1,430 bales; Hong Kong, 16 bales; Rotterdam, 12 bales. Total, 5,128 bales.

Price current of California Wool at New York, August 1st. Spring Clip, fine 40 @ 45; Spring Clip, medium 42 @ 46; Spring Clip low grades and burry 33 @ 38; Fall Clip, A 1, 27 @ 33; Fall Clip, low grades and burry 23 @ 26.

COTTON MACHINERY FOR CHINA.—Messrs. Treadwell & Co., of this city, have furnished a steam engine and a complete cotton mill for China, which has already been shipped from this port to Hong Kong. The proper supplies also accompanied the same. Thos. Wood, of Philadelphia, is the manufacturer of the machinery, and sold the same by reason of advertising in the Press.

NEW EARLY POTATO.—They have a new invention in the line of potatoes, that promises to be a great acquisition. Instead of the "eyes" or "buds" being set in indentations more or less deep, in the new variety they project or stand out from the surface, rendering them much easier to peel. It is said they ripen seven and a half minutes earlier than the Early Rose variety.

CORRESPONDENCE.

Chicken Culture.

DEAR RURAL:—I have been puzzling my brain some time to know how I can earn some money, not but what my husband is generous with his earnings (husbands all are) but I want a little now and then for finery, etc. that I can call all my own. Now I have two little girls to care for, so it is impossible for one to leave home to earn anything; sewing and washing I don't like to do; but I have hit upon chicken raising. People that I have known since I came to California have made little fortunes at the business.

Before commencing, I would like to ask you a few questions, knowing your profound judgment on all subjects. First, do you think five hundred too many? if not, how many acres would need to be enclosed? how many houses, yards etc., would be necessary? I think in an article from you I read, they require a variety of food. Is salt injurious in their food? A friend living on the beach has been very successful in the business, and it would seem that the dead fish, water-soaked seeds, etc., the chickens pick up must be more or less impregnated with salt.

Twenty Egg Power.

How many eggs do hens usually lay before commencing to sit? I make the inquiry because we have a Brahma that has laid twenty eggs and still shows no inclination to sit. I have been told on good authority that hens never lay more than they can conveniently cover, now you would not advise me to put the twenty eggs under her (supposing she has laid the last to-day) would you? I have looked them over, selected the more elongated for use, put the rest away until "Cady" shall choose to act like a sensible hen, stop laying and go to setting.

My husband says that about selecting the eggs is nothing but an old woman's whim; he even laughed and made considerable fun about it. What do you think, is there any way of telling the sex by the shape? After the eggs are hatched what food is best for the little chicks? a neighbor has lost a great many this summer by feeding the usual mixture, corn meal and water. Now if you will take pity on a tyro and answer my questions you will greatly oblige your friend

MARION.

Leafy Glen, Aug. 1st, 1872.

There seems to have been a fatality attending every attempt to keep as many as 500 hens together anywhere in California. That 50 or 60 can be kept together and remain generally healthy, with proper care is equally true; so that if the desire is to keep as many as five hundred we would recommend dividing them up into colonies of 100 or less, with suitably arranged apartments for each.

Hens having a range upon an ocean beach are always healthy, so far as it regards any food they may glean from it. Lime in any form is beneficial to hens, and this is found in all manner of shells they may pick up. Soda is sometimes mixed with chicken feed to correct too great an acidity, and salt is but the chloride of sodium and we doubt whether any animal will eat more of it than is needful, if left to itself to choose its food.

Common hens seldom lay more than fifteen or eighteen eggs at a "laying;" twelve to fifteen being as many as they can well cover in sitting. Brahmas have been known to lay thirty, and in a few instances nearly forty at a laying; but it is exhaustive, so that when they have laid say twenty-six, enough to set two hens, they should be reasoned with, or shut up in a small coop with a clean board floor on short allowance for a few days.

In regard to the sex of eggs, we have heard it asserted that those which were perfect in their form, a regular oval, are hens, and that those having a raised band or protuberance around the egg near the middle and the egg perhaps a little longer than the others, were always roosters. We would suggest that "Marion" set one hen with the long eggs and another with the others, and keeping the broods of chicks apart till sufficiently developed, test the truthfulness of the "old woman's whim," for the benefit of chicken culturists.

Corn meal and water is often mixed too wet for the health of very young chicks. It is a good plan to give them corn cracked quite fine, but not ground; and throw it dry upon the ground, that they may even hunt for much of it among the sand and pebbles. Dry corn bread crumbled, is better for them than raw corn meal and water, till they are two weeks old. They should have access to water, but it should not be swallowed with their food.

A Floating Meadow.

EDITORS PACIFIC RURAL PRESS:—I was reminded yesterday of my promise to tell you about a "floating meadow," by seeing just down the gulch a green-covered pool on which a number of waterflies were racing back and forth. How they glided to and fro among the little plants that grew upon the surface like a garden. I thought what a strange kind of foot they must have to be able to move so gracefully over the surface. I should not be surprised to find that they kept their feet quite oily, and by this means their hollow, tubular legs are prevented from sinking into the water. And this green scum which seemed so commonplace was to the waterflies a floating meadow.

It recalled to mind the appearance of the river Teche, in Louisiana, when in the autumn of 1863 I ascended it in a little steamer. The surface of the water was thickly covered with a plant whose roots were not attached to the bottom, but seemed to hang loosely in the water, while the leaves spread out on every side like turnip leaves, rising in some places four or five inches above the water. Standing on the bank at St. Martin's I could see those in the middle of the stream following the more rapid current of the river, while near the bank where the water was shallow and the current slight, their motion was scarcely perceptible. I frequently saw birds hopping about, like larks in a grain field, seemingly quite at home on this slowly floating meadow.

When our steamer passed along it merely divided them and the splashing wheels turned some of the plants root uppermost, but the space soon closed, all looking green and almost secure enough for a stroll over it. The question that puzzled me was—where were all these plants going to? The Teche river soon enters the Berwick Bay, and the great briny sea catches the little plants one by one. Ever in motion from their tiniest being, how are the seeds carried back to the little bays and coves along the river where plants constantly spring up? Perhaps some student of botany can answer.

But there are other floating meadows far out at sea, in comparison with which, the little Teche river is nothing. In mid ocean are vast patches of seaweed—so thick, so entangling—that the stoutest ships cannot force a passage. Some kinds of seaweeds have been found in the South seas which resembled great logs floating on the waves. On them sailors have seen scallions basking and sporting. In comparison with these immense stems our redwoods and pines dwindle to twigs and saplings. How luxuriantly these meadows must grow, with plants over a thousand feet long! It is not known, I believe, whether there is any animal which chooses such plants for food, but if there be he may graze without danger of stent on such a verdant meadow as this. D. G. INGRAHAM.

A Plea for the Birds.

EDS. PACIFIC RURAL PRESS:—To me it seems unjust that while the game laws of this State apply only to quails and a few other birds and animals, doves and many other smaller, useful and harmless birds are left unprotected from the shots of lazy loafers who are able to obtain a quantity of ammunition and a shot-gun to gratify a brutal desire to kill at any and all times of the year, every undomesticated bird or animal within their reach, whether wanted for food or not; and regardless of the wishes and rights of owners of ranches on whose grounds they trespass, by breaking down fences which they find it inconvenient to climb over, appropriating fruit, trampling grass and shooting birds without even saying, by your permission, and with a recklessness—I was about to say of an uneducated savage, but Digger Indians and "Heathen Chinese," although their education in matters of humanity and common courtesy may have been as sadly neglected, yet their natural instincts prompt them to a higher regard for the feelings and rights of others, than is manifested for this class who effect to despise them.

Rights of Parties.

I notice that such, who, ever ready to take advantage of the good-nature and liberality of others; are the most jealous of their own rights if, in their own opinions, they are in the least infringed upon wherever they have the control of any property.

However deficient a man's early education may have been in these matters, after he arrives at years of discretion, common-sense, and a due regard for decency should teach him that if game is worth anything, the owner of the ranch on whose grounds it has lived and fattened, is best entitled to it while it remains there, and if he does not capture it himself, the inference is that he prefers the pleasure of its living company to the profits arising from killing such game; and who shall say he has not a perfect right to enjoy that pleasure unmolested.

To what extent will the present laws of this State sustain the rightful owners of land in excluding gunning from their premises?

A Law Wanted.

Would it not be a matter of sufficient interest to your readers—especially recent settlers in

this State—to warrant you in publishing all laws relating to undomesticated birds and animals? Then if the people wish to have them changed so as to protect other birds or animals not therein mentioned, one plan might be to circulate petitions to that effect; another, to vote for no man who would not in turn pledge his vote and influence to bring about the desired result; in which event we might live to enjoy the satisfaction of seeing placed upon the statute books of this State, laws for the better, if not complete protection of our natural friends and allies, the innocent and harmless birds.

I. A. H.

Colfax, Cal., Aug. 1st, 1872.

The Rural as an Educator.

EDITORS PACIFIC RURAL PRESS:—Gentlemen: Please accept my, yes our most earnest thanks for the donation of your paper to our school. The introduction of newspapers into our county public school rooms is an experiment with me, and one which I believe has not been tried elsewhere in this county.

I know that teachers may exercise a great influence over the intellectual habits of their pupils and through them, even over their parents and friends. In the country the children are not apt to read to any extent. My aim is to interest them in the current events, and by discussing the various topics teach them how to read and how to love the information gained, believing, thus to save many an intelligent man and woman to society who would otherwise be indifferent.

I consider your paper the best adapted to my purpose of any paper in the State, and the children often remark that is the "best paper we have" among four; indeed, this and the county paper is the only one they care to read.

My endeavor is to make ours a live school room. You may consider this the cause of our possessing about forty silkworms, which we have provided with a table, and the course of whose growth we have watched since they were two weeks old. To-day they have begun for the first time to spin, and the interest shown by the children in the process can not be computed.

Each time our Press arrives all are eager to make the first search for items concerning silkworms. Believe me, gentlemen, that I express only a part of the pleasure and profit derived from your columns by pupils and their teacher.

EMILY M. JORDAN.

Mission San José, Aug. 6, 1872.

Redheaded Woodpecker.

EDITORS RURAL PRESS:—I noticed an article in your paper, how to keep birds out of fruit trees. My plan is to plant a pole some two or three feet taller than the tree up through the limbs; supply myself with one number of the RURAL, an old ax, robe or blanket, seat myself under the tree, and when a bird lights on the pole, strike hard, and my word for it you get the bird. By night you will have gained much valuable information and many birds. J. M. Lake Port, Aug. 4, 1872.

Where there is but one tree, and that large enough in the top to sufficiently hide the operator from the bird's view, this plan will succeed very well; but it is necessary to understand; first, that this kind of bird alights on the side of the pole, hugging it close, and not on the top; and will always light on the pole before descending into the tree. And second, that it is necessary to strike a hard blow about four feet from the ground, hitting it on the same side on which the bird lights.

The rationale of which is, that whilst that part of the pole struck goes one way, the top of the pole goes an inch or more the other way or towards the bird and with great violence, completely knocking the breath out of him; but it will hardly pay where a considerable number of trees require to be watched.

Appreciative.

EDITORS PACIFIC RURAL PRESS:—I herewith enclose you four dollars as renewed subscription to your most valuable paper. Four dollars is indeed a small sum to expend for so much valuable information as is contained weekly in the columns of the RURAL PRESS. You gentlemen not only deserve the support of all the farmers of California, for your successful efforts in furnishing them so reliable an agricultural journal to guide them in their work, but the good-will and thanks of every man in the State. There can be no more lasting or greater service done to a State, than by the education of its producing classes and intelligent cultivation of its soil; for herein rests at last all permanent and solid prosperity.

With many wishes for your future success, and for a more general appreciation of your efforts, I remain, very truly,

J. W. B. SHORN.

Lake Vineyard, Los Angeles, July 22.

Eastern Trees Coming.

EDS. RURAL PRESS:—At the State Fair in Sacramento last year, I noticed large exhibitions of fruit from the Atlantic and Western States, some of it and particularly winter apples from Iowa and Kansas, equalling, if they did not actually excel our own excellent fruits. I have a list of a few of the best apples there exhibited, and it has occurred to me whether I cannot obtain young trees for orchard setting from Eastern nurseries with advantage and profit. Please tell me at what season of the year it would be best to order them.

M. M.

Ione Valley, Aug. 12, 1872.

In all the Western States, as early as October or November, they have sufficiently severe frosts to denude nursery trees entirely of their leaves. When this occurs, the trees are in their very best condition for transplanting, and any time from that, on to winter they could be transported without any difficulty, and at an early season we expect advertisements of nursery stock from the very parties who last year forwarded their fruit specimens to our State Fair.

Eastern growers are quick to perceive by the meagerness of our advertising columns that as a State we are wanting in nursery stock and are themselves only too ready to supply the deficiency. We believe, however, that there is no necessity of sending East for a single tree. There are numerous nurseries of unnumbered varieties of well grown trees in California, that ought to supply and can, every reasonable demand. All that is necessary, is to let the public know where to find them.

Silk Culture in Utah.

We are permitted to make the following extract from a letter received by I. N. Hoag, Esq., Sacramento, from a prominent silk grower of Salt Lake City, written on the 15th of July, 1872.

A few days ago, I expected to be able to ship to France from five to six thousand (6,000) ounces of silkworms eggs from President Brigham Young's cocoonery. But, alas! Mr. R. Wimer, its present manager, has lost in five days by death over one million of his worms, and the balance have partaken the same fate, except about one thousand which have been raised in the city.

Now what is the true cause of that awful mortality? This problem is a complex one and difficult to be solved. Having asked my French correspondent's opinion on that matter, I will publish his answer for the benefit of our silk-growers. As for me, I do not believe at all in raising the silkworms on a too large scale. I will never feed more than 300,000 worms in the same house, but I will try to raise other small broods in separate cocooneries."

LOUIS A. BERTRAND.

Horse Pulling at the Halter—Remedy.

S. M. Moore in Western Rural says:—I see in a late issue of your paper a plan for breaking horses from pulling at the halter. I will give you my plan, which I have practiced and have always succeeded in breaking the worst cases in a very short time. Any kind of a rope or halter will answer the purpose, having sufficient length to pass around a post and back, passing between the fore legs, under the girth, to the hind leg. Fasten just below the knee joint. Have something on the opposite side of the post to prevent the halter from dropping to the ground, allowing the halter to slide around the post, when the horse commences to pull. The first effort in pulling will bring forward the hind leg, and leave the horse in a sitting posture, unless he should spring forward, which he is almost certain to do. After the first pull, not being full convinced but what he ought to break loose, he may be induced to try the second time, but the pull will be light. After the second trial, there is no rattle trap yet invented that could frighten a horse bad enough to make another effort at breaking. A few trials will effectually break any horse. It is simple, cheap, and perfectly safe.

ENAMEL FOR COOKING UTENSILS.—An enamel for copper cooking utensils is made by fusing together 12 parts white fluor-spar, 12 gypsum and one part borax, and dissolving the mass in water to a thick paste which is applied as a paint to copper vessels and when dry this rendered adhesive by being thoroughly baked.

THE SWINE YARD.

Swine—Breeds and Treatment.

The most approved breeds of swine seem to have derived their valuable qualities from crosses more or less frequent between the small and thrifty black or brown hog of Siam, or the fat little China hog, which is white, and the large, coarse breeds of Great Britain, possessing less symmetry and aptitude to fatten, but more hardihood, fecundity and adaptation to our climate. The China and Parkerson was the favorite hog of our fathers. It was a good spotted hog—perhaps more akin to the Bedford or Woburn. The Betts, a cross between the Berkshire and Irish Grazier, was quite popular twenty-five years ago, but defective in two points; it was too small in the chest, and had too little hair for its protection in winter. The Suffolks also lack hair, but have symmetrical, delicate, well balanced forms; and as they possess a large proportion of China blood, they inherit the fattening properties of this breed to a wonderful degree. It is stated that their live and dressed weights sometimes differ less than one-ninth. The Berkshires are more hardy and larger than the Suffolks, and rival them in beauty and fattening qualities, with perhaps less grossness of flesh. They are one of our best breeds, but not so uniformly large nor so beautiful in color, being black, as two white breeds, one a cross between the Berkshire, Irish Grazier, and Woburn, and the other a cross between the Suffolks, Irish Grazier and Chester whites. The results in breeding and fattening these two crosses have been almost equally satisfactory and uniform. Either can be fattened at any age, but, for family use, make the most delightful, tender and delicate pork when killed at less than a year old. If pushed all the time they would make large hogs at that age.

With ordinary treatment in rearing, and four months' fattening, the former will generally weigh, at ten months old, from 175 to 200 pounds net; and at eighteen months old, with two and a half months' fattening, about 350 pounds net. Chester whites, with ordinary treatment in rearing and three months' fattening, usually weigh, at nine or ten months, about 130 to 140 pounds net; at fifteen months, 280 to 300 net, and when grown, say from two to three years old, from 400 to 600 pounds net. The Chester Whites have long, round bodies, short head and legs, are hardy and prolific, and greatly admired for their beauty.

Treatment.

Feed sucklings sows and their pigs well, keep them safe and comfortable, and let shoats and dry sows glean grain and potato fields and run on clover at the proper seasons, gather the mast and all the waste from the kitchen, dairy and stable. When there is not sufficient food from these various sources to keep them in a healthy, thriving condition, give two or three ears of corn to each hog daily. But as we keep but few stock hogs through the winter, the gleanings of the corn fields, etc., is generally good feed for them, except when snow covers the ground. Fatten three months on corn and pumpkins. A considerable saving of grain—about one-third—can be made by grinding and cooking, and mixing cooked pumpkins or potatoes with it. The economy of cooking depends upon the relative prices of corn, pork and labor, and the conveniences at the place of making trial.

Quality of Pork Influenced by Food.

The following remarks of a correspondent of the *Utica Herald*, on the management of hogs, deserve careful attention:

"The quality of pork is greatly influenced by the feed. The dairy makes poor pork—flabby and soft—pork that will fry away much, and what is left is worth little. This is the case whether milk or whey is fed. But it is remunerative to make this pork; it is therefore made. If you want pork for your own use, solid, bearing the heat, and a sweet morsel when cooked, you must feed the grains.

Old corn makes perhaps as good pork as anything. Peas are excellent, and pay well. We used formerly to fat with peas with good results; but a mixture of these, or of the grains, is good. Soak, and then feed, and give cold water to drink.

Cold water, also, to cool the heated body of the animal in hot weather, is necessary,

that is, access to water—better if showered or dripping copiously, as we have a case in town, where the race of a mill is made to do this, keeping the hogs and the pen clean and cool. There is evident comfort and prosperity in this pen. There is little or no stench, which effects pork, making your finest Berkshire taste strong. Plenty of litter absorbents are wanted.—Any dry material will do, particularly dry muck, or the cooling sawdust, or dust from the road. When will our farmers avail themselves of this, and thus increase largely the manure pile, abate a nuisance (in the escaping effluvia), and improve the quality of their pork?"

HOME AND FARM.

SOIL FOR TEA.—The business of growing tea has not been, as a general thing, successful in this country, although at present in many parts of the west fine grades of tea are successfully grown. Efforts have been made, from time to time, in various parts of the south to grow the plant, and the same result has in nearly all cases followed, namely: that it was a failure.

Chinese and others who have visited this country have assured our agriculturists that our climate is just suited to the growth of the plant, but that our soils fail to contain several elements found in the tea soil of China. What these elements are, therefore, are important.

The Commissioner of the General Land Office has received several specimens of soil or clay from China, in which the finest grades of tea have grown, for analysis and examination. These specimens, which are named "Pakh Koi Bee" and "Tsan Tan," were securely packed in air-tight vessels, and have been sent to the Geologist of the Land Office Mineral Museum, Professor Winter, who will make the required analysis, which, when complete, will be explained in full and made known to the public, and will undoubtedly be very valuable.

TREES IN PASTURES.—It is a fact that all careful farmers must have noticed, that a tree seeming ever so thrifty and of whatever kind, to which cattle have access, and under which they stand, will soon die. In the case of solitary shade trees in pastures or standing by the roadside, this is a common occurrence, and the question naturally arises, why is it? First, rubbing is injurious, and, if persisted in, will commonly destroy them sooner or later. But if the trees be cased so that their necks will not touch it, death will ensue just as certainly if they are allowed to trample around it. But why should tramping the earth destroy the tree? The roots of plants need the air just as much as do the leaves and the branches. If it be all shut off, so that none which is fresh can get to them, they will exhaust the supply on hand and then die for the want of more.

WEEDS.—Novices commonly allow weeds to grow several inches high before they think of clearing them out and destroying them. Now the secret of cheap and successful culture is to kill all weeds before they come up. Go over the bare surface of earth as often as once a week, and pulverize it thoroughly with a rake or skimmer. This will kill every weed just as it is starting, with less than one-tenth the labor required to kill them when several inches high. Do it often and thoroughly.

SUGAR CANE IN LOUISIANA has degenerated, in consequence of growing the same species in the same soil, without changing the stock. At a meeting of planters, an agent was appointed to visit Java and Sumatra, to select new varieties of East India sugar cane. This measure is expected to infuse new vigor into sugar planting, which has become of late years almost unremunerative.

NEW ENGLAND FARMS.—The cash value of farms in New York has doubled during the last ten years, while the value of the implements have increased from twenty-five to forty-five millions of dollars in value.

"EVERY cow should fatten one pig" is an old rule and a good one; that is, the daily product of a good cow should be in buttermilk and whey enough to feed the pig, after the cream and cheese are extracted.

Hoe frequently around newly planted trees. It is better than mulching with any material, as the fresh stirred soil admits air, light and heat, and absorbs the dew of every night.

MISCELLANEOUS.

Relative Merits of Rubber and Leather for Belts.

Rubber will not last one-fourth as long as leather. When once it begins to give out, it is next to impossible to repair it; while wide bands cannot be used for or cut up into narrow ones as leather ones can be.

Leather belts may be used over and over again, and, when of no further value for belts, can be sold for other purposes.

A rubber band costing hundreds of dollars, may be spoiled in a few moments by the lacing giving out, and the band running off into the gearing, or by being caught in any manner so as to damage the edge, or by stoppage of either the driving or driven pulley. A few moments of quick motion or friction will roll off the gum from the canvas in such quantities as to spoil the band, while leather belts may be torn or damaged, yet are easily repaired.

Should a rubber or gum belt begin to tear by being caught in the machinery, if the rent strikes the seam, it is most certain to follow it, even the entire length, if the machinery is not stopped. It would be impossible to tear leather in like manner.

Oil in contact with rubber belting will soften the gum; and rubber, gutta percha, and canvas belts will continue to stretch as long as in use, rendering it necessary to shorten them continually.

During freezing weather, if moisture or water finds its way into the seams, or between the different layers of canvas composing these bands, and becomes frozen, the layers are torn apart, and the band is spoiled; or if a pulley becomes frosty, the parts of bands in contact with it will be torn from the canvas and left on the pulley. Also, gum belts will not answer for cross or half cross belts, for shifting belts, cone pulleys, or for any place where belts are liable to slip, as friction destroys them.

A well made leather band, if properly looked after—the width and pulley surface proportional to the amount of work to be done—will last twelve, fifteen, or twenty years, and yet he of value to work over into narrow belts.—*Scientific American.*

HISTORICAL LESSONS FROM A BRICK.—Who would suppose that an humble brick could be capable of imparting valuable and important information, even to corroborate the sacred writings? But an Austrian *savant* has discovered, by means of a microscope, in a stone taken from the pyramid of Dashour, many interesting particulars connected with the life of the ancient Egyptians. The brick itself is made of mud of the Nile, chopped straw and sand, thus confirming what the Bible and Herodotus have handed down to us as to the Egyptian method of brick-making. Besides these materials, the microscope has brought other things to light—the debris of river shells, or fish, and of insects, seeds of wild and cultivated flowers, corn and barley, the field pea, and the common flax, cultivated probably both for food and textile purposes, and the radish, with many others known to science. There were also manufactured products, such as fragments of tiles and pottery, and even small pieces of string made of flax and sheep's wool.

ODOR OF PLANTS.—Mr. J. Britten, in the *Gardener's Chronicle*, says: "A large proportion of pale and white blossoms are fragrant, and it is ascertained that these predominate in northern regions. We may therefore conclude that the relative number of odorous flowers is greater towards the poles than toward the equator. It would seem that the too powerful action of light and heat is opposed to the emanation of the odors of flowers, and we see many specimens which are scarcely fragrant during the day, become so in the evening or during the night. But if the odors emitted by the blossoms are more frequent in the north, the reverse is the case with the essences inclosed in the glands. Plants with fragrant leaves, aromatic fruits and wood penetrated with essential oil are scarcely found except in warm or tropical climates."

LIQUID FUEL.—Parties who have charge of the liquid fuel process at St. Louis are pushing it before the public with commendable energy. The process consists of decomposing water, setting free the hydrogen and oxygen which are united with combustible liquids, as petroleum, producing great light and intense heat. A great deal is claimed for this process for illuminating purposes, and it is applied to quite an extent in the manufacture of iron at the Leclerc mills. By means of it a puddling furnace is heated in forty minutes and a thousand pound charge of iron melted in fifteen minutes, being twice the amount of work done by ordinary furnaces, and making iron of the best quality.

THE *LONDON Mining World* thinks that "before the lapse of another generation the United States will be the great iron and steel producing country of the world." It observes that "there are causes in operation which will prevent any rapid expansion of the iron industry of this country, while in the other the great resources of that industry are comparatively untouched. Among these causes may be mentioned the limited supply of good ores in Great Britain, the necessity which arises each year of sinking deeper for the fuel to smelt them, and consequently the increased expense of raising it."

Influence of Cold Upon Iron.

M. Caron has brought before the Paris Academy the results of observations made on the fracture of car axles. In every case he finds the break to result from the bad form of the pieces or faulty nature of the iron. He contests the assertion that bar-iron becomes crystalline and brittle under the influence of winter-cold. In order to test the influence of cold on iron, M. Caron experimented as follows: Several pieces of good bar-iron were exposed for four months in the ice factory of M. Teller, at Auteuil, to temperatures varying from 0° to -18°. Others were allowed to remain throughout the cold of last winter at a temperature of about 20° in the open air. M. Caron then cased the pieces to be broken, both in their cold state, and after the temperature had been raised several degrees above zero. In no case was there any appearance of crystallization. Of course, he had assured himself of the good quality of the iron beforehand. Iron of inferior quality acts differently; its brittleness is perceptibly increased through cold. The experiments of M. Caron seem to prove when a bar of iron breaks, through vibration or shocks, and the fracture presents a crystalline appearance, this crystallized state was that in which the iron was previous to its being used; and it is to be attributed to faulty manufacture, not usage or cold after the pieces was completed. From this it follows that the testing of, e. g., 4 or 5 per cent. of a large number of pieces of wrought-iron does not supply a proper guarantee of the good quality of the remaining pieces, and various treatment of them as regards temperature and other points.

RAILWAY SPEED.—Fifty and sixty miles an hour for railway travel is oftener talked about than realized. A speed of sixty miles an hour for a regular passenger train has never been attempted, except in one instance, and that on a wide 7-foot gauge in England. This rapid speed pleased travellers very much, and many willingly paid the large extra charge for being shot along over the ground at a rate so great as to render the way stations of the accommodation trains almost invisible. But the railway company soon found they had passed the practicable limit of the endurance of wood and iron. They found that the "wear and tear" induced upon both road and rolling stock by such excessive speed, was also beyond the endurance of finance, and that high rate of speed was consequently abandoned.

There are but few trains now running on the best wide-gauge, straight roads in England, which average a speed of fifty miles an hour. The express passenger traffic is usually done at the rate of 35 to 40 miles, while the ordinary travel is about 22.

Railroad travel in this country is much slower, and necessarily so in consequence of the lack of solidity in our roads and rolling stock. Our "lightning trains" scarcely reach, and very seldom exceed, 35 miles an hour—in fact our fast trains do not average over 30 miles, while our general passenger traffic does not exceed an average of 20. Freight trains usually run about 16 to 18 miles an hour.

PORTABLE RAILWAY FOR COMMON ROADS.—This invention of Mr. W. Pidding is thus rather indefinitely described by the *London Mining Journal*. The carriage wheels, which are only about 21 inches in diameter, and are fixed to the axle beneath the springs in the ordinary way, run upon what may be popularly described as the inside of the tires of a second pair of wheels of sufficient size to permit the small wheels to rotate between the tires and the naves of the larger ones. This larger tire, which forms the portable railway, is made up of a series of long and short segments, each carefully shod with india-rubber, or which may be constructed of steel, formed into a band chain, one or another portion of which is, of course, always in a position ready to receive the running wheel; the portion which has served the purpose of a tramway as constantly passing around the periphery of the large wheel to regain its position in front of the running wheel. The external appearance of the carriage is not altered.

TAKING THE WARP OUT OF SHEET-IRON.—This may be done by means of hammer, anvil, and principally an able workman who knows how to do it. Those working in metal have often cases in which there is a warp in a sheet of iron, brass, or other metal, and if the workman understands his business, he knows how to hammer it out. Those not expert in this art do not know where to strike, and only make it worse.

OZONE IN THE AIR.—According to a paper in the *Journal of the Scottish Meteorological Society*, observations have shown that when the air had a pleasant sharpness and stimulating influence, the largest amount of ozone was present; when it was close and depressing, little, if any, ozone was detected.

TWENTY-INC H SMOOTH-BORE GUN.—Mr. Grasshof, manager of the Perm Works, Russia, has succeeded in turning out a 20-inch smooth-bore gun which has given good satisfaction in the trial experiments. The Russian government has ordered the casting of others.

COMPRESSED-AIR MACHINERY is rapidly finding application in German mines for the use of pumping, drawing stuff, rock-boring, and coal-cutting.

FARMERS IN COUNCIL.

Sacramento Farmers' Club.

This club met at their room on Saturday, Aug. 10th. In the absence of the President, James Holland took the chair, and in the absence of the Secretary Capt. Wm. M. Haynie acted as Secretary.

J. H. Wolfe remarked that it appeared to be almost impossible for the Committee on City Market to get together. They had attempted to hold meetings on several occasions, but had failed to get the members together, and, as a consequence the committee had done nothing. Judge McKune had offered to assist the committee, free of charge, professionally. Wolfe said that Judge Haines owned one-half a block between H. and I. Fourth and Fifth streets, which he would sell to the club as a location for the city market for \$2,000 and take \$500 in stock in the institution. The title to the property was good.

After some discussion as to the time to hold the committee meeting it was decided that the Committee on City Market should meet at the club-room at 3 o'clock on next Thursday afternoon.

The subject for discussion at this meeting—"The Fertilization of the Soil"—was taken up, and on motion of Haynie, T. K. Stewart was elected to open the discussion.

Stewart said his experience in fertilizing soil was that green manuring on bottom land was the best. He allowed his bottom land to stand until it got a heavy crop of weeds and grass upon it. It was then plowed so that the weeds and grass were all turned under, and then a roller was passed over it. The land was allowed to remain idle for a few weeks, until the weeds were rotted. With this treatment, he said, the ground retained moisture all summer, and always produced a good crop. Speaking in regard to the use of decomposed manure, he remarked that he had made land too rich, so that it would not produce weeds, even with irrigation. The land he referred to has been barren two years. He expressed himself of the opinion that our "alkali" soil was filled with richness from the decomposition of vegetables in the mountains. Certain plants in growing collect from the mountainous soil, saline particles and the alkali-like substance which collects on the surface of our bottom land is but a deposit of the saline substances contained in the vegetables. Alkali soil requires water to keep it cool. He has oleanders growing on alkali soil, and they grow and bloom finely. The oleander is a swamp plant and requires moisture. He placed bunches of weeds around the foot of the trees and gave them a few buckets of cold water once or twice a week. Trees and plants on alkali soil, if not kept cool with irrigation and straw, were liable to "burn up." His sediment land was coated white with alkali, and he stirred up the top crust before he planted anything on the land, and it grows without trouble. He had land on which he had raised crops for the last sixteen or seventeen years without any failure, and the only manuring it has had was by the green manuring process—plowing in green crops.

W. M. Haynie said Stewart's experience in manuring soil with compost was unfortunate. He must have had a very strong manure to kill the soil. It was true that if you take green barnyard manure, such as the offal of horses, cattle or sheep, and put it on new land, it will burn vegetation; but he did not think it would do so when properly composted and rotted. He had seen land which would not otherwise produce over ten or fifteen bushels of wheat to the acre, by giving it a liberal coating of compost produce as high as fifty or sixty bushels to the acre. The best system of fertilizing was to spread well composted manure on the ground and then plow it under. Farmers in this State were careless. They have in their power the means of making a small piece of ground produce enormous crops by proper fertilization. He thought every good farmer ought to provide for a compost heap with a cellar excavated two or three feet deep and roofed over. Let everything in the shape of vegetable matter be placed into this cellar and the whole allowed to decay. Barn-yard manure and adobe mixed and properly decomposed would make a splendid manure. Adobe was full of the strongest fertilizing powers we have on the earth. It would be well to put a little lime into the heap to kill the germ of any insect or weed that may be in it. The farmer would have to use his judgment in putting on manure. It would depend on the richness of the soil. If the soil was already rich no manure was required. He thought that on sandy soil Stewart's manuring system was ahead of any other system. In Germany there were vast tracts of land that a few years ago were barren wastes, but in the early part of the winter turnips were sown and allowed to grow rank, and then turned under. By this means these lands are made comparatively rich, and able to produce splendid crops of grain. That showed the great fertilizing qualities, and in this particular the judgment of the farmer was to be exercised.

Stewart agreed that different soils should be differently fertilized. Sandy soils required green manure, and clayey soils require hot manure.

J. Rutter said that he was misunderstood last Saturday, when he was reported to have

said that water was detrimental to red lands. He desired to correct himself by saying when it was saturated with water during the summer season it was detrimental to growing crops, but giving it what water is needful was beneficial. Saturating the land was detrimental for the reason that in a week or so the ground became very hard, unless irrigation was kept up, and if you keep it up it will be too cold for the crops to manure. He thought that instead of excavating a cellar to contain compost, there should be a place built of masonry, for instance from one to two feet above the natural grade. Put into this all the droppings of the animal and add water to moisten it. It could then be covered over. He was in favor of adding a great deal of water, so that the manure could be applied in a liquid state. He thought it could be applied much easier in a liquid form and nothing would be lost. It could be run on like water in irrigating, and would go directly to the roots of the plants.

J. H. Wolfe said he had not had much experience in fertilizing. He had been in California so long as to forget its benefits. Our virgin soils had yielded so much that farmers had thought it unnecessary to replenish them, but now our land had, to some extent, given out. If we expected to realize much we would have to fertilize and return to the soil as much as we took from it. He had tried manuring his uplands. In cleaning out his barnyards he had hauled the manure out to the field and the experiment proved a failure. The grain from the land so manured did not mature. It grew up with very rank straw. He had since experimented with decomposed manure and had realized double the amount of small grain by so doing. He said he had rented some low lands which were covered with deposits of sediment. In strips about fifty yards wide and extending for about a mile in length nothing would grow to maturity, while on each side good crops could be produced. He had puzzled his mind to ascertain the cause of this barrenness in strips. He had come to the conclusion that along these sterile strips of land there was once the bed of a stream and the water had washed away the bedrock so the ground would not retain moisture.

Haynie said that in 1856 he was on board a ship at Hong Kong, and in 1844 he was in Canton. The Chinese have no animals and all their transportation is done on men's shoulders, simply because they have not ground enough to produce food for animals. These people did not allow a particle of human excrement to go to waste. It was all used as a fertilizer, and it was used in a liquid state. When he was living in the ship the Chinese would come over from the mainland and clean out the ship and carry the offal to enrich the soil. It was well known that the Chinese produce a tremendous crop from a small piece of ground. These people were proverbially known to be great and successful agriculturists, and it was all due to the fact that they replenish the soil and let no manure go to waste.

Hoyt said it was impossible to say what was the best fertilizer. It would all depend upon what the soil demanded. He argued that if portions of our alkali soil were transferred and mixed with other soils, it would prove one of the best fertilizers. Some soils were barren because they have too little alkali, and these produce nothing because alkali was too plentiful.

Rutter referred to the action of the Union Pacific Railroad Company in not allowing fruit cars to run over their road. This change forced fruit-growers to ship by express, and while the railroad company charge 5 cents per pound, the express company charge about 9 cents. The question was discussed by several of the members, and its further consideration was continued until the next meeting.

The subject of "Fertilization" was also continued until next Saturday.

On motion of Haynie, B. J. Gibson, of Chicago being present was elected an honorary member of the Club.

State Farmers' Club.

The Secretary has received the following letter from Roger Conant, Secretary of the Santa Cruz Farmers' Club:

At a meeting of the Santa Cruz Farmers' Club the propositions of the Napa Club were unanimously endorsed as the sentiments of this club, and the following gentlemen were elected delegates to attend the convention proposed to be held at Sacramento on the 23d of September: B. Cahoon, D. C. Feeley, D. M. Locke, John Matteson, and Morton Kinsley. It is to be hoped that the result of that convention will be more than a few speeches and a set of resolutions, which is too often the case in conventions of the kind. The sentiment of our club seemed to be in favor of strong and decided action to protect the farming interests of the State, which can only be accomplished by the farmers themselves, who hold the power in their own hands.

The meeting adjourned one week when it is expected the discussion will be more than ordinarily interesting.

San Joaquin Farmers' Club.

This Club met Saturday afternoon, August 10th, in regular session, President Holden in the chair.

A letter was read from I. N. Hoag, Secretary of State Agricultural Society, in relation to the concert of action proposed by the different Farmers' Clubs, to take place at Sacramen-

to on the evening of the 23d of September. The Club voted that the Chair appoint five delegates to said Convention, whose names will be announced at the next meeting of the Club. After talking over the matter of rent due, and other incidentals connected with the financial affairs of the organization, the meeting adjourned.

San Jose Farmers' Club and Protective Association.

The Club met on Saturday August 10th, as usual, President Casey in the chair.

On motion the chair was authorized to appoint between now and the time specified three delegates to attend the State Farmers' Club to meet on September 23d, in Sacramento.

A communication was read from the agent of the Australian Harvester, which said the test at Santa Clara was not a fair one, and that the harvester would again work at Livermore where it could be seen.

Mr. Pebbles said he saw the harvester at work and was satisfied that with a few improvements it would do well. For one thing the lifters were not suited to our grain but they could be changed. It cleaned the grain splendidly and he was in hopes that the harvester would soon be able to work with success in many parts of our State. It would be a wonderful improvement if three men and six horses can do our harvesting instead of fifteen men and almost an innumerable number of horses.

A resolution was adopted condemning the City Ordinance which prohibits farmers from peddling from their wagons direct to the consumers without having to pay license. Mr. Holloway Jr. and Mr. Cadwell were appointed a committee to draft a petition and have it circulated to present to the City Council praying that the City Ordinance may be so changed as to allow the producer to sell direct to the consumer without having to pay license.

Lady Members.

A resolution was adopted allowing the wives of members and other women to join the club without fees, by signing the Constitution and By-laws.

The Club next discussed the following: Resolved, That "Our license system should be abolished." Mr. Holloway considered it a very important question, about the only thing to be said in its favor is the old argument, "Always was and always will be so," but that won't do; it is wrong to license unless you also fix the price at which the thing licensed is to be sold. Otherwise it forms a monopoly or makes a privileged class. Even men who keep horses are licensed and farmers can hardly afford to raise colts; often it is cheaper to buy. There are a hundred whisky mills and many even advocate licensing houses of ill fame; we will soon be a second Sodom if we keep on.

Lawyers and doctors and preachers were a licensed, privileged class, and it should not be so; there might be some sense in licensing the fruit and grain growers, but not the middle men who come between the producer and consumer. Governments are instituted for the protection of life and property. The sale of liquors is the most destructive to life and property of all things, but can any of us say a word to the seller so long as we take his license money, the price of his iniquity. He don't want a license to do all the talking, but in this matter he is terribly in earnest. He believes we should let political parties go to the bad, and unite to form a new, pure party that will sweep such corruptions from the land. He, for one, is willing to unite in such a grand work after November next.

A Swindle.

Mr. Cadwell also dwelt on temperance; he said drinking is an intolerable nuisance; a saloon is nearly the first thing in any place. The liquor business is not carried on fairly; it is meant for a swindle, and he did not believe in licensing a wrong, or in going between the producer and the consumers.

The President called Vice-President Chipman to the Chair, and took the floor. He said the license system was wrong and should be abolished. It originated with an aristocracy to draw money from the poor to support them in their rioting. Under the licensing system there are none so poor but what their additional cost of living will amount from ten to thirty dollars. The objects of governments is protection, but licensing the sale of liquor destroys all protection; it also causes most accidents, and it is the cause of most crimes, and the trial of each criminal costs the county about \$1,000, which runs us in debt.

The sale of liquor also fills our poor-houses. It is not prohibition but protection we desire, and we can not have protection so long as we legalize the sale of liquors. We might as well license and legalize murder and robbery and the whole list of crimes, for drinking leads to them all. It was here suggested that a license did not legalize but was given to regulate trade.

Mr. Holloway, Jr., said then it had outlived its usefulness, for now it was a mere question of money. It no longer meant that a man was honest, reliable and competent to carry on a certain business, only, on the contrary, that he had paid his seven or ten dollars into the treasury.

Mr. Thompson thought a man should be allowed to trade and furnish to his fellows the necessities of life without being taxed, in the shape of licence. Mr. Dubois thought license to sell

liquor should only be given to good moral men and should be put so high as to keep too much liquor from the poor. He was temperate, but not total abstinence. Men who attend bar should have a certificate of morality and competency, the same as school teachers, preachers, lawyers, and doctors.

Mr. Hobson was opposed to licenses on general principles. Men should not be licensed to sell a pig or a dog, nor anything else. Some want us to keep off the liquor question, but how can we, that is the big thing and overshadows all others.

Mr. Holloway wanted to know if a man could be temperate in lying, or stealing or murder; no more could he be in using liquor. Temperance means total abstinence from all improper things. A moral whisky seller is a monster. If we must have them the more the better; they will starve each other out. In Maine the prisons have been emptied by refusing to license the sale of liquors; let us act likewise and thus bless our State and save ourselves.

There was an effort made to amend the resolution which was voted down and the subject was postponed till some future time.

Selling Tires Cold.

Mr. Balback extended an invitation to the members of the Club to visit his shop and witness the operation of setting tires cold by the means of pressure, which was accepted. The operations were performed to the satisfaction of all present, and many expressed their desire to have all their tire-setting done in that way hereafter.

The pressure is applied by means of steel bands passing around the wheel, which are drawn tight by screw power. The screw is turned by two men with levers. The tire on the first wheel was measured before and after the setting and was found to have been shortened three-fourths of an inch. He said he could shorten the tire two inches if it is sufficiently loose. Meeting adjourned.

Napa County Farmers' Club.

At the last meeting of the Club, August 10th, the question "What is the most economical manner of fertilizing our lands?" was discussed. In the course of the debate much valuable information was evolved, which will bear epitomizing.

Mr. Sawyer said the main reliance of the farmers must be plaster. On a farm in Vermont, where he had worked, there had not been a load of manure hauled in forty years, but plaster had been used every year instead. He had examined the soil of this farm attentively, and was convinced that the peculiar facility of plaster as a fertilizer was that it drew the moisture from the atmosphere and not from the soil. He had no doubt that plaster must be the fertilizer for California. It was cheap, and the freight on it would be only nominal.

Mr. W. H. Nash stated that he had made an experiment with manure, by putting an acre of asparagus between rows of cherry trees, then digging trenches 14 inches deep through the lot and filling them with manure; these trenches, so filled, he covered completely up. The result was that the cherry trees grew six times as much there as elsewhere. In this case, however, he wished it remembered that the manure was entirely covered.

Mr. Nathan Coombs was of the opinion that farmers planted more land than they were able to attend to. As long as they would continue to raise wheat exclusively they would not be able to keep their fields clear. He thought that if one-half the land he had in wheat had been put in pasture, he would have been better off. His farming for years had not been profitable, and without his stock he would have fallen behind. The farmers had more land than they could put in good shape. It was his opinion that for every 100 acres of grain there should be 200 head of sheep. They were stock that brought in good returns. They would eat closer and find food where horses and cattle would skip over. From them the owner gets three returns—the spring and fall clips of wool, and his mutton besides.

Mr. Fisher favored gypsum as a fertilizer. It contained lime, ammonia and sulphur, all of which the soil needs. He knew of a farm at home upon which twelve bushels to the acre was considered a good yield. Yet by the use of composts in connection with plenty of clover, the yield was raised to twenty-five bushels to the acre. The properties of gypsum were to decompose vegetable matter and attract moisture and ammonia.

The debate closed, and the following resolution was adopted by the Club: "That we recommend more sheep-raising, together with the cultivation of proper vegetables with which to feed them."

Sonoma County Farmers' Club.

The Club met pursuant to adjournment, on the 3d day of August, H. P. Holmes, presiding. After the ordinary preliminaries, Mr. W. H. Rector of Mark West Mills, delivered an able and instructive address, after which the thanks of the Club were tendered him unanimously.

On motion that a committee be appointed to correspond with other clubs throughout the State, the following gentlemen were appointed: G. W. Whittaker, R. A. Thompson, W. H. Rector and J. De Turk.

Moved and seconded, that the committee on

correspondence be instructed to communicate with the Sacramento club, and get what information they have on the subject of steam-plowing.

Moved and seconded, that we endorse the resolution of the Napa Club, in regard to forming a State Club, and that that Club be informed of the action of this Club. Carried.

Moved, that at our next meeting, the subject of discussion be, "Plowing of All Kinds." Carried.

The following gentlemen were appointed on the Finance Committee: R. F. Fulkerson and H. C. Mizer.

At the close of Mr. Rector's address short speeches were made by Mr. Illingsworth, Mr. Maslin and Mr. De Turk. Fifteen members were proposed and elected: The proceedings were interesting and satisfactory to the parties present. The Sonoma County Farmers' Club is now a fixed fact, and a decided success.

Oakland Farming, Horticultural and Industrial Club.

At the semi-monthly meeting of this Club, on Friday, Aug. 9th, Prof. Carr presided. The promised discussion on cultivating and preserving small fruits, brought a goodly attendance of the fair sex. Messrs. G. J. Nicholson and A. W. Bishop (editor of the *Transcript*), were elected members of the Club—the latter as an honorary.

The Club was reminded by the Secretary of the deferred communication of the San José Club against taxing growing crops. Prof. Carr thought it not desirable to discuss this evening, but the members should keep the matter in mind as one of importance for future action.

Proposed Farmers' Convention.

A communication was read from the Sacramento Farmers' Club endorsing the action of the Napa Club, and proposing that a convention be held at Sacramento on the 23d of Sept., near the close of the State Fair.

Mr. Pryal—I cannot see how the Sacramento Club can direct us to hold a convention there. We have a beautiful place for it in Oakland. All clubs should be heard from.

Prof. Carr—I suppose the idea is to make arrangements for the organization of a State Club. It does not much matter for the purpose where the convention is held. There could be more persons interested found in Sacramento at the date suggested than at any other time or place.

A motion of Mr. Hyatt was carried for the appointment of a committee of three, to report on matters connected with the proposed convention at the next meeting. Subsequently the Prest. named Messrs. Webster, Hyatt and Bagge.

Mr. Dewey suggested that the State Fair was a busy affair with farmers, and it might be found desirable to hold then only a primary convention to prepare the way for a more full and regularly constituted convention at a later date, when all the fairs would be over.

Mr. W. A. Dawson, of Fitchburg, Alameda

Machine for Utilizing Straw.

Co., who had been invited to exhibit the model of his simple but ingenious machine for cutting (at a convenient season, after heading) the waste straw of grain fields, came forward and explained that his model had been locked up in a law office in S. F., at 4 p. m., and it was beyond all his *habeas corpus* and personal powers to present it to the Club this evening.

His machines will be made the ordinary width of headers, and designed to cut the straw to about three inches in length, and to crush and bruise it between rollers.

Mr. Dawson said—Farming is not considered remunerative in this State, though it is in every other country. This is owing to the dry seasons, to the burning of the straw, and to the reckless manner in which the business is carried on in this State. I spent three years in the Sacramento Valley, after the usual fashion, burning the straw, plowing, burning and plowing again. This restored to the soil some of the elements that cultivation had taken from it, but not more than one-fourth of them. My experience in the Sacramento Valley proved that this system weakens and robs the soil. It has beggared and made poor farmers in this State. We get no benefit from the straw, and cattle cannot eat it. I have gotten up my machine because I believe it to be a necessity to the farmers of this State. I have tried the best I could to construct a machine that would save the straw, increase the yield, and make farming pay. I have sought to make it light, cheap, and effective. During the last ten days I have had put to me all sorts of question on the subject. Some ask, is there no virtue in straw as a fertilizing element? Not in dry straw, though there is in wet; when it has rotted.

Long straw, however, after being plowed in, will, when the dry season approaches, assist the moisture to rise to the surface and produce no crop. It must be chopped. Then, too, when there has been a heavy crop, it exerts a pernicious influence, for it keeps the earth too porous and makes it dry up too quickly. By chopping in small pieces this is avoided.

Mr. Dawson, after an interesting address, concluded by stating that if the members of the Club wished, he would make it a point to have a model here on any day they might name, say Monday, when an examination of it will be more satisfactory than any mere explanation could be.

In response to questions from members of the

Club, Mr. Dawson said that he had not experimented with it as yet, that he would have a working model constructed in ten days, that the machine would be drawn by four horses and attended by one man, that it would cut 25 acres per day, and would not cost over \$120 to the farmer, that it would cut the straw from one to four inches in length according as it was set, that its work, done at a leisure season, would cost the farmer nothing but his own time and the price of the machine; that it would cut as low as any ordinary mower, and that he knew how much it would cut from his experience with machinery—it being a matter of mere calculation.

Mr. Dewey—Are any similar experiments known to have been made to utilize the straw? Mr. Webster—"No; but this machine is I think calculated to be of great benefit as it will help to rot the straw."

A member asked how much average benefit per acre will the new machine probably be. No one present seemed ready to give an estimate.

Mr. Dawson—I planted potatoes the first week in February, on manured ground. They grew excellently and turned out finely. I planted others the first week in May, some on ground occupied by a straw pile, partly rotted at the base, the others on unmanured ground. The former produced a pretty fair crop of Pink eyes, while the latter produced very tall vines but no potatoes.

Mr. Dawson then in answer to the request of Chairman, said that he would exhibit his model at the next meeting of the club.

Interesting Plant—"Pilea Somborina."

Professor Carr—"While we are on miscellaneous topics, I will call upon Mr. Hutchinson to exhibit a curious plant which he has brought here."

Mr. H. then having sprinkled it, brought it forth under the gaslight, when it exhibited the curious phenomenon of instantaneous flowering, each flower opening with a slight concussion, or explosion, sending forth what appeared to be small clouds of smoke. Mr. H. stated the plant was called *pilea somborina*, that in the evening was rather an unfavorable time for the experiment, and that what appeared to be smoke, was the pollen rising. The plant was over 12 inches in height and diameter, and in appearance not unlike a fine-leaved evergreen plant.

New Species of Potatoes.

Mr. Pryal then exhibited a new species of potatoes which had the peculiarity of possessing the eyes prominent, instead of being sunken as usual. He said that they were more prolific than the ordinary potato; were very sound and of greater specific gravity than other kinds; that they were a cross between the peach blow and the old American pink eye; that they were as early as the early rose. The seed from which they were propagated was very small, finer than mustard seed. They were the only potatoes with which he had been able to produce bolls. They produced ten to fifteen on a single stalk, and were grown on a partly adobe soil. Mr. Pryal having wished the Club to name them, Mr. Hunt moved that they be called Pryal's Prolific. Mr. Hutchinson objected to naming it so soon. It was suggested that a committee of ladies grant it a name. But finally upon the recommendation of Mr. Dwinelle the Club conceded the advantage of the system lately adopted in the Eastern States of naming new varieties by numbers in connection with the name of the honorable propagator, and adopted the name of "Pryal's Seedling No. 1," and the name of Pryal's Seedling No. 1 was finally affixed to the new tuber.

California Opium.

Mr. Pryal also exhibited a species of white poppy grown by his son from seed brought by a Frenchman from Algiers several years ago. It grew on the bank of a creek, but was not irrigated. One of the heads was one and one-half inch in diameter.

Professor Carr—From all that I have seen I believe that we can make as good opium here as in any part of the world. I have seen some excellent opium grown near Folsom. Mr. Dewey stated that Dr. Hunter, of El Dorado, had this year raised a quantity of opium of good quality, and wanted to know if he could find a market for it in San Francisco?

Mr. Pryal—I suggest that we should have an experimental garden for these things.

[For want of space we are compelled to defer the remainder of the report till next week.—Ed.]

Mr. Dewey mentioned that Mr. Phelps, of San Leandro, who had invented a process of preserving articles by exhausting air by a vacuum pump, would exhibit his apparatus.

Dr. Carr, by request, promises to speak of the general principles involved in the different methods of preserving fruits, etc.

On motion of Mr. Pryal it was resolved, that for the future the Club should meet informally for social intercourse at 6½ p. m., and open regularly at 7½ p. m..

Adjourned to the 23d inst.

Contra Costa Farmers' Club.

Regular meeting, Saturday, August 3d, 1872. President Jones in the Chair.

The President announced the following Committee:

COMMITTEE OF FINANCE—John Larkey, Platt Gregory, and S. W. Johnson.

COMMITTEE OF RURAL INDUSTRIES AND ECONOMIES—C. B. Porter, L. I. Fish, A. W. Hammit, C. E. Howard, and R. H. Wight.

COMMITTEE OF CO-OPERATION, ORGANIZATION, AND OP-

ERATION—G. P. Loucks, Barry Baldwin, and W. L. Houston.

The subject for discussion, "The most economical way of conducting a farm," was then discussed.

Mr. Porter said the raising of one kind of product, as practiced at present, was very unsatisfactory. The harvesting and shipping of a large crop of wheat with the limited force and facilities at command, was very expensive, and he thought it would be better if California farmers would put less land in wheat—taking more care in preparing the soil and putting in the seed, and in harvesting the grain. By this means the owner would be enabled to realize a better crop and at the same time he could let a portion of his land rest and a portion go to hay and pasture, so that some of the land would only be in wheat once in three or four years. By such course not only resting and recuperating his land, but avoiding the heavy expenses of harvesting, sacking and freightage a large crop when the prices of grain were low. There were many difficulties in the way of small farmers arranging their farms in subdivisions; yet it was not wise for them, situated as we are, to devote ourselves exclusively to the raising of wheat.

Mr. Larkey thought the raising of different kinds of stock more profitable than depending exclusively upon cropping the land. He thought sheep would pay better than raising grain, but both might be raised with profit. He intended to arrange his farm so as to raise stock and grain.

Mr. Porter was called to the chair.

Mr. Jones said he had his idea about small farms. He thought if we could get rid of coyotes and worthless curs that were roaming over the country, that one hundred head of sheep could be made to pay a small farmer quite handsomely. He had been told by other who had tried it, that sheep were profitable in cleaning a farm from weeds. In regard to alfalfa, he had about five acres which he sowed last winter. He had cut about five tons of hay from the piece, and it looked green and fresh now, but how it would stand the extreme dry weather he was unable to say. He thought hogs could be kept profitably on alfalfa by controlling them with fences. He also wanted something to bring our land up; it was showing exhaustion very perceptibly. Had heard people complain of gang plows; he attributed the great growth of weeds not so much to plowing, as to the deterioration of the soil. In regard to co-operation, he said the most of the small farmers labored under the difficulty of being obliged to hypothecate their crops, and consequently were under the control of capitalists. We see that capitalists are now controlling tonnage, and almost everything that the farmer requires. He thought that if farmers were thoroughly organized they might control these matters. It would be a good thing if farmers would unite and create a capital so as to be able to relieve the small farmers in their time of need, and by this means enable them to get their small farms in good condition, so that in a few years they would be entirely independent of capitalists.

Mr. Porter said he supposed the object of all farmers would be to produce as much as possible themselves, such articles as they were obliged to have. The cost of transporting these articles from great distances all comes out of the farmer. There is no doubt that farmers might produce a great deal more of these articles than they do. If a farmer puts all his land in wheat it takes up all his time; if he would put in less wheat and raise some of the articles he is compelled to buy, he would save more money and be better prepared to devote a portion of his time to something else. In regard to this matter of organization, Mr. Loucks had informed him that he had received a circular from the Sacramento Farmers' Club, requesting this Club to send a delegation to meet them for the purpose of forming a State organization. He thought a Committee should be appointed, to meet the Sacramento Club some time during the State Fair. If a judicious system of exchanges could be instituted, it would do away with many of the fees of middle men—a great saving to farmers. In regard to the securing of tonnage, he did not know that it would prove a disadvantage to us; it might be an advantage. If the buyers engage the tonnage to ship their own purchases of wheat, we will be benefited; if they charter ships to sub-charter, then we are not benefited.

Mr. Fish thought the system of farming as now practiced was ruinous to the owners of the land. We have to pay so many commissions that it leaves nothing to the small farmer; he thought the system of freights was in the hands of a monopoly; thought we ought to have a system of co-operation in regard to disposing of our crops. As to a diversity of crops, he did not think any one had made anything by it in this dry portion of the country; wheat was the main dependence. As to hog raising, he said this railroad was ruining that; they are placing the best corn-fed hogs in the market at six cents. He also thought we ought to do something to enrich the soil; it was getting poorer every year.

Mr. Pratt said in regard to harvesting grain, he differed with some others. If he should ever farm again (and he expected to) he would never have a header on the place. He said he once had a field of two hundred acres, thirty acres of which he had cut with a reaper, and the balance was headed; when the rains came the next winter, the thirty acre piece showed an average of a spear of grain to each square foot, while that cut by the header was a perfect mat of wheat—at least 250 pounds of wheat to the acre was left on the ground—thought he would save the cost of heading by cutting and binding.

Mr. Albert Stone thought he could take up grain loose, cheaper than he could by binding. Had one man that had averaged three acres per day with a fork; found it a great deal cheaper than heading.

Mr. Porter thought it would be a good idea for Farmers' Clubs to encourage the breeding and training of good sheep dogs, capable of herding flocks on small farms.

Mr. Stone said that if a large flock of sheep could be placed on land they might clear it of weeds, but if a few run at large on a farm they generally look for the best feed.

Mr. Fish suggested that we have our discussions more in the form of a social chat, than in the way of speech making. He thought it would call out the opinions of farmers on the different matters connected with a farm.

Mr. Larkey moved that we adjourn, to meet at Folsom on the 16th of September. Carried.

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Enterprise, Aug. 9: THE BIG MEADOWS.—The settlers of the Big Meadows are wearing smiling countenances. The late decision of the U. S. Land Commissioner in their behalf has made many a heart glad. The valley will rapidly progress in wealth and beauty under the benign influence of assured homes. The grazing privileges of the valley were never better than now. Many visitors are enjoying themselves in its salubrious climate, feasting on fish and fowl. Both hotels are full.

WEATHER.—The weather at the beginning of the week was intensely hot, the thermometer ranging from 90 to 117 degrees. The north wind was like a consuming fire.

BIG BUNCH.—Mr. Levi Moak left a cluster of grapes at our office this week which weighed one pound and fifteen ounces. It was taken from the vineyard of Moak & Sissium.

Record, Aug. 10: WHEAT.—The low price ruling for wheat, has had the effect of keeping the crop in this vicinity almost entirely out of market. Our farmers are becoming forehanded, and prefer, holding their grain for an advance instead of selling at present prices. The Ophir mills have been obliged to suspend for want of grain, although offering the highest price in cash and are anxious to purchase until numerous and large store-houses are filled. They have been running for some time on grain raised by Mr. Brooks on his ranch in Hamilton township. To enable the mills to fill orders for flour, Mr. Brooks informs us that two car loads per day of wheat, have been ordered from Marysville, at which point considerable wheat is offered for sale. Our farmers should remember that they can always obtain a higher price in ready coin for their grain at the Ophir mills than is offered on the line of the railroad or in northern California.

KERN.

Courier, Aug 3: In going over the fields of the Cotton Growers' Association we have become impressed with the conviction that the cotton plant flourishes best in the soil most impregnated with alkali. Those portions of the crop that seem the most flourishing are invariably found on examination to be growing where the traces of alkali are most apparent. This adaptation of alkaline soils to the growth of cotton may be seen further exemplified at the farm of Mr. P. A. Stine. This gentleman planted some on ground so strongly alkaline as to be almost unproductive, and it is now covered with as fine a growth of cotton as ever seen at this season, and is far in advance of that planted in the ordinary soil. This experiment will, if as successful as it now promises to be, indicate a valuable use to which large bodies of land in the southern part of the State, now almost worthless, may be put in the future.

Californian, Aug 8: COTTON.—We were shown on Monday by Mr. W. G. Allen some fine Cotton bolls from his field adjoining town. Mr. A. speaks in the most sanguine manner of the prospect for a fine crop. So far, notwithstanding the difficulties labored under at first in consequence of difficulty in procuring seed, the cotton experiment bids fair to be crowned with brilliant success. Mr. Allen assures us that all the conditions are favorable, and he is confident of making a handsome demonstration.

NAPA.

Register, August 10: HOPS.—We are glad to learn that Mr. A. Clock, of St. Helena, whose efforts to make the culture of hops in this county profitable, has succeeded. Notwithstanding the reverses of past years, Mr. Clock by dint of sheer perseverance and grit has established for himself a remunerative business and demonstrated the fact that hops may be successfully raised here. He has recently set out thirty acres in addition to those already cultivated by him, and has no difficulty in finding a market for all he can raise.

WHEAT.—The receipts of wheat for the week have been, at Sheeh's Warehouse, about 400 tons, and at the Banner warehouse about 300 tons. The ruling rate remains at \$1.50 per cental.

CARP.—Mr. J. A. Poppe, of Sonoma, who has been visiting Germany, has arrived home again. With that regard for the interests of our State which ever distinguishes the true Californian, Mr. Poppe has brought with him, from Holstein, a large number of Carp, which he hopes to introduce into our waters. These fish were brought by him from New York overland without losing one, and are the first ever brought from Europe to America alive.

SACRAMENTO.

Folsom Telegraph, August 10: The fruit trade along the line of the S. V. R. R. is growing into a matter of considerable importance. Howell & Scribes' chicory plantation will pay well and no doubt will lead to the extensive cultivation of chicory in the American river bottom, for which the soil appears to be peculiarly adapted.

THOUT.—Chris. Ecklon has just returned from a pleasure trip to Cascade and Fall- ing Leaf Lakes. He brought with him over two hundred fine trout, caught from the latter Lake, which he represents as swarming with its finny inhabitants.

HEAVY YIELD.—The Holzinger grape vine in the yard of the Railroad Bakery,

[Continued on page 108.]

United States Crop Report.

We have received the monthly Report from the Department of Agriculture, Washington, containing a statement of the condition of crops down to the 20th of July, from which we extract as follows:

Corn.

Area.—The lateness of the spring and unfavorable weather during the planting season in many sections has prevented any marked enlargement of the area in corn. The tendency is toward an increase in the South, and in the States in which wheat has been predominant. From 989 counties, including an area usually producing 600,000,000 to 700,000,000 of bushels annually, come returns indicating an increase of 3 per cent. This is equivalent to more than three-fourths of a million acres; and the total area in this great crop of the country, which nearly equals in extent the aggregate of all other tilled crops together, is probably about 35,000,000 acres.

Condition.

The meteorological peculiarities of the season have received much comment in the returns. The rain-fall is sometimes ten-fold greater at one station in a State, during a given month, than at another in the same State. A medium amount of rain, falling moderately in small quantities, at frequent intervals, has a more favorable effect upon the growing crops than a much larger quantity at long and irregular seasons in violent storms. In the Ohio Valley, as in Ohio and Indiana, complaint of long and almost unbroken drouths are received from many counties in different parts of those States, affecting wells and streams, and greatly retarding vegetable growth; while in many other counties seasonable and frequent rains are reported, and in some cases abundant supplies of moisture. In some cases wet districts are in close proximity to dry areas; and both wet and dry localities are sometimes found in the same county. In different sections of the country, in which seasons of drouth have occurred, sudden and violent storms have deluged low-lying lands, carrying away bridges, and damaged crops. These peculiarities are noticeable during each recurring summer, but the variations in amount of rain-fall, and in the frequency and force of storms, seem greater than usual the present summer. These facts of meteorology, little understood by the wisest, demanding investigation and patient study, have a bearing on vegetable growth which will some day become obvious, to the increase of farm production and the profit of the farmer.

Wheat.

An improvement in the condition of wheat has occurred, since our last report, in New York, Maryland, Virginia, Michigan, Missouri, Kansas, and to a slight degree in some other States; while a small decline is reported in Ohio, and in some of the Southern States.

The average of condition for the United States is almost exactly the same as in June, or ninety-four, six per cent, less than average.

The quality of the grain is uniformly superior. In the Middle States, in Ohio, Michigan and Missouri, and wherever inferior condition is reported, the straw is short, but the heads are generally long and well filled, the kernel plump and heavy. The quality of Southern wheat will probably prove as fine as any ever produced in that section. In threshing, the fullness of the heads, in proportion to quantity of straw, causes the yield to exceed the expectation, and may go far to offset the small decrease in reported condition. It is quite probable that the general excellence of the grain will make the present crop of equal value to that of last year. There has been almost entire exemption from rust, and comparatively little complaint of insects. The Hessian fly is reported in several places, more numerous in the Ohio Valley, and the chinch-bug has caused losses in many counties of Illinois, Iowa and Missouri.

[In view of our large surplus of wheat, with the present low ruling of prices, we shall endeavor to keep our readers posted in regard to the wheat prospect in the leading markets of the world—as we did in the matter of wool last spring—leaving it to the judgment of the producer as to when, or when not, to sell.—Ed.]

Cotton.

The past month has been generally favorable to cotton. Limited areas have been affected by drouth, but rains were quite general during the latter part of June. On the Atlantic coast showers have been so

frequent and heavy, since June 20, as to delay cultivation and promote the growth of weeds and grass. Before that date a season of comparative drouth of seven or eight weeks had been suffered in a portion of this district, while other counties represent the weather as having been uniformly favorable.

Oats.

The condition of the oats crop is from one to six per cent. above average in all New England and Middle States, except New Jersey and Delaware; the former being fourteen per cent. and the latter twenty per cent. below average. This shows a general improvement during the month of June in all the States except New Jersey, where the condition is four per cent. below that of the last report.

On the Pacific coast, California is thirteen per cent. above average, an improvement of fifteen per cent. during the previous month. Oregon is ten per cent. below average, a decline of seven per cent. during June.

Rye.

In all the New England and Middle States rye is above average in condition, but with a reduction of one to fifteen per cent. in acreage, New Hampshire and Vermont being the only States in which the area of last year was sown. In North Carolina the acreage is increased four per cent., and the condition of the crop improved eight per cent. In all the other Atlantic coast States the acreage shows a decline. The North-western States are average or above in condition, and also in acreage, except Missouri and Kansas, which are twelve per cent. short. Five counties in Oregon show a general increase of two per cent. in acreage.

Barley.

This crop is a full average, or above, in condition, in all the New England States, with a slightly diminished acreage. In New York and Pennsylvania it is about average, with a very considerable reduction of area. In several counties of New York the prospects of the crop are spoken of in enthusiastic terms. In Maryland the acreage was reduced 35 per cent. Texas reports an increase of 14 per cent. in acreage. North of the Ohio river it exhibits this season a considerable reduction of area in all the States except Wisconsin, where there is an increase of 4 per cent. In Ohio and Indiana the condition of the crop is below average; but in all the other States it is above. West of the Mississippi the condition varies from average to 18 per cent. above, with a considerable reduction of area in Missouri. On the Pacific coast the condition is from 5 to 12 per cent. below average.

Potatoes.

In the New England States the acreage in potatoes is very nearly average, and the condition above average, except in Rhode Island, in which it is 4 per cent. below. The Middle States are about average both in acreage and condition. The earlier planted appear to best advantage. The potato-beetle is reported in ten counties in Pennsylvania. In the other Atlantic and Gulf States as a whole, both acreage and condition are somewhat below average. In Louisiana and Texas both are above average, and all the other States of the Union the acreage is above average, except Wisconsin, which is 1 per cent. below.

Hops.

NEW YORK.—*Otsego:* Hops, the leading crop of the county, much injured by winter; growing crop looks well, but the yield will be reduced. *Oneida:* Very uneven; many hills destroyed by lice last year; lice have appeared this season, but have not done much damage.

WISCONSIN.—*Portage:* There are 100 acres of hops in the county, which are looking finely. *Richland:* The grub injured some yards badly, but they are clear of weeds and generally look well. *Adams:* An increase in acreage and condition, as compared with last year.

Fruit.

The prospects of the fruit-crop in different portions of the Union are quite encouraging.

APPLES.—In New England the States are all above average, except Vermont, which is 5 per cent. below. The only case of insect ravages reported was in Connecticut, where the canker worm was stripping the trees in some places. The highest condition, 117, is in New Hampshire.

Of the Middle States New York is 6 per cent. above average, but in some places the fruit is falling from the trees. In New Jersey the crop is 29 per cent. above average, the largest excess reported by any State in the Union. There seems as yet but slight drawback to the prospect of an abundant yield.

PEARS.—The prospect for pears is good

in Middlesex county, Connecticut. In Tioga county, Pennsylvania, the bloom was quite full, but late frosts have greatly shortened the crops. The pears dropped off badly in McDonough county, Illinois.

GRAPES.—The grape-crop of New England is from 4 to 29 per cent. below average. In Rhode Island, in Connecticut, the vines were extensively winter-killed. In New York the crop is 21 per cent. below average. In New Jersey the crop is 12 per cent., and in Pennsylvania 5 per cent. below average. Delaware is 5 per cent., Maryland 10 per cent., and Virginia 5 per cent. above average. North Carolina is 4 per cent. and South Carolina 5 per cent. above average. In Georgia the crop is 2 per cent. and in Alabama 5 per cent. above average, while Florida falls short 2 per cent. Mississippi will reach 6 per cent. above average. Louisiana 2 per cent. in advance. In Texas the crop is 14 per cent. above average, and in a healthy condition generally. In Austin county the White German grape is very productive and promises to be a good raisin grape.

In Arkansas the crop is 5 per cent., and in Tennessee 9 per cent., above average. In West Virginia, about an average, and in Kentucky 6 per cent. above. In Ohio, Indiana, and Illinois, the crop is about average, though complaints of winter-killing come from some quarters. In Michigan, Wisconsin, Iowa, and Minnesota, there is a decline from average condition of from 2 to 15 per cent. on account of the severity of the winter. West of the Mississippi the condition of the crop improves; Missouri being 7 per cent., Kansas 10 per cent., and Nebraska 8 per cent. above average.

Books for the Farmer.

When we find an article in one of our exchanges, just about as good as we ourselves could write, as we have in this instance in the *Country Gentleman*, we never hesitate to appropriate it, as it saves us a good deal of time to devote to our paper otherwise.

"It was once quite a common occurrence to sneer at 'book farming.' It may be yet in some quarters, but the sneer has lost its force, and now has no other point than to illustrate the mental weakness of the man who uses it.

A book on some technical subject is usually the record of an experience. An experience is valuable in proportion as it is accurate. It is valuable because, under like circumstances, we may know what result to expect in a given course. Without the experience of others to guide us, the world would make no progress; each generation would begin at the same point, end at the same, and be of no use to the world at large. Books record the experience of one man, or a set of men, and from them we learn what to do or what not to do, in order to attain or to avoid a given result."

Standard Works.

"The various learned professions—so called—have their standard works. A professional man would as soon think of doing without a library as a sailor without his compass and charts. A farmer, it is often assumed, needs nothing but a good constitution and such money capital as he can command or thinks it wise to invest. Books for study and reference are usually among the last things he thinks of when he makes his purchases in stocking his farm, or makes out a list of the tools he needs for carrying on the business. Generally he will say that he 'cannot afford' much in the line of books, because he can do without them—he expects to rely on his own judgment, a judgment founded on an experience in part traditional, perhaps, and in part also obtained under very adverse circumstances.

He forgets that in buying tools and machinery he is relying largely on some other person's judgment and experience, at a cost sometimes of hundreds of dollars where books would not cost him ten, and that in rejecting books he rejects the very information which may tell him when and where to use his costly tools so as to reap the greatest possible benefit! He pays, we will suppose, \$200 for a mower, but a book on the grasses which will cost \$2, and which will tell him how to raise, when to cut, how to cure, and how to feed the grass his mower is to cut, he passes by contemptuously! And the same course follows through the whole list of farm duties."

Be Progressive.

"The rising, the energetic, the progressive, and—we may add—the model farmer, is not content to do merely as his father did before him, or even if his success has been great, to suppose that there is nothing more to learn! Farming is not an exact science with demonstrations of unvarying regularity, but instead, one of the most uncertain in its results of all human employment because of the complex circumstances that enter into the calculation. The varieties of soil, of weather, of culture, of fertilizing, of pruning—a literal multitude of contingencies, in fact—bring up new questions at every step, and make every result more or less doubtful. Some points, it is true, have been settled, others approximately; while others—such are the mysteries of earth, air and

vegetation—still require the most careful study.

If Isaac Newton, with his vast learning and acquisitions, felt, late in life, as if he had picked up only a few pebbles on the shore of the great Ocean of Knowledge, how little learning can that farmer claim who has but a few years of personal experience and observation to guide him in the culture of the soil! And to assume then that he knows so much about it that he cannot afford to give a few dollars to know what others have learned in the same field of labor, or to know how and why they failed, is an assumption of independence as dangerous as it is daring."

Consult Authorities.

"We say unhesitatingly that every farmer ought to have at least a few of the standard works relating to the branch in which he is engaged. It is not at all necessary that he should guide himself 'by the book,' but familiarity with the views of others will give him mind an inquiring tone which will be to his benefit in all his transactions. One great danger in farming, resulting largely from its isolation, is that of falling into a plodding, routine system, in which all thought of investigation or improvement is lost. A farmer's mind should be as active as his body, or even more so. Labor without thought, without observation or inquiry, is such as horses and oxen perform, and a good deal of manual labor transacted in that way is what has brought upon farming the reproach of being a 'plodding' vocation.

Books, essays, discussions, club meetings—all act as a stimulus to thought, suggest an inquiry and comparison, incite to experiments, to system and watchfulness, and in scores of ways make farming profitable, more attractive and more 'respectable'—that is, we mean, it inspires the respect of others more readily. Professional men, though systematically trained and educated, never hesitate to consult books and authorities when they desire information, and surely the farmer need not hesitate to do so when puzzling questions come up in his experience. They often impart real and valuable information, and they seldom fail to suggest something which may not be of value in some way, perhaps in a way the author never dreamed of.

It is only the prejudiced, the short-sighted, or the egotistical who will sneer at books, agricultural societies or agricultural papers as being useless to them, or who 'cannot afford' to spend the little required to constitute a respectable farmers' library."

Exportation of Cheese.

The New York *Bulletin* notes the fact that from fifty to sixty thousand boxes of cheese are sent to Europe every week from that port by steamer; and that a large part of the total amount sent abroad is contracted for in the dairy districts of that State in advance of the season. Within the last few years American cheese has found favor in nearly all the European markets. There are special brands of foreign cheese which may be held by some in higher estimation. But American cheese is successfully competing with the best English and Dutch cheese in foreign markets, and the demand appears to be quite equal to the supply. There has been a notable improvement in the quality of Eastern made cheese since the factory or coöperative system has been introduced. That system does not prevail to any great extent on this coast, although some of the large dairies have from time to time introduced similar processes here. The coöperative principle is rarely adopted, because of the sparseness of population. A dairy ranging from 200 to 1,200 cows is sufficient, without calling for outside supplies. But the time will come when the proprietors of small grazing ranches will stock them with cows and adopt the very system which has found so much favor in New York. The manufacture of cheese will be wholly separated from the production of milk. The dairyman will sell his milk, receive his pay, and close his operations at that point. The cheese manufacturer will produce the cheese and put it on the market in his own time and way and pocket the legitimate profits of that branch of the business. At no distant day, if this system obtains a footing, we may expect to reverse one of the currents of trade, and instead of bringing in Eastern cheese for home consumption, we shall export cheese, and find it a profitable business. It is worthy of note that when the butter market is dull, both here and in New York, there is a brisk market for cheese at satisfactory prices.

INFLUENCE OF VARIOUSLY COLORED LIGHT ON VEGETATION.—As the result of a series of experiments upon the influence of variously colored light upon vegetation, Dr. Bert has arrived at the following conclusions: 1. That green light is almost as fatal to vegetation as darkness. 2. That red light is very detrimental to plants, though in a less degree than green light. 3. That though yellow light is far less detrimental than the preceding, it is more injurious than blue light. 4. That all colors taken singly are injurious to plants, and that their union in the proportion to form white light is necessary for healthy growth.

The practice of insurance is of great antiquity, and was known in the time of Clandius Cesar, A. D., 43.

SLEEPING rooms should be constructed with great care and strict regard to ventilation, as one-third of human life is spent in them.

USEFUL INFORMATION.

Recent Earthquakes.

Prof. Rockwood gives notices of shocks this year in the *Amer. Jour. Sci.*

1. Jan. 16.—An earthquake almost entirely destroyed the city of Shamaka, Russia, a place of 25,000 inhabitants, lying at the southern base of the Caucasus Mts., and about 75 miles west of the Caspian Sea. Over 100 persons are reported killed, and scarcely a building in the city left standing. The shock was felt over a large extent of the surrounding country.

2. Feb. 6, 8 A. M.—Three slight shocks, lasting altogether about 30 seconds, the vibrations from the N. E., were felt at Winona, Michigan.

3. Feb. 8, about 5 A. M.—Slight shock at Cairo, Illinois.

4. March, 6 P. M.—Shocks felt simultaneously for over an hour at Dresden, Pirna, Schandau, Chemnitz, Bodenbach, Weimar and Rudolstadt, in Germany.

5. March 26.—Earthquake in California. [This has been spoken of at various times in this paper.—Eds. Press.]

6. March 26.—Slight shock at Paducha, Kentucky, also one at Salt Lake City, Utah. These may have been part of the Inyo earthquake.

7. April 3, 8 A. M.—Severe earthquake destroyed a large part of the ancient city of Antioch, in Syria. The shock lasted over 40 seconds, and the wave traveled from east to west. Lighter shocks followed at irregular intervals for a week. The number of persons killed is estimated at 1,000 to 1,600.

8. April 16, 17 and 18—A series of violent shocks reported at Hasvick, Iceland. Twenty houses destroyed, several persons injured, but no lives lost.

9. The recent grand eruption of Mt. Vesuvius is interesting, as being possibly connected with the phenomena recorded above. This eruption first assumed noticeable proportions on the night of April 24, when a flow of lava was added to the flames and smoke which had for months adorned the summit of the mountain. On the night of the 25th, a chasm opened in the side of the cone, from which issued a torrent of lava; the whole occurring so suddenly as to overtake and destroy a number of the spectators who were watching the eruption. The flow of lava continued two or three days, overwhelming two villages and buried a considerable extent of cultivated land. The eruption finally ended with a shower of stones and volcanic sand which fell in the streets of Naples to a depth of several inches; the eruption was attended with the usual local tremblings of the earth.

Disturbances Anticipated at Mt. Hecla.

In connection with the above the following from the *Scotchman*, will not be without interest:—"Inferences drawn from the late eruption of Vesuvius, the great hurricane on the coast of Africa at Zanzibar, and volcanic disturbances and phenomena in the Malay archipelago, California, Japan, Syria, and other portions of the earth's surface, had led some of our best scientific authorities to believe that an eruption of Mount Hecla in Iceland may be expected at an early date. Should this occur during the summer season a full description may be expected to be received, as there is at present a considerable number of travelers from this country to Iceland. Besides Captain Burtain and his party, who are examining the sulphur deposits in the vicinity of Hecla and the other volcanic masses in the Island, others are collecting geological, ornithological, botanic, and other specimens, while one gentleman is exploring the country with the purpose of writing a topographical description of it.

THE AFRICAN FLY.—One of the most extraordinary facts revealed to us by Dr. Livingstone's explorations in Africa is that the high table land of the interior, with its rich agricultural resources, its noble flora, its fine temperature, broad inland seas, and inexhaustible stores of mineral wealth, is rendered all but impenetrable to civilized man, certainly beyond all reach of colonization, by one of the most apparently insignificant of causes—a fly. This terrible insect is a little, brown, yellow-striped fly, called the tsetse, scarcely larger than our common household pests, but whose sting is absolutely fatal. So deadly is its poison that it is said three or four flies will kill the largest ox. Soon after the bite, which gives little or no pain, staggering and blindness comes on; the body swells to an enormous size; the coat turns rough, and in a few hours follow convulsions and death. And yet this deadly poison, under the effect of which the horse and ox, the sheep and the dog, fall as if plague-stricken, is perfectly harmless to man, to wild animals, to the pig, mule, ass and goat. Here is an achievement for science that would bring glory to the discoverer—the discovery of some antidote to the sting of this venomous fly, which would open the treasures of Central Africa to the use of the world.

CHEAPEST PROCESS FOR MAKING A SAFE OIL.—Prof. Chandler, in the *American Chemist*, says the cheapest process for making an oil that will not flash, that is, emit an inflammable vapor, below 100° Fahr., is the following: 1. Run off the naphtha down to 58° B., instead of 65° to 62°, the usual point. 2. Then expose the oil in shallow tanks to the sun or diffused daylight for one or two days. The increased expense of this plan of refining would not reach more than three or four cents per gallon.

Artificial Marble.

The *Engineer* describes how an excellent imitation of marble is made in London at a small expense. The marble is the so-called Marezzo marble. A large sheet of plate glass is first laid horizontally on the table, then a skein of tangled silk, knotted at the opposite ends and soaked in coloring matter, is pulled out into a rough rectangular form, the rectangle being crossed in all directions by the tangled threads, and laid upon the piece of glass, the knots lying beyond the edges of the glass. This first skein is colored to form, say, the blue veins; then another skein, soaked in other coloring matter, may be laid over it to form other veins. Then some Keen's cement lightly colored, is sprinkled over the skeins with the fingers to further add to the marbling effect, and after two or three sprinklings, it may be of different colors, the silk is quite covered by the wet layer of cement. Then the silk is pulled out by being lifted vertically upwards through the cement. More cement is then added, and the mass is smoothed by a trowel. Next, some fine cement is laid on, and over this a layer of canvas to give strength to the film, now about a sixth of an inch thick. Then comes a thick backing of coarse cement, making the whole five-eighths of an inch thick. On turning up the slab of plate glass, and looking at the face of the layers of cement, as fine a specimen of marble is seen as anybody need wish to view, all made in a few minutes. It is left on the glass twelve hours to dry, and is afterwards enameled and polished. It is not impossible that many a householder who thinks he has a fine marble mantelpiece might, by boring a little below the surface, be somewhat surprised to come upon a layer of canvas inside the stone.

BLOOD AS FOOD.—Attention having been drawn by Professor Panum, of the University of Copenhagen, to the amount of nutritious matter contained in blood, and usually entirely lost, Mr. Nielsen, of that city, has been endeavoring to solve the problem of fixing blood in forms suitable for food, and at the same time capable of preservation, namely: (1) as sausages, puddings, cakes, (being mixed with fat, meal, sugar, salt, a few spices,) to serve as a much cheaper compensation for meat, and intended more especially for the use of the poorer classes; (2) as blood-chocolate, more especially suitable to be used in hospitals, and otherwise in medical practice, in which latter form it has been recommended by Professor Panum, at a meeting of physicians at Copenhagen, and is now being employed at the hospitals of Copenhagen, the attention of physicians being directed to its effects. In these different forms it would be suitable for the victualing of vessels on long voyages, of besieged towns and fortresses, and, especially in the chocolate form, of soldiers on long marches, travelers in uncivilized tracts, etc.

GROWTH OF NAILS.—M. Dufour has made observations as to the rate of growth of the nails. Here are some of the results: The nails of the little fingers grow more slowly than those of the other fingers and the thumbs. The difference is about one ninth. The mean rate of these (excluding the little fingers) is about one millimeter (100th part of an inch) in ten days. The rate of growth on the thumbs is probably greater than that on the six longer fingers. There is little difference between the rates of growth in different animals. The nails grow at about the same rate on both hands. The rate of growth is not constant throughout the length of the nail; it is greater near the base. The rate of growth at the side parts is probably the same as in the middle part. The substance of the nail advances equally throughout its breadth. The rate of nail growth in an individual at intervals of several years shows sensible differences.

INSOLUBLE GLUE.—The liability of glued articles to come to pieces when exposed to the action of water, especially hot water, is familiar to every one. By adding to the water, with which the glue is mixed when required for use, a small quantity of bichromate of potash, and afterwards exposing the part to which it is applied to light, the glue is rendered insoluble, and the articles fastened with it resist the action of water. The proportion of bichromate of potash to be taken must be determined by experiment, but for most purposes one-fiftieth of the amount of glue required will be sufficient.

TESTING THE RICHNESS OF MILK.—It is said that the richness of milk may be quickly and easily tested by placing the milk between two plates of glass so arranged that one may be made to approach to or recede from the other by means of a screw, placing behind the plates the flame of a stearine candle, or any other standard light, and observing the point at which it is rendered invisible on separating the glass plates. This point, when compared with the permanent line indicating the best milk is the measure of the richness of the sample.

CEMENT ROOFS are coming into very extended use in Prussia. The cement is ground in steel mills and laid on with a thickness of only one-eighth of an inch. The roof is therefore a light one, weighing less than eight pounds to the square foot. With German prices, the cost is fifty-two cents to the square foot.

GOOD HEALTH.

Taking Cold in Warm Weather.

Many people think there is no danger of taking cold when the weather is very warm, and expose themselves in various ways when overheated, fatigued, or sweaty. This is an erroneous idea—destructive to life and health. When the system is fatigued with exercise, overheated or sweating, great caution is necessary to guard against taking cold. Some people say they never take cold, and have no fear of taking cold. But are they never ill in some form? O, yes; but they do not cough, and conclude they do not take cold.

Colds do not effect all people alike. All do not cough that have been exposed to cold; but the insensible perspiration cannot be suddenly checked without injury to people and animals. Hence it is dangerous to drink cold drinks when one sits down to rest, though if exercise is continued, they may be partaken of in small quantities with benefit. The systems of men and animals that exercise must not be rapidly, but gradually cooled.

Horses ought not to be watered when about to stop exercise, either in warm or cold weather. This practice subjects them to disease and often destroys their lives.

More than twenty-five years since, I read in "Cutter's Physiology" that when people were warm with exercise, or from other cause, they ought to throw something over their shoulders on sitting down to rest. An observance of this rule, has, I am satisfied, saved me much sickness. If men would put on a coat when resting, or after work at night, it would save them many bad feelings, sickness, and sometimes death.—*Moore's Rural.*

MORTALITY AS AFFECTED BY MARRIAGE.—In a paper read by M. Bertillon before the Academy of Medicine of Paris, the author—using as evidence the statistics of France, Holland, and Belgium—strongly maintained the healthful influence of conjugal association as compared with that of celibacy. The figures show that, between the ages of 20 and 35 years, 1,000 married men furnish six deaths; 1,000 bachelors 10 deaths; and 1,000 widowers, 22 deaths. From 30 to 35 years of age, the same classes, respectively, furnish 7.11 and 17½ deaths. From 35 to 40 years of age, the mortality is 7½, 13, and 17½ per 1,000 respectively. And so on in a series of tables for all ages, the married man has greater longevity than the single man. The same advantage of the married state obtains in the case of females, though up to the age of 80 the difference is not so apparent as in the other sex. From 30 to 35 the mortality is 11 per 1,000 for single women, and only 9 per 1,000 for married women, and this difference increases up to the age of 55. Thus from 50 to 55 years of age, 1,000 wives furnish only 15 or 16 deaths, while as many single women or widows furnish 26 or 27. This advantage remains very notable beyond that age, diminishing but little. In France, however, under 25, and in Paris, under 20 years of age, marriage is far from favorable, but even injurious, as also in the case of males. The mortality of unmarried girls of from 15 to 20 is 7.53 per 1,000; the mortality of wives of the same age being 11.86. The mortality of girls from 20 to 25 is 8.32; of wives of the same age, 9.92.

IMPORTANCE OF VENTILATION.—In an emigrant ship on one occasion, during a violent storm, the captain, in order to keep the decks clear and facilitate the working of the ship, sent the passengers into the hold, ordered the hatches to be fastened down, and kept them in that state all night. In the morning, when the hatches were removed, the hold was found to be full of the dead and dying.

A modified form of this state of things is to be found in many a house in every town—where partial murder is done night after night; and the result is shattered health. The body loses its tone and is reduced to that state in which it falls an easy prey to any infectious disorder, the seeds of which may be floating about in search of a fertile germinating bed.

Every man should be made to understand that he requires not less than 150 or 160 cubic feet of fresh air every hour, and that he should not use over again what has once passed through his lungs, till, like fowl water, it is cleansed by filtration. People should be taught to fear polluted air more than draughts—which would amount to a total reversal of the present belief; for we now see a general preference for the former. In this respect men might cull a lesson from the bees, who, while they lighten the temperature of the hive, do it not at the expense of healthful condition. Their mode of ventilation is perfect.

SUPPOSED CAUSE OF SEA-SICKNESS.—Dr. Anderson of London, writing in the *British Medical Journal*, considers sea-sickness to depend on an impression on the brain equivalent to a blow, given by every lurch or descent of the ship. In other words concussion of the brain is virtually the cause of sea-sickness.

REPORTED SPECIFIC FOR THE YELLOW FEVER.—The English Consul at Ciudad Bolivar, Venezuela, has reported to his government that a cure for the yellow fever has been accidentally discovered in that place—the specific is the juice of the Nerveine plant.

The Difference Between Disgusting Odors and Odors of Fever Poisons.

In a communication to the *Lancet*, Mr. Buée, of Slough, calls attention to the great difference there is between stinks and poisons. He says: "Stinks may or may not be organic, and may damage health; but fever poisons are organic, have a life, a growth, will produce their like, and, if planted in favorable soil, grow, run their course, live their natural life, die out, and leaving seed behind them, reproduce themselves; and, above all, have no smell. A boy who has never had scarlatina gets into a railway carriage in which an infected person has traveled; he smells nothing, yet takes the disease. A well attended person suffering from that disease or any other, has a scentless room; yet an incomer predisposed, though not smelling anything, takes the illness. The scabs from small-pox and cow-pox have no smell, yet they will not inoculate.

The fact is, though as yet we cannot see the germ, our microscopes and means not being at present sufficiently powerful, yet common-sense and reasoning from the habits of these poisons tell us, I think plainly, that they are organic and odorless. And if so, what should we do besides draining and ventilating? Why, decompose, disinfect and destroy the vitality of the germ, never allowing it, if once cast into the closet, to get again into the atmosphere alive. Chloride of lime, carbolic acid, and last, not least, though cheapest, solution of sulphate of iron, which last, I believe, gives out much ozone, and is as good a destroyer of germs as anything I know. Let one of these be used constantly in all closets, sinks, and drains. These poisons do not necessarily require a human body for their growth; they will grow on a dunghill or in a cesspool, wherever there is a favorable nidus, like fungi."—*London Pharm. Journal.*

What Kind of Food Must We Eat.

Resistant solid material, as well as elements of nourishment, are essential in food. Neither cattle nor horses could be kept alive long on fine flour, meals, or grains of any kind. Mixed, however, with grass, dry hay, or straw, they thrive. The walls of the stomach and bowels must be kept apart by solid material, on which friction may be exerted, in order to have perfect digestion. A dog lived twenty-one days, the only survivor of a wrecked vessel at sea, closely shut up in the cabin, by eating the thick, strong wood and leather binding of a Bible, while experiments with dogs fed on soft food, as gelatine, thin soup, etc., proved that they could live a single week on such diet.

Those persons whose diet is rather coarse, as bread of unbolted flour, large fruit eaters, bread and milk people in the country, etc., are exempt from the pains of dyspepsia. Those sustained mostly on very fine, concentrated, delicate food, washed down with tea, are gaunt in form, weak in muscle, and always taking medicine. Their food should have more bulk and solid, hard ingredients.

A poor man's family never lack for an appetite with a crust of brown bread. His neighbor's darlings, surfeit on rich cakes, highly seasoned dishes and nurtured in luxury, are the life of doctors and druggists. So says science.

POISON FROM SCRATCHING.—It is not from any poison inherent in the nails of a human being, or the claw of a bird or animal, that produces the poisonous effects sometimes experienced from a human or animal scratch. It is the dirt that is collected under them, and which cleanliness requires should be often removed, that causes the mischief. It is a kind of inoculation of impurities, and this, of course, produces the legitimate result in accordance with the kind of impurity which has become inoculated. The scratch of a person who keeps his hands carefully clean never irritates much, while that of a dirty hand may have serious results. We had recently in the papers a report of a man who died of the results of a scratch of his own dog's paw, and the doctors were discussing if this dog had not hydrophobia. They should have simply cleaned the dog's nails, and seen what kind of dirt he had between them. This man must have had a predisposition or great sensitiveness for poisonous matter thus introduced. In perfectly healthy persons such matters are usually driven out by inflammation and suppuration, and the patient's vitality gains the victory.

HEREDITARY INFLUENCES.—It is distinctly asserted by Prof. Lucas, and agreed to by others, that predisposition to any form of disease, or any malformation, may become an inheritance. Thus disease of the heart is hereditary; so are tubercles in the lungs; so also are diseases of the brain, of the liver, and of the kidney; so are diseases of the eye and of the ear. General maladies are equally inheritable, and gout and madness. Longevity on the one hand, and premature death on the other, go by descent. If we consider a class of peculiarities more recalcitrant in their origin than these, we shall find the law of inheritance to hold good. A morbid susceptibility to contagious disease, or to the poisonous effects of opium or of calomel, and an aversion to the taste of meat, are all to be found inherited. So is craving for drink, or for gambling, strong sexual passions, a proclivity to pauperism, to crimes of violence, and to crimes of fraud.



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SAN FRANCISCO:

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City Cocoonery.

We are watching day by day this last experiment of the preserving Neuman, in his endeavors to satisfy those interested in silk culture, of the adaptability of our climate to the perfect rearing and general health of the silk worm. We want to see him succeed, for upon the result of this attempt, will depend much of the immediate future of this industry in the lower valley country of California.

We are not sure but that he has hit it right in establishing his experiment just where he has, within the immediate influence and we might perhaps say, protection, of the cool ocean winds that are very sure to guarantee a temperature always under that, which numerous experiments indicate as being almost certainly fatal to the worms, viz. 95° Fah. So that should he make it a complete success, the experiment would have to be tried over again, so far as his peculiar method of feeding and management might or might not be successful under the torrid heat of the interior valleys.

Thus far the worms of all ages are apparently healthy, and we see no reason why he may not come out with the fullest success. His rooms, which are in Bancroft's building, Market street, between Third and Fourth, are daily visited by many, curious to see the progress of the worm through all its stages, from the egg to the finished cocoon.

The Colusa Sun incidentally mentions a watermelon weighing sixty-five pounds, from near that place.

Steam Plowing in California.

There are many reasons, why the steam plow should be introduced into our State for the cultivation of our soil.

First the general reason applicable to all countries alike—namely that plowing by steam is cheaper and better than by animal power. When we speak of steam plowing we have reference to the stationary system that has been in use in England, for a long term of years and which has been proved beyond any question, to be by far the cheapest and best system yet tried. Steam plowing is a success in England, Scotland, Germany, Egypt, France, the Argentine Republic of South America, and in Louisiana, and we ask the farmers and land-owners of California, why it is not a success here? We think the answer is to be found in the fact that the energy and skill of our mechanics have been heretofore, spent in endeavoring to perfect and introduce traveling engines to draw the plow, and new styles of plows or cultivators, with which to supercede the old-fashioned mould-board plow. While we would not discourage those who feel disposed to follow up these ideas further, we can not refrain from exchanging our firm conviction that the stationary plan is much preferable to any form of traveling or direct traction engine, ever built or suggested here or elsewhere. We are also satisfied if half the time, mechanical skill and money that has been spent and wasted on the traveling system had been devoted to the improvement and introduction of, the stationary plan, steam plowing would have been a success in our State years since, and our farmers and land-owners would have been reaping the benefits and profits of the system, as the English and others have been.

Special Reasons.

Among the special reasons why steam plowing should be introduced into our State, may be mentioned the difficulty of keeping up the fertility of our soils by the ordinary plan of manuring, by plowing in barnyard manure, and straw or growing crops to be rotted in the ground. Our summers or warm seasons, are at the same time so dry that such substances do not collect moisture enough to ferment and rot them as they do in countries where the warm seasons are also damp, circumstances necessarily combined to favor this mode of fertilizing the soil. As a substitute for these ordinary modes of fertilization, we must adopt a system of plowing deep, and bringing up virgin earth every three or four years. The soil in all our great valleys is made land, and just as rich and productive two and three or more feet below the surface as it is six inches below. All we want then to keep up the fertility of our wheat fields, is to bring this soil to the surface and expose it to the air, as often as we have exhausted the fertilizing, or wheat making properties of that already cultivated. Steam plowing is the only practical plan of accomplishing this purpose, and the sooner we adopt an approved and economical system—one that is already a success wherever it has been tried—the better.

Its Advantages.

We know of no enterprise that, at once, promises so much benefit to the State at large, and at the same time offers so good an opportunity of a profitable investment of capital as the introduction of such a system of cultivating the soil of this State. It would have an advantage over the animal system here that it does not possess in any other country, on account of the higher wages paid for labor here and the greater expense of teams and their keeping here, than in other and older countries like those of England and the Eastern continent.

Then again, our grain and all other fields to be plowed here are comparatively large and level—advantages of no small consideration in connection with this system of cultivation.

An other reason in favor of a more rapid mode of preparing the soil and putting in grain in this country, is found in the comparatively short time we have here in which all this work for each year has to be done with animal power. No small consideration in favor of steam power in our opinion, will be found in the fact that with it the plowing season may be very much lengthened out and summer fallowing may be continued with steam, long after the ground becomes too hard to be worked with animals.

Plowing by Contract.

We are credibly informed that there are thou-

sands of acres in this State the owners of which would be glad to have plowed by contract the moment the machinery is introduced and shown to work successfully. To such owners we would say the best way, and the most profitable way for those who have a direct interest in this enterprise, is to put in a small amount of money each and form a joint stock company, and import from the best builders in England a lot of approved machinery, and do your own plowing. If then it succeeds you can import or build others and do other peoples plowing by contract, and make money. Such companies are organized and successfully worked in England. Thus among numerous private firms who steam cultivate for farmers, in England, one in Kent has six double engine sets, while a contractor in Lincolnshire has ten sets, representing a capital of \$100,000. The Northumberland Steam Cultivating Company have twenty sets of apparatus, consisting of forty engines and their capital stock is \$210,000, and the area of land annually worked per year is about 60,000 acres. There are many such companies organized and in active operation in England who send their plows around to do plowing for farmers, as our threshing machines go around to do their threshing. We again ask our farmers and land owners why the steam plow should not be a success in California? Who will be the first to organize a company and bring about this most important revolution in the agricultural operations of our State?

In comparing our remarks in last week's issue with our present, it may appear to some as though we were arguing both sides of the question. On this, as with other subjects, we submit one or more different views, in the hopes of arousing the attention and drawing out the opinions of practical farmers and mechanics, upon the important subjects we may present.

Horticultural Exhibition.

On Thursday next, the 22d inst., will be opened in this city, the finest horticultural exhibition ever before held in California. The "Horticultural Hall Association" having purchased the buildings recently occupied by the Skating Rink Association, together with adjoining buildings, has fitted them for the purposes of horticultural, mechanical and art exhibitions, in a style perfectly gorgeous and wholly unequalled by anything elsewhere in the United States.

Heretofore at all exhibitions by the Mechanics' Fair or other societies, no attempt has been made at artistic display in the finish of the pavilions themselves, they being but plain temporary structures; but now, to the most wonderful display of products ever before exhibited, will be added, to give life, beauty and brilliancy to the scene, the magnificently furnished hall itself, vying in splendor with those of Europe, where all the refinements of art and lavish expenditure of money are brought into play to please and captivate the visitor, and we learn that after the exhibition is closed, the rooms will be converted into a place of general resort, after the style of the Winter Gardens of Europe.

To attempt a minute description would be simply to devote a full page of the RURAL to the subject, and as all who read this notice, who can possibly visit the exhibition, will do so, we shall leave the matter with them, to say if we have used nouns, adjectives or adverbs, of too great length or too frequently, in telling our readers of the resplendently beautiful and interesting exhibition in preparation for their enjoyment.

The Prairie Farmer.

The Editor of the *Prairie Farmer*, H. D. Emery, the man that even the great Chicago fire—though burning everything he had—couldn't make "dry up" for a single week, but who issued his regular 40,000 edition to his subscribers as though no fire had occurred—called on us a few days since.

He has been during a two weeks' stay, taking a somewhat hasty tour over the State, with an eye more to its agricultural capacities than its natural wonders and curiosities. Has taken a look at San José valley, glanced over Napa valley, Calistoga and the Geysers; has interviewed our fruit markets, beet sugar factories, wheat fields, and our grain barns—which are as large as all-out-doors, for they are nothing else—and knows, and probably will tell us and all the readers of the *Prairie Farmer*, exactly what he thinks of them and California generally.

We just hope he will, for to get anything out

of him, as he stood or sat with us, as to what his views were, we couldn't do it; though an exceedingly—him, not us—agreeable, social and genial gentleman. We shall look to future copies of the *Farmer* with increased interest.

Rotation Impracticable.

We have selected the above heading more with a view of attracting attention than to attempt to maintain the declaration; and yet under the peculiar conditions that pertain to our climates and modes of farming, it is strangely enough truthful.

Year by year our experience convinces us the more fully that, in California we must admit of exceptions to very many of the rules that have heretofore been admitted as of general application in the science of agriculture. There are always some who look upon anything new, as an innovation upon what they consider established systems, and scouting at every attempt at change, as though agriculture had already attained to the utmost limit of perfection.

Antiquated Notions.

We are not among those who choose to plod in the old paths of our agricultural fathers merely because they did, and particularly when we find ourselves removed so far away from the fields in which they labored and in a country of which they knew nothing. Nor is it certain but that many of the practices that from olden times have received the sanction of the best practical cultivators in other countries, may yet be found inapplicable here.

We are led to remark thus on finding a disposition in many agricultural writers, to cling to old notions in the preparation and modes of fertilization of soils, as though a principle had been established, applicable alike to all manner of field crops, with every variety of soils and in every country.

On a Small Scale.

We are willing to admit that when farming is carried on, on a small scale, where fifty or a hundred acres of grain is the limit of production, and where the twenty-acre cornfield is the pride of the whole county, and the five-acre potato patch the boast of the neighborhood, that there, with oft-recurring rains during the whole of summer and winter, something like a system of rotation of crops may be and is adapted, greatly to the well-being of successive crops and to a continued maintenance of the fertility of the soil.

The straw and coarse hay of the farm can be thrown into the barnyard; a hundred head of cattle can convert it into an excellent manure, with which to enrich the corn ground; the corn can be fallowed with a grain crop, and the grain by grass and clover, and the diversified crops of vegetables and fruits have their respective places in the general rotation, and all goes merrily round, and this is rotation; and we admit applicable to farming on a small scale. But how will it apply to farming,

On a California Scale.

Where is the manure coming from to keep up the fertility of our wheat fields of from one thousand to thirty thousand acres? Mr. John Mitchell having raised that number of acres of wheat this year on his own land. Why, we don't believe there is a farm east of the Rocky mountains that can turn off from all of its barnyards, ten thousand loads of manure; and yet this would be but a single load to an acre, of a field of 10,000 acres, and there are many wheat fields in California of this number of acres.

It is simply idle then to talk of keeping up the fertility of our vast wheat fields with farmyard manure or rotation of crops. But, says the Eastern farmer, why not cultivate and plow under green crops, as of clover? Simply because we cannot grow the clover on 10,000 acres of wheat land. Well then, plow under the straw of the wheat, taking only the heads or the grain from the land. The straw would not rot if we did; and this method of harvesting is found to work an injury to the quality of the grain.

The Only Alternative.

We must finally resort to the use and application of phosphates and gypsum in which a few bushels suffice to the fertilization of an acre. A reasonable length of stubble can be plowed in and mixed with the soil sufficient to supply the requisite humus and the phosphate, plaster and the atmosphere will do the rest, aided by thorough and deep pulverization at the proper season of the year.

This method is largely adopted in France, Germany and Russia, and with most signal benefits, on lands which owing to their great extent, they find impossible otherwise to keep in a state of perpetual wheat-bearing fertility.

After Harvest.

Within the last year we have heard of numbers of farmers who have borrowed the RURAL PRESS of their neighbors, because they liked to read it, and their families liked it, and who were determined as soon as their wheat was harvested to subscribe for it, so that they could retain it as a book of reference on a thousand subjects interesting to the farmer and his household.

We would suggest that the persons who have kindly lent their RURAL round among their next-door friends, would just hint to them that now is a good time to commence their subscription, because we are now upon the eve of the most interesting period of the whole year. We allude of course to the near approach of the farmers' great carnival season, the annual, Sante, District and County agricultural and horticultural fairs.

These with all the varied interests connected therewith, will be reported in our columns as fully as lies in our power; so that whilst those fairs in which our farmers are more immediately interested may pass under their own personal notice, others which they perhaps cannot see, will, through the RURAL, be reported to them, and thus they will be posted as to what is going on in other parts of the State and country.

Owing to the general prosperity in agricultural pursuits this year, our bountiful wheat harvest and fruit prospects, and the splendid condition of all manner of live stock throughout the entire State, we anticipate a season and succession of fairs of more than ordinary interest. By subscribing for the RURAL you will have the record of all their points of greatest interest, which you can file away for future reference.

Bee Hunting.

EDITORS PRESS:—You seem very willing to answer any questions your subscribers ask you. I have never made a request before, but if you will be kind enough to tell me how to hunt wild bees, you will greatly oblige me. No one keeps bees within ten miles of me and yet they are on every flower around me, so I think they must be wild.

Truly yours,
Clear Lake, August 2, 1872.

Bee Hunting.

Procure a small box, four or five inches square and two inches in depth, with a transparent, movable lid or cover,—a piece of window glass will answer. In this box put a small piece of honeycomb containing honey, with the cells opened. With box and cover in hand, take a bee captive while partially hid in a flower. At first it will show fright, but will soon alight upon the honey and commence filling itself, entirely forgetting its confinement.

Now place the box on some prominent object, as a fence, stump, or stone, and carefully remove the lid; take a position near and remain quiet. In about two minutes the bee will take wing, and after rising up and making a few rapid circles around, will take a "bee line" for home; whilst it is for you to mark well the direction.

In from five to eight minutes, if the distance be not more than three or three and a half miles, the bee will return, bringing from one to three of its comrades in company; let them all load up, do and return again and you will have half a dozen or more together in the box; close the lid and start off in the direction the bees come and go, till you arrive at the nearest timber.

Here set down the box and allow them to go and come till you have a new set directly from the home of the bees. Go again in the direction the bees lead, and repeat the process till you arrive at the tree or some cavity in the rocks where the bees are. As you approach very near the swarm, the rapidity with which they go and return and the increase in numbers, is surprising and pleasing, and making their discovery certain.

GRASSHOPPERS.—A friend who traveled from San José to Santa Barbara a few weeks since, writes: "After passing San Luis on my way down, the grasshoppers were very bad until I reached Santa Barbara, and some there too."

If you never saw them, when considered plenty, imagine every square yard to have twenty-five hoppers, for a distance of fifty miles, and that is not an over-estimate for the country along the Santa Maria river."

The famous Easterby farm, near Millerton, Fresno county, yielded nearly 4,000,000 pounds of wheat this season. Its proprietors propose to put in upwards of 12,000 acres of wheat next season.

The Diamond—No. 2.

It will doubtless interest many of our readers to learn how the elegant brilliant, which always sparkles and flashes so brightly in its finished state, occurs in Nature; how it appears when taken from its matrix, how it is obtained, and how distinguished from other crystals similar in appearance.

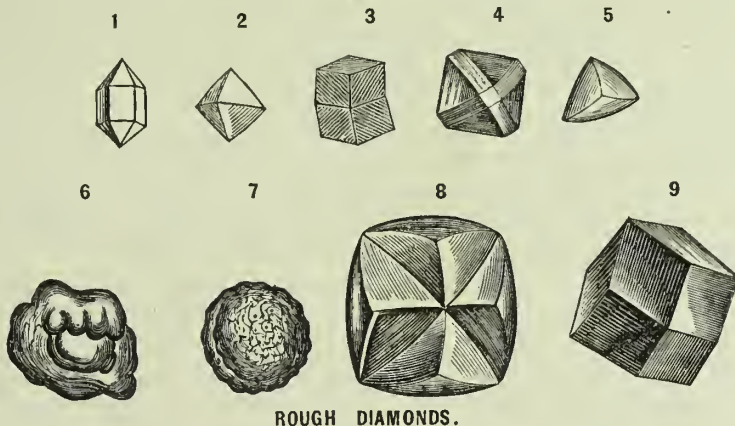
The Diamond in the Rough.

Passing over, for the present, the manner in which the diamond is washed out from the gravel and separated from the foreign matter in which it is often encased, we pass directly to the consideration of the form and character which it presents before art has lent its aid to shape and further beautify it.

The diamond usually occurs crystallized, and with rare exceptions in small spherical grains, which often present very distinct crystalline faces, transparent, translucent or opaque; sometimes slightly tinted with blue, green, clove brown or rose red. It is also found massive or simply crystalline, without lines of crystallization as in the black diamond or boort, as it is sometimes called, and which is used for drilling and other purposes in the arts.

The primitive form of the diamond is a regular octahedron, or some figure geometrically connected therewith. A very common form is that of two four-sided pyramids joined at the base, as shown in Fig. 2. Its secondary forms are very numerous—the following being among the most common:

The octohedron, Fig. 4, modified by having its edges replaced by narrow bands. The same



ROUGH DIAMONDS.

figure is still further modified, so as to present 24 curvilinear facets, each face being divided by elevated edges, into two smaller ones, as shown in Fig. 8. This modification is sometimes carried still farther, into 48 divisions. Sometimes it takes the form of regular cubes, as in Fig. 3; then, again, it appears slightly rhomboidal, with 12 facets, as in Fig. 9. The lines of the natural faces of the diamond are always slightly curved, as in Fig. 5, and the faces themselves slightly raised, as imperfectly shown in the same figure. These curvatures are an infallible test for a diamond.

Though crystallized, and of the purest water, diamonds sometime entirely loose their regular form and assume a massive or irregular, nodular shape, as in Fig. 6.

The Boort or Black Diamond.

Fig. 7 represents a somewhat peculiar, though very common, rounded, concretionary form, denominated boort or boart, which is classed among the black diamonds. This curious substance has no cleavage, like the true diamond, and is supposed to be a sort of connecting link between the carbon in its ordinary forms, and as a true diamond; hence it is sometimes called "diamond-carbon." Its hardness is equal to that of the true gem, while its specific gravity is much less. Under the microscope it appears distinctly crystalline, and apparently an aggregation of granules or lamellas of diamond, analogous to a grit of quartz sand. It sometimes contains cavities, empty or filled with foreign substances. It is found of various sizes from that of a pea or less to a large sized marble. One is reported to have been found which weighed a pound. It was formerly but little valued; latterly, however, it has very much advanced in price. Miners sometimes soak it in vinegar to add to its weight, as some unscrupulous persons sometimes do retorted gold in water. It is employed chiefly as dust for diamond cutting. It is also used in the diamond drill. When burned it leaves a small residue of ash, the product of the foreign minerals which become entangled in its cavities, probably during its aggregation.

All diamonds having regular forms are of a laminated structure, as shown in Fig. 3, and are readily divided along the planes of lamination. This peculiarity is often taken advantage of by diamond cutters chipping off small pieces when the cleavage is properly presented for the desired reduction of the jewel. The work of reduction is thus greatly facilitated over the ordinary and exceedingly slow process of grinding.

Manner of Searching for Diamonds.

Diamond placers, where water is convenient and plentiful are worked much as gold-placers are, by washing or sluicing off the lighter earthy matters, when the residual heavy portions are placed upon a table, where a convenient search may be made for any loose diamonds which may be found. That done, the lumps which have not been dissolved are carefully broken up and examined. Sometimes the diamond is found encased in a hard concretionary substance to which the diamond is a sort of kernel. Of course much care must be exercised in breaking up such lumps or concretions to find the precious jewels which they encase.

The labor of washing is more or less tedious, according as the gravel is more or less yielding to the softening or dissolving action of the water. In some places the gravel is placed in holes or hollows, and soaked for some days to render it more easy for washing.

In most of the diamond fields of the world water for washing is very scarce, and various devices are called into requisition to meet that important want, a condition of things which

will be fully realized by all gold miners who have worked for the precious metal in extremely dry districts.

The Arizona Diamond Fields.

We understand from those who are familiar with that portion of Arizona in which diamonds have recently been discovered, that the country there is quite well watered and abounds in excellent timber, which may be converted into convenient forms of lumber, in the immediate vicinity of the placers. The country also abounds in grass during the summer months; game is also abundant. The winter climate there corresponds very nearly to that in the foothills about Nevada and Grass Valley in this State. The snow frequently falls a foot deep or more in the valleys and table lands on which the diamonds are found, but soon disappears; while upon the adjacent mountains it lays continuously for from three to five months.

How to Distinguish Diamonds from other Crystals.

The first thing to be looked after when a suspected stone is found, is to see whether it will cut glass or quartz with its sharp edge. A diamond will do so readily. When the specimens are too small to be held between the thumb and finger for trial, they may be pressed into the end of a stick of hard wood. This test will determine whether the specimen is quartz or not; but will not distinguish it from topaz, sapphire, zircon, etc., as these stones will also cut glass. It is always safe to save everything that will cut glass or quartz, and rely upon a professional expert to decide upon its name and value.

The most certain test for the diamond is its carved edges and faces already referred to, which will always be found on at least one or more of its edges and faces, if not upon all. A diamond may also be readily distinguished from a quartz crystal by the form of the latter, which is always six sided, while the diamond will be either, four, eight, twelve, etc., as already described. The annexed figures 1 and 2—No. 1 being a crystal of quartz and No. 2 being a diamond—shows the striking and unmistakable difference between a quartz crystal and a diamond, when both are perfect and unmodified in form.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING JULY 16TH.

STAGE MACHINERY.—Geo. Washington Hinckley, San Francisco, Cal.

SHOE-FASTENING.—Ira J. Saunders, Davisville, Cal.

REVOLVING FIRE-ARM.—John Gordon, San Francisco, Cal.

MEDICAL COMPOUND FOR SMALL-POX.—Alber Haws, Battle Mountain Station, Nevada.

MEDICAL COMPOUND FOR CHOLERA-INFANTUM, ETC.—Albert Haws, Battle Mountain Station, Nevada.

DIRECT-ACTING STEAM-ENGINE.—William Davis Hooker, San Francisco, Cal.

PROPELLING MECHANISM FOR BOATS.—Patrick Rippingham, Virginia City, Nev.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Something for the Wine Men.

We have been shown a device for filling double-headed tanks and casks, which seems to fill a want that has long existed among wine makers. It is well known that it is difficult to completely fill a tank or cask so as not to leave any space between the contents and the top. Wine is deteriorated to a certain extent by the surface being in contact with air, as it is usually, under the present system of filling tanks. It is proposed to obviate this difficulty by using a wooden tube, shaped like an inverted cone, which is inserted in the bung and allowed to project twelve or fifteen inches above the top of the tank or cask. It is made of oak, and can be driven in tightly, and then plugged in the usual manner, making, as it were, a projecting bung hole. By this means the wine is poured in until it comes to the top of the tube, when, of course, the tank or cask will be perfectly filled, and the air can have no access, so that the wine will not sour. It can remain in the tank while the wine is fermenting, and the surface will not sour. The small surface presented by the hole in the plug will prevent as much evaporation as usually occurs, and what space becomes vacant in the tube from this cause can easily be refilled.

This simple device for perfectly fitting casks will be fully appreciated by those who are aware of the difficulty heretofore existing, and several wine growers to whom it has been shown have given their opinion that it will fully answer the purpose required. Parties desiring to use this device, or to see it, can apply to the inventors, M. Fulda & Son, corner of Commercial and Drum street, in this city.

State Board of Agriculture.

A special meeting of the State Board of Agriculture was held last week, President Reed presiding, and Directors Young, Carey, Ross, and Coleman being present. Minutes of the last meeting were read and approved. Sundry bills were allowed.

President Reed reported the terms upon which the Pardee detective ticket could be obtained, and he was authorized to make all necessary arrangements for its use.

Directors Reed, Carey and Ross were placed on the committee to estimate the cost of a new grand stand at the Park, to report at the next meeting.

The Secretary was directed to advertise for proposals for furnishing hay, straw, etc.

C. T. Wheeler and Robert Hamilton were appointed a Committee on Regatta.

R. S. Carey was elected Superintendent at the Park, and C. H. Ross, Superintendent of the hall. Coleman was elected on the Committee on Tickets, Badges, Purses and Money.

Reed, Cary and Beck were appointed a committee to superintend the sale of stock at the Park.

Coleman, Younger, Mills, Ross and Hoag were appointed a committee to visit the several District Fairs to be held before and after the State Fair.

The Corresponding Secretary was directed to issue circulars in the name of the Board of Agriculture to the Boards of Supervisors of the several counties of the State, urging upon them the propriety of putting in force in their counties the State law for the encouragement of planting shade trees along the highways.

The Visiting Committee, through Colonel Younger, its Chairman, reported that they had visited several portions of the State, and found the best of feeling everywhere towards the coming State Fair; and that, in their opinion, the exhibition of stock in all the departments will be double that of any previous year; and in all other departments the exhibition will be fuller than ever before.



Our Own.

If I had known in the morning
How wearily all the day,
The words unkind would trouble my mind
That I said when I went away,
I had been more careful, darling,
Nor given you needless pain,
But we vex our own with look and tone
We might never take back again.

For though in the quiet evening
You might give me the kiss of peace,
Yet it will might be that never for me
The pain of the heart would cease!
How many go forth at morning
Who never come home at night? [spoken]
And hearts have broken from harsh words
That sorrow can ne'er set right.

We have careful thought for the stranger,
And smiles for the sometime guest;
But oft for our own the bitter tone,
Though we love our own the best.
Ah! lips with the curve impatient,
Ah! brow with the shape of scorn,
Twere a cruel fate, were the night too late
To undo the work of morn!

For California Girls—Education of our Daughters.

Sleep.

Good scholars need more sleep than they are inclined to take. The interest in lessons, the increased activity of the brain, makes them wakeful, and often the more they need sleep, the less able are they to find "the dominions of the drowsy gods."

In the majority of our large schools I find the hour of retiring to be ten o'clock, and of rising at six o'clock. That will do for some, but the younger and more sensitive need from nine to seven in winter, and from nine to six in summer. I would give them an hour longer during the long nights, because at best, students study more by artificial light than their eyes can well endure. In cold weather they are more inclined to keep to books, less inclined to out-door exercise, and hence are better off in bed on cold mornings than anywhere else.

Students do not get as much sleep as their hours in bed seem to indicate. If they have studied closely and to advantage in the evening, it takes some time to arrest the mental action, to cool off head-wise, so to speak. Intellectual activity makes them dislike to retire at night, and brain weariness makes them dread to rise in the morning, and they get up feeling wretched and as if they never did and never could learn any thing. Hence, while they might retire before the required time, they do not want to, and would not get any sleep if they did, while the school world in which they are so much interested is all astir. When once asleep, they go on until a late hour if not called by duty, as is shown by the many who sleep over the breakfast hour, and go without that meal if not obliged to rise at an early hour for morning prayers. Instead of giving a general permission to retire early, and requiring all to rise early, we would reverse the order, and require all to retire early, and let them rise when they have slept all they wanted to.

School-Girls Over-Anxious.

Those who have had the most experience in our best schools, maintain that our young ladies are over-ambitious; that they try to do too much in too short a time; that they are much more sensitive to class-standing than boys; that they are more elated by success, and more depressed by failure; that rather than suffer the latter, many are ready to sacrifice food, sleep, rest, recreation, and that many fail by reason of over-anxiety. As a Professor once said to me: "The girls would get along well enough at school if they were not so sensitive." "True," I replied, "but then they would not be girls." It is a part of their organization, and ought not to be deprecated, and so directed as not to take on morbid manifestations. In the fear that they shall fail, they study too long on a lesson and get mentally muddled, and hence fail at a recitation from sheer weariness of head. They say sometimes, "The more I study the less I know," and this often true. It is not the number of hours, but the life, clearness, and strength which we bring to the lesson, that accomplish the work.

When these are exhausted, the book should be laid aside. In lack of a good night's sleep they may fail to recite a lesson well learned the day before, or may fail to learn the present lesson, though they bend the head and fix the attention till the neck aches and the eyes are dim, simply because the head, so to speak, is so weary it can't work.

Between science and literature, music and mathematics, ancient and modern languages, art studies, and general aesthetic culture, our young ladies have undertaken more than they with their small waists and weak spines, can well accomplish. Let each one look over the list and decide which they will leave and which they will learn. In view of the many things which they may, can, must, might, could, would or should study, I have inquired of their professors as to what class of studies seemed best adapted to their mental organization, and from the report given, there must be much good scholarship among them or else much credit given on the score of gallantry. Each teacher would claim that they were remarkably successful in their department, better on an average than a class of gentlemen. For instance the Professor in mathematics would say that there was a nicety, an exactness in "feminine minds," which fitted them peculiarly for figures and made them enjoy greatly the results. The linguist will say: "Young ladies are so interested in literature, appreciate exquisite renderings, etc. The teacher in the natural sciences will tell you the world of nature is just the field for women. The physical sciences give them so much pleasure in out-door life, and teach them much that is of practical utility. I too have looked with interest to this department, hoping it would afford permanent interest to our daughters, so that there would be continued and profitable study after leaving school, and, thus less tendency to fiction, embroidery, and "fancy fixings" generally. I have hoped that a more intimate knowledge of the world above, beneath, around, would render them more steady and sensible, and less nervous and excitable.

Training Girls for Domestic Duties.

Training girls for household duties ought to be considered as necessary as instruction in reading, writing and arithmetic, and quite as universal. We are in our houses more than half of our existence, and it is the household surroundings which reflect more largely the happiness or misery of domestic life. If the wife knows how to "keep house," if she understands how to "set a table," if she has learned how things ought to be cooked, how beds should be made, how carpets should be swept, how furniture should be dusted, how the clothes should be repaired, and altered, and renovated; if she knows how purchases can be made to the best advantage, and understands the laying in of provisions, how to make them go farthest and last longest; if she appreciates the importance of system, order, tidiness, and the quiet management of children and servants, then she knows how to make a little heaven of home; how to win her children from the street; how to keep her husband from the club-house, the gaming-table, and the wine-cup. Such a family will be trained to social respectability, to business success, and to efficiency and usefulness in whatever position may be allotted to them.

It may be safe to say that not one girl in ten in our large towns and cities enters married life who has learned to bake a loaf of bread, to purchase a roast, to dust a painting, to sweep a carpet, or to cut and fit and make a dress. How much the perfect knowledge of these things bears upon the thrift, the comfort, and health of families may be conjectured, but not calculated by figures. It would be an immeasurable advantage to make a beginning by attaching a kitchen to every girl's school in the nation, and have lessons given daily in the preparation of all the ordinary articles of food and drink for the table, and how to purchase them in the market to the best advantage, with the result of a large saving of money, an increase of comfort, and higher health in every family in the land.

To the above, which we clip from an exchange, we are happy to add that in many institutions for the education of girls, provisions have been made to fill the want here referred to, at least to a great extent. In the Packer Institute, in Brooklyn, N. Y., the young ladies are taught the theory and practice of baking, cooking,

preserving, making wine, etc., under the instruction of their excellent teacher in chemistry, Professor Eaton. At the yearly examination of this class they give proof of their proficiency in the practical application of chemistry to the art of preparing food, by an elaborate lunch, in which everything is prepared by the young ladies. They have baked the bread, puddings, and pies, made the preserves, the fruit-wines, etc.; and we need not say that this practical part of the examination is better enjoyed by the examiners than the theoretical, in which, by the way, these pupils are as proficient as would be a pride for any male college in the land.—*Ex.*

Marriage in Hungary.

Among the mountains in the eastern part of Hungary a fair of marriageable youths and maidens is held every year. To the plain of Kalinoas, parents repair with their sons and daughters from a large extent of country. They bring with them such cattle, furniture and money as they expect to give as marriage portions. When the tents are pitched or the wagons ranged in order, the match-making begins. The girls dressed in their best are seated among their treasures. The young men walk around to see what strikes their fancy. The fathers and mothers are more interested in prying into the value of the property that is to go with the several maidens. Every article is examined in order that its defects may be noticed. If the respective parents are satisfied with the property that is to be given, the young people are brought together to see how they like the selection that has been made. If they are pleased with each other, a priest is called, who marries the couple, chants a hymn and says a prayer. The bride kisses her parents, says good-bye to her old friends and starts out with husband she never saw before. We like this frankness and lack of sham. Americans do substantially the same things in order to perfect eligible matches, but are at a good deal of pains to cover up their intentions.

SERIOUS WARNING TO PARENTS.—In Detroit, a child about four years old had always slept with his parents, but for some reason the father made up his mind that he must sleep alone. Making some disturbance, and saying he was afraid of bears and wolves, the father became irritated, and shut him in the dark room. The boy screamed at the top of his voice for a few minutes, beat on the door, and entreated to be taken out, but the father was unrelenting as a rock. The wails gradually died away, the lad ceased to shout, and after half an hour the door was opened. He was not found asleep as expected, but he was crouched down in a corner, his feet drawn up under him, and it took only a moment to convince the parent that the boy had been rendered a lunatic or an idiot. He laughed and talked to himself, did not reply to a question, gave no one any notice, and every effort made to bring the boy's reason back failed. He would not speak, gave the other children no notice, but wanted to roll around on the floor and play with spoons and sticks. The boy's reason had been affected by his fright, and he may be an idiot for the rest of his days.

SILENT ENDURANCE.—Silent endurance appeals to us from boat and bird. Prof. Silliman, the younger, tells of his capture of a wild bird upon one of the islands of the Pacific. The forests were deep and dark, and the birds never having learned to fear man, were so wild that they were perfectly tame. He selected a white one of lustrous plumage, and, breaking its feathers pressed his little lancet down towards its heart. The bird quivered and its soft eye looked into his, as a drop of blood stood upon its snowy breast. Not a motion, not a noise, and for the moment he turned away, overcome by his feelings. Had it screamed or fought, he would have pierced its breast without care. It was silent endurance that touched him.

The feature which distinguishes man from other animals is that he is able to observe and discover those laws which are of such mighty moment to him, and direct his conduct in conformity with them.—*Froude.*

LAMPS do not talk, they simply shine. A lighthouse sounds no drum, it beats no gong, and yet far over the waters its friendly spark is seen by the mariner. So should it be with religion.

TRUTH sometimes tastes like medicine, but that is an evidence that we are ill,

Young Folks' Column.

How to Make a Kite.

Prof. Peabody, of the Massachusetts Agricultural College, tells the boys in the *Bright Side* how to make a kite that will fly:

Among the various kinds, the "three stick kite" is probably the surest for the beginner. Get three light, thin, straight sticks of cedar, pine, or similar wood; smooth them, and let them be about half an inch wide by an eighth thick; perhaps a little more. Make two of them thirty inches long, and the third twenty inches. Mark a point ten inches from the end of each of the long sticks, and in the middle of the short one; cross the three sticks at these points, and tie them firmly with twine. Cut notches lengthwise across the ends of the sticks, and tie a strong twine from end to end, making the outline of an irregular six-sided figure, of which the bottom may be sixteen inches long; the sides about eighteen and one-half; the shoulders eleven, and the top eight inches. These numbers may vary; it is necessary only that the corresponding sides should be exactly alike or the kite will not be well balanced. This finishes the frame.

Now lay down a sheet of strong, light paper, place the frame upon it, and cut the paper about two inches larger than the frame, all around. Fold the outside over the strings, and paste down with good boiled flour paste, cutting out the corners where they over-lap.

The next thing is to hang the kite. Measure from each lower corner five inches along the sticks; make a small hole on each side of the stick through the paper, and tie in the ends of a string, which shall measure, when tied about fourteen inches from stick to stick. This is the lower loop. In like manner tie an upper loop, about eight inches long, to points about three inches from the upper end of the same stick. Remember to have the loops on the face side of the kite, that is, the side on which the sticks are not seen. Join the middles of the two loops by a string about twenty inches long; this is the belly-band. Hang the kite by the belly-band over your finger, and hold it so that when one end of the kite touches the floor, the other may be about a foot above it; there is the place to tie the line, making it so fast that it will not slip. When the kite floats in the air, it should lie at an angle of about forty-five degrees; if it stands too straight, the string is fastened too low on the belly-band; if too flat the string is not low enough.

The kite must have a tail to balance it. If the tail is too heavy, the kite will not raise it; if too light, as is usually the case, the kite will not "stand" steadily, but will dive from side to side. Whenever it does that, it should be taken in, and more weight added to the tail. Cut pieces of writing paper, four inches wide and six or eight long; fold back and forth, fan like, and tie three inches apart on a string, until you have made three or four yards. Then cut a quantity of strips half an inch wide, and twelve or fourteen inches long; tie the bunch of them by the middle, fold the ends together and tie again, making a tassel, which you may tie to the end of the tail. If the strips are of colored tissue paper, all the gayer. Tie a string about twenty inches long to the two lower corners of the kite, and fasten the tail to the middle of it. Choose a smooth, close, well spun string, linen is best—and costs most—not too large, or its weight will make it "sag," or too small, or the kite will fly away with it. Finally, don't try to fly a kite when the wind don't blow.

Now, just as each of your good mothers thinks she has a recipe for making cookies, which she thinks is a little better than any other, so every boy has experience in kite-making, thinks his way is rather the best, and quite likely he may find fault with some of our proportions. If so, he has perfect liberty to change them to his liking. The important items are: the kite must be truly made so that one side may just balance the other; it must hang at the proper angle to the wind; and the tail must be rightly proportioned in weight to the size of the kite.

If the kite don't behave well at first, think which of these items has not been carefully attended to, and correct. Don't give up at the first trial.

The eye, the noblest member of the human body, does not see itself; and piety and godliness resemble it, in being destitute of self-consciousness.

DOMESTIC ECONOMY.

How to Give Dinners.

The size of the party is a matter of consequence. Party is a noun of most indefinite multitude. Some numbers arrange well a table—some ill. Six, ten, fourteen are favorite numbers. They balance symmetrically and give a proper alternation of sex. But as a general rule it should be set down that the "little dinner party" shall not comprise more than ten. But given six or ten well selected, judiciously grouped people, a round table, a moderate temperature, sufficient light, and a good dinner, and what further provocation does mortal man need to make him agreeable?—if agreeability within him lies.

The dinner need by no means be elaborate. Soup, fish, a joint of poultry, and a pretty dessert, with bright conversation by the way of sauce, is sufficient for any small party. And a dozen such in the course of a year do more toward cementing friendliness and extending our hospitable influence than any number of "swell" repasts from a confectioner's, or even than a biennial jam of the most recherche kind, presided over by Browne or furnished by Iach.

Every table should have a center—and that center should not stand too high. Be it fruit, flowers, or confectionery, its top should be below the level of the eye. Nothing interferes with talk to much as to be forced to dodge this way and that to catch a glimpse of one's opposite neighbor. There should not be too much on the table at a time. A crowded look destroys elegance. The eye demands space as well as the elbow. Two vegetables with each course are sufficient.

Hot plates, iced water. Blessed duo! Temperature should be studied by every housekeeper. It is all-important and within the reach of all. A cold plate makes a good dinner bad, and a bad one horrible. A hot plate (which costs nothing) improves everything. A hot room dulls and stupefies. Conversation wiles with the flowers.

If the dinner service be white it can be enlivened by various little touches. The napkins may boast a scarlet initial or monogram. Folded napkins with similar letters in the center may be laid to receive the dishes in lieu of table-mats. Finger-bowls may be arranged to form groups of prettily contrasted tints. Flowers in the center, or beside the plate of each guest, are prettiest of all. Nothing lends such grace to food as flowers.

A delicate finish should characterize each detail, and a certain amount of ornament. Every dish is susceptible of being made pretty as well as eatable. A bunch of parsley, a circle of sliced lemon, vegetables cut into pretty forms, potato, rice, bread-crumbs, quilled paper, adjuncts neither troublesome nor expensive, may be made to give a look of elegance to simple fare. Above all things, perfect and dainty neatness, best ornament of all, and that cordial home-atmosphere which confers savor even upon a dry crust.—*Scribner's Monthly.*

YELLOW PICKLE—WILL KEEP FOR YEARS.—One pound rice ginger—lay in water over night—in the morning scrape and cut it in thin slices, rub it thoroughly with salt and let it stand in the sun to dry. Take two ounces of long black pepper and prepare in the same way; one pound of garlic cut in thin slices and salted; let it stand three days; then wash it well, salt it again, and let it stand three days longer. Then wash, drain, and put in the sun to dry. Take a quarter of a pound mustard seed, bruised, and two ounces of tumeric; put all these ingredients, when prepared, into a large stone jar with a gallon of good cider vinegar; stir it daily for ten or twelve days; keep it closely tied; into this pickle you may put cabbage, cauliflower, small cucumbers, melons, beans (snaps), and very young ears of corn. The cabbage must be firm, white heads, small, quartered, and laid in salt and water for three days; then boil fresh salt and water and scald the cabbage; press out the water and lay it in the sun to dry. The other fruits and vegetables must be prepared in the same manner. Care must be taken that the ingredients are well dried before they are added to the vinegar. The jar need never be emptied. You can add the fruits and vegetables from year to year as they come in season and supply the vinegar as it is required.

TO BOTTLE GREEN GOOSEBERRIES.—Remove the stems and blows, and allow about a half pound of sugar to a pound of berries. If you wish them whole, you will need a little water. Put a layer of sugar and gooseberries, and so on, and then water nearly to cover them, but not quite. Put the fruit into the bottles by the teaspoonful. Take them from the kettle solid in the cup, but allow some of the boiling juice, or they will chill. Have the bottle full of the berries, and then cover with whatever quantity of the boiling juice is necessary. If you want them made into jam, let them stew until a pulp is formed, and use no water. Ripe gooseberries are better made into a jam; a little less sugar than for the green ones is required.

TO DRY CITRON OR WATERMELON RIND.—After preserving place in the sun and dry. They answer well in puddings and cakes as a substitute for the imported citron.

A Poetic Recipe for Yeast.

A handful small of fragrant hops deposit in a kettle; Then add a pint of Adam's ale, and boil them till they settle; Then if you wish to brew good yeast, lively and sweet, you'd ougter. Take four potatoes, medium-sized, and wash them well with water; Divest them of their jackets next—in common parlance, skin 'em— And faithfully dig out the eyes, there's dirt imbedded in 'em. Then make assurance doubly sure, and banish all pollution, By subsequently giving them another grand ablution; Then boil them—half an hour perhaps; of course your judgment using, Or steam them, if you like it best; the method's of your choosing. But whether boiled or cooked by steam, the process should be rapid; Potatoes moderately cooked are heavy, sogged, vapid. Then mash them thoroughly, each lump with vigor pulverizing, And put them in a vessel which leaves ample room for rising; A cup half filled with sugar add; 'twill sweeten it enough; It needs the same amount of salt; you'll find it quantum Suff. The hops infusion strain in next, a pint, you mind, by measure; Then with two quarts of water warm dilute it at your pleasure. And gently keep it moving, from circumference to centre, Never fail to bid your silver spoon its hidden depth to enter; Then add two brimming cups of yeast, and quickly take occasion The fragrant mixture to subject to brisk manipulation. And when the entire ingredients are mingled well together, Then give the opportunity to rise, according to the weather— In winter set it near the stove, and oft renew the fire, In summer place it further off, the temperature is higher— Then patiently the issue wait, while Time his flight is winging, Its status scanning now and then, and when you hear it singing, And see upon its surface—now here, now there—a bubble, You feel a thousand-fold repaid for all your toil and trouble. Give to the wind all idle fears, all doubts, all scruples banish, And when the bubbles thicken fast, and crowd, and break, and vanish, The yeast is prime, your toil is o'er, success has crowned persistence. And loaves of tender, light, sweet bread are looming in the distance.

Practical Receipts.

Four Potato Puddings.

1. Mix together twelve ounces of boiled mashed potatoes, one ounce suet, one ounce (one-sixteenth of a pint) of milk, and one ounce of cheese. The suet and cheese to be melted or chopped as fine as possible. Add as much hot water as will convert the whole into a tolerably stiff mass; then bake it for a short time in an earthen dish, either in front of the fire or in an oven.
 2. Twelve ounces of mashed potatoes, one ounce of milk, and one ounce of suet, with salt. Mix and bake as before.
 3. Twelve ounces of mashed potatoes, one ounce of suet, one ounce of red herring chopped fine or bruised in a mortar. Mix and bake.
 4. Twelve ounces mashed potatoes, one ounce of suet, and one ounce of hung beef, grated or chopped fine. Mix and bake.
- A FARMER'S SCOTCH DISH.**—Cut up fresh codfish in pieces four inches square; lay them on the bottom of the pan, then a layer of cut potatoes, and so continue alternate layers, cooking enough for the family. An ordinary onion sliced, and a lump of fresh butter, ought to be placed between each layer. Finish with a layer of butter crackers, or toasted stale bread; cover with water, and stew about twenty minutes; season with salt.
- MUFFINS WITHOUT SODA.**—One quart of flour, one quart of sweet milk, four eggs whipped separately, a little salt, three desert-spoonfuls of melted lard or butter; baked in a hot oven.
- TOMATO CATSUP.**—To a peck of tomatoes, boiled soft, and strained through a sieve that will allow a little of the pulp to pass through, add four tablespoonfuls of salt, four of ground pepper, four of ground mustard, two of ground allspice, two of ground cloves, one of Cayenne pepper and one quart of strong vinegar; boil gently several hours; cool and bottle.
- PIMPLE, FRECKLE AND SUNBURN LOTION.**—A correspondent of the *Western Rural* sends the following to that paper: Take one drachm muriate of ammonia, one drachm of borax, two drachms tincture of benzoin, and one pint of rose water, mix. Apply with a fine sponge two or three times a day.
- APPLE WINE.**—Sixty pounds of brown sugar, one pound of sulphate of lime, and put into pure sweet cider from the press—enough to fill a forty-gallon barrel. Leave the bung out forty-eight hours; stop it up, and leave a small vent until fermentation wholly ceases. It should be

kept in a cool place. When it has ceased to ferment, it is ready for use. The longer it stands, the better it is.

The Theory of the Rotation of Crops.

BY DR. PETERS.

The New Chemical Theory.

Liebig's theory has done much for agriculture, but does not explain everything. The chief objection to it is that it leaves out of account the need of organic substances for nourishing plants. Besides the mineral constituents, plants contain carbon, oxygen and hydrogen, the last two the constituents of water. As plants can take these two from water, and as no plant can live without water, we need not consider further these elements. Carbon is derived by the plant partly from the air, partly from the soil. It is to be accepted that the broad-leaf plants extract carbon from the carbonic acid of the air with greater power than do the narrow-leaf stem plants; still experiments with grain in pure quartz sand or water free from carbonic acid show that the absorption of carbon from the ground is by no means absolutely necessary, but that plants can grow even luxuriantly when compelled to take carbon from the air.

The last building material—nitrogen—is likewise absorbed in part from the air, but different plants behave very differently with regard to this element. A customary division of plants is into *enriching* (clover, lucerne, esparcet), *protecting* (pod fruits, stem fruits which are harvested green), *impoverishing* (stem fruits which ripen, beets, potatoes,) and *exhausting* plants (oil-yielding plants). Experience shows that this division is determined principally, but not wholly, by the behavior of the plants to the nitrogen of the soil. Impoverishing plants are those which take large amounts of this substance from the soil; enriching, those which (like clover in its root remains) leave considerable quantities of it in the ground. A clover crop, indeed, holds much more nitrogen than a grain crop, but clover is classed as *enriching* because it takes up through its leaves nitrogen from the air, enough to leave some for the soil, while the cereals take their nitrogen from the ground. Hence the beneficial effects of rotation are to be explained from the different properties of plants with regard to the mineral soil substances, and their behavior towards nitrogen, some demanding more and some less of this last element from the ground.

This is the new chemical theory of rotation. It explains much, but not everything. Should the farmer try by its light to free himself entirely from rotation, by adding proper manures to supply the waste, he would fail in practice. The chemical theory enables him to have more freedom with his crops than before, but agricultural freedom has its limits; and to sow wheat year after year, or stem fruits continually, does not answer in practice.

Other Practical Considerations.

The chemical theory shows why one plant exhausts the soil more than another, why one is a better, another a poorer preparatory crop, and what place each plant should have in a course of rotation. It does not explain, however, all the relations of the case. All ripe-harvested stem fruits are called above *impoverishing*, but every farmer knows that different varieties make different demands on the soil—wheat much more than oats, for example. So with other plants. Rape and beet, although leafy plants, demand a nitrogenous manure. Should rape be classed as *exhaustive* on this account, it would be wrong, for rape is highly prized as a preparatory crop for wheat. We must consider the further physiological peculiarities of plants—the manner in which the roots and leaves spread and grow, the evaporation of water, etc. If barley demands richer soil than oats, this is explainable from the fact that oats, having stronger and more branching roots, can get nourishment from a greater area and depth. Oats, too, keep their leaves longer, and therefore can get more nourishment from the air. Best plants have but few suction-roots, loose their leaves soon, and therefore demand good manuring.

Another point for consideration is the fact that plants get nourishment from different layers (or depths) of the soil. Some take it near the surface, others from the depths. Cereals, although many send down long roots, have most of their roots near the surface, while the clover-root sinks down quite deep before branching. It is plain that a rotation of plants utilizing different layers of soil is advisable.

The proper physical condition of the ground cannot be neglected. Experience shows that without rotation this condition is not obtained,—the ground becomes sometimes too solid, sometimes too loose.

Finally we must consider the enemies of the plants. Each has its own foe, vegetable as well as animal. Certain weeds, microscopical parasitic plants and insects become more powerful the longer one crop is kept growing without change. It is known to be a fact that many of the small vegetable and animal foes of our crops can live only on certain plants. The potato fungus cannot exist on grain, nor that of seed, corn on peas. The insects which are detrimental to grain cannot live if they find only root-plants. For this reason, then, a rotation of crops is necessary.

Recapitulation.

For the utility and necessity of rotation we have then the following reasons:

1. Different plants make different demands of the soil, and that
 - a. quantitatively: one plant requires much potash, another more lime, etc.;

- b. quantitatively with reference to their behavior toward the air: one plant absorbs more, another less nitrogen from the air;
- c. with reference to their kinds of roots, leaves, and powers of absorption: one plant with strong roots requires less, another with weak roots more nourishment in the soil;
- d. with reference to the area of ground whence they draw supplies: one plant lives at the cost of the surface soil, another from the deep ground.

2. It is easier to keep the ground in the proper physical condition, even without fallowing.

3. The natural enemies of the plants are more easily destroyed.—*Lando.*

Hop Circular.

We have received from Miller & Co., No. 10, Davis street, San Francisco, the following in regard to the Hop Circular of California, its acreage, etc:

"The experience following the cultivation of the hop in California has been no exception to that of growers in older countries. Extreme fluctuations in values, following within a period of some five years, is now looked forward to with some degree of certainty. Most of our growers being new beginners, commencing the culture under the stimulant of extreme high prices, lacking in practical experience, were illy prepared to meet the series of low priced years following. The advice and assistance of one or two of the more experienced, enabled many growers to reach the picking season of 1871, when a brighter future opened before them. After a thorough canvass of the State, we are enabled to give the following statistics:

ACREAGE UNDER HOPS IN EACH COUNTY, AND THE PRODUCT FOR THE YEAR 1871, WITH THE INCREASED ACREAGE FOR 1872.

COUNTIES.	Acreage, 1871.	Pounds.	Increased Acreage, 1872.
Sacramento.....	112	99,000	60
Mendocino.....	71	58,150	65
Santa Clara.....	74	46,340	16
Alameda.....	18	12,600	40
Monterey.....	.....	.....	30
Santa Cruz.....	20	17,000	..
Napa.....	14	18,000	37
Butte.....	12	12,000	..
Los Angeles.....	10	13,655	7
Sonoma.....	1	300	12
Lake.....	.....	.....	10
Yolo.....	.....	.....	6
Tulare.....	.....	.....	3
	332	277,053	286
Add acreage in 1871.....			332
Total acreage in 1872.....			618

Some of our brewers not yet fully satisfied with the result from the working of the California hops alone, continue to require a certain percentage of eastern growth for mixing. We note a decreasing requirement for this purpose from year to year, as shown from the imports for the period under review, which were:

1870.	1871.	1872.
Bales.	Bales.	Bales.
1,137.	822.	479.

The high rates ruling in this market the past season checked exports in a great degree, and it is not unlikely that the markets of Australia and Victoria may be closed against our products in future, unless at low figures. Tasmania in the former, is now producing in quantities, and of a quality to interfere with imports from England, and the latter has spared to us the past season liberal samples of home growth of superior quality.

The extent of the hop interest, capital employed and labor required, may be inferred from the annexed items from the most authentic sources: Acreage under hops in Great Britain in 1870, 60,594. In one county in England (Kent) there was, in 1870, 37,490 acres. Estimated production of the United States in 1871, 9,000,000 pounds.

The President of the chief association of brewers in the United States, in his address, lately delivered before their twelfth annual convention, says: "The trade in the United States yearly consumes twenty-three million bushels of barley, and over eighteen million pounds of hops; and the revenue derived from this industry in 1871 amounted to seven million eight hundred thousand dollars." Estimated yearly consumption in this State, 450,000 pounds.

The prospect at this time in most sections of California is in favor of a fair average yield for this year. We ask the attention of the hop growers to the following suggestions: After the hop is properly matured, the whole crop should be picked as near as possible at the same time. When the difference in color is marked, between early and late picking, cure and bale separate, mixing is injurious, uniformity of color being a chief requisite. Pick each hop separately from the stem. No leaves, stems or other foreign matter, should be left in the hops.

Too much care cannot be given to the curing—the season's success depends upon this—many choice prospects have been blighted at this stage, either in over-drying (scorching) or not drying sufficiently and cooling before baling. Hops heated after baling are worthless. In this climate the atmosphere in the morning would be preferable for baling, the hop being then more pliable. It is desirable that bales should be of uniform weight of about 200 pounds. Use stencil plates and mark name or initial of grower on side near top, name of consignee may be placed on the end. For marking, use turpentine and lampblack—oils are objectionable.

(Continued from page 101.)

which is about ten years old, is heavily laden with grapes, and it is estimated that the weight of grapes on this single vine is about fifteen hundred pounds, of the old Mission variety.

SANTA CLARA.

Advocate, Aug. 10: It is safe to say that there is no town in the State possessing advantages of soil and climate that Gilroy does, but what raises enough and more than enough of vegetables to supply its home market. Yet, notwithstanding that the soil around Gilroy is equal to any in California for gardening, we do not raise a quarter of the vegetables that are used in this city. This is certainly a great mistake. There is no branch of husbandry that is more profitable. Instead of having our vegetables shipped from abroad to supply our market, they should be raised at home. It would give employment to our own people, who could afford to sell cheaper than those who ship from abroad, for the reason that there are always three profits made before they reach the consumer. The vegetables would be fresher, hence much better. Besides, we would keep the money at home to benefit and enrich our own people, instead of sending it abroad.

SONOMA.

Democrat, Aug. 10: DRILLING GRAIN.—We have received the following interesting notes from a farmer near this place who has for the past two years drilled his grain instead of sowing it broadcast, as is the usual custom. These notes are the result of actual practice, for two years and are more valuable than pages of theoretical speculation. Memoranda for 1871—It took one-fifth less seed than if sown broadcast. It was all put in the same depth. It yielded five bushels more to the acre than the product of similar land sown broadcast. In 1872, this season, the same result was obtained. It grew more vigorously during the protracted north wind in May than broadcast sowing. It was not at all affected by blight. The drill sows five feet wide—a man can drill from seven to ten acres per day. The ground should be free from trash on top and harrowed once or twice—if not mellow and friable. The harrowing should be done before the drill is put on—it works equally well on hill land as on level and is a light drift for two horses. Birds do not pull up or injure drilled grain. The growth is uniform and beautiful and the crop is fortified against the evil effect of drouth.

HOP CULTURE.—We recently met Mr. L. F. Loug, one of the earliest cultivators of hops in this State, and learned from him some interesting particulars of the business. His experience now extends over a term of six years. If his estimates are correct the business must be profitable, and well worth the attention of agriculturists. Any good corn land will produce hops. The roots are planted once in fifteen years. They produce half a crop the first year—after that a full crop every year. The cost of harvesting is five cents per pound, bailing and freight, from Mr. Long's rancho fifteen miles north of Cloverdale, eight cents per pound. The total cost of crop delivered in San Francisco, fourteen cents per pound. His average yield for seven years has been 1,500 pounds to the acre, and average price obtained 30 cents per pound, which leaves a handsome margin for profit. The crop matures and harvest commences about the 20th of August. During this time he has had one short crop, and one season of extremelow prices. The native hops are now preferred by brewers—for some time there was a prejudice against them. A circular recently published gives some interesting particulars of the hop product in this State. In 1870 there were 441 acres in cultivation, producing 557,000 pounds; in 1871 there were 332 acres, producing 227,000 pounds, a marked decrease. This year there is reported 618 acres, and the yield will approximate 800,000 pounds. In 1870 Sonoma was credited with four acres, in 1871 with one acre, and this year with twelve. Our imports of this article have steadily decreased, while our exports have increased. This year we should have a large surplus for export.

Chronicle, Aug. 10: SILK WORMS.—The silk worms of Messrs. Hallin & Amerup, west of Napa City, are feeding finely, one lot having got through its fourth moulting. Between 75,000 and 80,000 worms are now feeding. The hot wether of the past week has not been injurious to these sensitive creatures, although the temperature of the feeding room has to be closely watched. The variety of worms these sericulturists are feeding is known as the Montean bean Bivoltines.

THE S. F. CHRONICLE.—This paper is to be enlarged, printed upon new and improved type, with a "Hoe rotary, four-cylinder, double quarto," Press, capable of striking off 20,000 per hour. Their immense increase of patronage requires the improvements.

R. G. HOUSTON, of Antioch, has one hundred-acres in canary seed, which will yield a thousand pounds to the acre. Our rainless summers render California particularly adapted to the culture of this seed.

I. A. H., of Colfax, informs us of several errors that crept into his article in our issue of Aug. 10th. No fault of his, however.

ELECTRIC SAW AND CRAB WRENCH.—The advertisement of these articles by Linforth, Kellogg & Co., is crowded over to our next issue.

CITY MARKET REPORT.**DOMESTIC PRODUCE AT WHOLESALE.**

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Aug. 15
FLOUR.—The interior and local demand is reported good, with a fair inquiry for export. We quote prices as follows:
Superfine, \$4.25@4.50; extra, in sacks, of 196 lbs. \$5.62@5.75; Oregon brands, \$5.00 @5.62½ in sacks of 196 lbs.

WHEAT.—The market has been active at advanced rates since our last review. Receipts for the week aggregate 262,000 cents. Sales aggregate 150,000 sacks fair to choice, at \$1.55 @1.62½. The range for shipping grades is 155@157½, and choice milling, \$160 @165 per 100 lbs.

The latest Liverpool market quotations come through at 12s. 3d. per cwt.
BARLEY.—Market dull. Sales embrace 10-000 sacks, at \$1.00@1.15 for new. The range at close is, new bay 1.05@1.10; old brewing \$2.00@2.25.

OATS.—Market is steady. New are quotable at \$1.75@2.00; no old in first hands.
CORN.—Yellow is quotable at \$1.70@1.75, and White at \$1.80@1.85 per 100 lbs.

CORNMEAL.—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$1.75 per 100 lbs.

RYE.—Is quiet at 1.80 per 100 lbs.

STRAW.—Quotable at \$6@7.25 per ton for cargo lots.

BRAN.—Is selling at \$16 per ton from the mill.

MIDDINGS.—For feed, are \$25.00 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been pretty free during the week. Market is overstocked with common grades which are very dull. Quotable at close at \$8@16.00 per ton.

HONEY.—In the comb is selling at 10@23; do. strained, 12@15c. per lb.

POTATOES.—There has been a pretty fair demand this week, and very free supplies. Sales of Red at \$1.50@1.70 per 100 lbs.; Carolina, \$1.50 per 100 lbs.

WOOL.—No sales have been made this week. The range of prices is nominally 25 @35c. for clean, and 20@25c. for burry, 40 for extra choice.

TALLOW.—Good quality of Cal. 8@8½c.

SEEDS.—Flax 3c.; Canary, 4½@5½c. Alfalfa, 16@20; mustard, 4@5c. per lb.

PROVISIONS.—California Bacon 12½@14c per lb.; Oregon, 13½@14c. Eastern do. 10@12 for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 13@14; Eastern do. 16@18c; California Smoked Beef, 13½@14c. per lb.

BEANS.—The following are the jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25; large \$3.75; Bayo, 5.25@5.50.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 6c Pecan, 25c per lb.; Hickory, 12c; Brazil, 15c.; Chili Walnuts, 15c.; French Almonds, 25 @30c.; Princess Almonds, 35@40c.; Cocoanuts, \$7.00 per 100.

FRESH MEAT.—We quote slaughterer's rate as follows:—

BEEF.—American, 1st quality, 7@8 per lb. do. 2d quality 6@7 per lb.; do. 3d do. 3@5c.

VEAL.—Quotable at 8@10c.

MUTTON.—Quiet at 6c. per lb.

LAMB.—8@9c.

PORK.—Undressed grain-fed is quotable at 5½@6c. dressed, grain-fed, 8@9c. per lb.

POULTRY.—Live Turkeys, 25c. per lb.; Roosters, \$5.00@7.50 per dozen; Spring Chickens, \$3.75@4.00; Ducks, tame, \$7.00@8.00 per doz.; Geese, \$12@15 per dozen.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 25@30c., with a few choice lots at 32½; New firkin is quotable at 20@27½c., pickled, old 18@20c.; Eastern firkin 18@27½c.

CHEESE.—New California, 11@13½c.; Eastern is jobbing at 12½@13c. per lb.

Eggs.—California fresh, are 42½@45c., Eastern, 30c.; Oregon 35@37½c.

LARD.—California 12½@14; Oregon, none in market. Eastern in cases 14@14½c.; do in tcs. 11½@12c.; in kegs, 12@13c. per lb.

FRUIT MARKET.

Tahiti Oranges, M	— @ 35	Plums, Common	50 @ 100
Limes, M	10 @	Figs	8 @ 10
Autumn Lemons, M	— @	Crab Apples, bz	1.25 @ 1.50
Seville do, bz	— @ 18	Strawberry chut.	— @ 50
Bananas, h hch2 00	@ 40	Raspberries, bz	5 @ 6
Pineapples, doz	@ 100	Blackberries, bz	12½ @ 15
Apples, Eat, bz	1.50 @ 2.00	Cantaloupes, doz	@ 100
Apples, Cook, bz	1.75 @ 2.00	Watermelon, doz	@ 100
Pears, Bartlett, doz	@ 25	Grapes, Mission	2 @
Pears, Bloodgood	— @ 50	Cassias, all	2½ @ 3½
Pears, Cooking	— @ 100	Bk Malvoisie	4 @ 5
Peaches, Choice, 1	25 @ 30	Bose of Peru	4 @ 6
Peaches, Comm	75 @ 100	Bk Hamburg	4 @ 6
Apricots, doz	6 @ 7	Black Prince	4 @ 6
Nectarines, hz	1.75 @ 2.00	Muscad of Alr	4 @ 7
German Prunes	4 @ 6	Flame Tokay	12½ @ 15
Plum, Choice	1.50 @ 2.00		

DRIED FRUIT.

Apples, doz	9½ @ 10c	Pitted, doz	20 @ 25
Pears, doz	9 @ 10	Raisins, doz	5 @ 15
Peaches, doz	10 @ 11	Black Figs, doz	6 @ 8
Apricots, doz	5 @ 10	White, doz	15 @ 20
Plums, doz	5 @ 10		

VEGETABLES.

Cabbage, doz	2 @ 2½	Cucumbers, doz	50 @ 75
Garlic, doz	2 @ 2½	Summer Squash, doz	50 @ 75
Rhubarb, doz	2 @ 2½	Asparagus, doz	50 @ 75
Green Peas, doz	2 @ 2½	Tomatoes, doz	50 @ 75
Sweet Peas, doz	2 @ 2½	String Beans, doz	1½ @ 2
Green Corn, doz	10 @ 15	Egg Plant, doz	2 @ 2½
Marrowfat Squash	— @	Peppers, doz	6 @ 8
per ton	— @	Okra, doz	6 @ 8

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING.—There has been an advance in wheat sacks since our last report. Prices are as follows: Hand-sewed Burlap sacks 22x36, are 17@18c. Flour sacks 9@9½c. for qrs. and 13½@14½c. for hfs. Standard Gunnies are jobbing at 21@22c.; Wool 70@7½c. Barley sacks 17½@19. Hessians, 40-inch goods, 11@12c. per yard.

BUILDING AND FENCING MATERIALS.—The demand for lumber in the interior is light, and the export trade is light also. The retail price advances to-day about \$2.50 per M. Dealers pay for cargoes of Oregon as follows: Rough \$16@17; do surfaced at \$27@28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @2.75; Shingles \$2.50@2.75. Sugar Pine \$35 @40; Cedar \$27½@37½. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The new scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—	
Rough, per M	\$25 00
Flooring and Stepping, per M	37 50
Flooring, narrow, per M	40 00
Flooring, second quality, per M	30 00
Laths, per M	3 50
Furring, per lineal foot	1c
Redwood—	
Rough, per M	25 00
Rough refuse, per M	20 00
Rough Pickets, per M	18 00
Rough Pickets, pointed, per M	20 00
Fancy Pickets, per M	30 00
Siding, per M	7 50
Tongued and Grooved, surfaced, per M	40 00
Do do refuse per M	27 50
Half-inch surfaced, per M	40 00
Rustic per M	42 50
Battens, per lineal foot	1c
Shingles per M	3 50
Sugar Pine is jobbing at \$50@60 for clear and \$35@45 for second quality.	

COFFEE.—Costa Rica 20½c; Guatemala 18c. Java 23c; Manilla, 18½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 12½.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Fish Cod in bundles at 4½c@5½c. Salmon in bbls. \$5.00@6.00, hf do. \$3.50@4.50; Case Salmon, \$2.50 for 2½ lb. cans, \$2.25 for 2-lb. cans, and \$1.75 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$7.00@9.00; extra, \$9.50@10.00; in kits No. 1 \$1.75@2.00; do No. 2, \$1.50@1.62½.

NAILS.—Quotable at \$6 25@9.00 for assorted sizes.

PAPER.—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 per ream.

PAINTS.—Standard White Lead 12½c; Whitening, 2c.; Chalk 2½c.; Paris White 3c.; Ochre, 3½c.; Venetian Red, 3c.; Red lead, 11½c.; Litharge, 11c. per lb.

RICE.—Sales of China No. 1 at 6½@7½c. and No. 2 at 6½@6¾c per lb; Siam, quotable at 5½@6½c in mats; Hawaiian, 10½c per lb.

SUGAR.—We quote Cal. Cube at 13½c; Circle A Crushed, 13c, and Granulated 12½c; Golden C. 11c; Extra Golden C. 11½c.; Hawaiian 8@11c. as extremes per lb.

SYRUP.—Prices may be given as follows: 57½c in bbls, 60 in hf bbls, and 65c in kegs.

SALT.—California Bay sells at \$6@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP.—The prices for local brands are 5@10c, and Castile, 12@12½c per lb.

TEA.—We quote as follows for bulk descriptions: Amoy—Common to fair, 30@45c.; superior to fine, 55@65c.; extra fine, 75@85c. Foochoos—Common to fair, 25@45c.; superior to fine, 50@60c.; extra fine, 75c. Souchong and Congou—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Japan—Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55@75c. per lb.

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Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plants. 4 Catalogues, 20c. F. K. PHENIX, Bloomington Nursery, Ill.

274-16t

San Francisco Retail Market Rates.

THURSDAY NOON, August 15, 1872.

MISCELLANEOUS.			
Butter, Cal fr. lb	30 @ 40	Flour, sds, q. r...	9½ @ 10½
do Oregon, lb	25 @ 30	do Hllr...	15 @ 17½
Honey, lb	20 @ 25	Potato City Bags	20 @ 21
Cheese, lb	20 @ 25	Second-hand do	12 @ 16
Eggs, per doz	45 @ 50	Deer Skins, lb	15 @ 22
Lard, lb	18 @ 20	Sheep skins, w/ on	50 @ 75
Sugar, cr. 7½	1.10 @ 1.15	Sheep skins, plain	12½ @ 25
Brown do, lb	12 @ 12½	Goat skins, each	25 @ 50
Beet, do	12 @ 12½	Dry Cal. Hides	18½ @ 19
Sugar, Map, lb	30 @ 35	Salted do	9½ @
Plums, dried, lb	15 @ 30	Dry Mex. Hides	17½ @
Peaches, dried, lb	20 @ 25	Salted do	9½ @
Wool Sacks, new	71½ @ 75	Podish, dry, lb	10 @ 12½
Second-hand do	52½ @ 55	Lard Cal. Wood	6 @ 10
Wheat-ske, 22x36	15½ @	Tallow	6½ @ 8

PRODUCE, ETC.			
Flour, ex. bbl. 60	@ 65	Barley, cwt.	1.50 @ 1.65
Superfine, do. 60	@ 65	Beans, cwt.	4.00 @ 5.00
Corn Meal, 100 lb	@ 60	Shr Lima Beans	8 @
Wheat, per 100 lbs	@ 2.60	Hay, per ton	17 @ 25
Oats, per 100 lbs	@ 1.60	Potatoes, cwt.	75c @ 1.00

FRUITS, VEGETABLES, ETC.			
Apples, doz	10 @ 12½	Celery, doz	75 @
Pine Apples, doz	5 @ 10	Cucumbers, doz	10 @ 15
Bananas, doz	50 @ 1.00	Tomatoes, doz	4 @
Cantaloupes	10 @ 37½	Cress, doz bun	20 @ 25
Watermelons	25 @ 50	Dried Herbs, b'h	25 @ 50
Cal. Walnuts	20 @	Garlic, doz	5 @
Cranberries, doz	@ 100	Green Peas, doz	4 @ 5
Strawberries, doz	12 @ 15	Green Corn, doz	15 @ 20
Raspberries, doz	30 @	Lettuce, doz	12 @ 25
Cranberries, O	@ 100	Mushrooms, doz	@ 20
Cherries, doz	@	Morserdich, doz	50 @
Oranges, 1000	@ 50	Pumpkins, doz	3 @ 4
Lemons, 1000	@ 50	Parasins, thchcs	20 @
Limes, per 100	@ 2.00	Parsley, doz	25 @
Figs, fresh, doz	12½ @ 20	Pickles, gal.	50 @ 80
Asparagus, wh.	@ 100	Rhubarb, doz	5 @ 10
Artichokes, doz	50 @	Radishes, b' buns	5 @ 25
Brussels sprigs	@	Summer Squash	3 @
Beets, doz	@ 25	Marrowfat, doz	@ 2
Potatoes, New	@ 25	Hubbard, doz	@ 4
Potatoes, sweet	@ 25	Dry Lima sh.	5 @ 8
Broccoli, doz	1.50 @ 2.00	Spinage, doz	25 @ 50
Cauliflower, doz	1.00 @ 1.50	Salad, doz	12 @ 25
Cabbage, doz	1.00 @ 1.50	Turkeys, doz	15 @ 20
Carrots, doz	15 @ 25		

POULTRY, GAME.			FISH, MEATS, ETC.		
Chickens, apies	50	@ 25	Choice D'field	—	@ 25
Turkeys, apies	—	@ 30	Whittaker's . .	—	@ 25
Ducks, wild, p	—	@ 10	Johnson's Or.	—	@ 25
Tame do, doz. . .	10	@ 10	Flounder, lb	15	@ 18
Teal, doz.	25	@ 50	Salmon, lb	8	@ 10
Geese, wild, pair	—	@ 20	Smoked, new	12	@ 15
Tame, pair . . .	25	@ 20	Pickled, lb	6	@ —
Hens, each . . .	75	@ 25	Rock Cod, lb	10	@ —
Snipe, doz. . . .	—	@ 20	Perch, water, lb	—	@ 12
English, do . . .	—	@ 20	Fresh water, lb	—	@ 15
Quails, doz . . .	—	@ 20	Lake Bk. Trout	—	@ 25
Pigeons, dom, doz	—	@ 50	Smelts, large	8	@ —
Wild, doz	—	@ 20	Small do	—	@ 12
Hares, each . . .	—	@ 50	Silver Smelts . .	15	@ —
Rabbits, tame . .	25	@ 75	Soles, lb	30	@ —
Wild, do, doz. l	15	@ 20	Illerring, fresh .	—	@ 10
Beef, tend, lb . .	—	@ 25	Sm'kd, per 100 .	—	@ 100
Corned, lb	—	@ 10	Tomcod, lb . . .	25	@ —
Smoked, lb . . .	15	@ 15	Terrapin, doz . .	60	@ 00
Pork, rib, etc, lb	—	@ 15	Mackerel, p'k, ea	—	@ —
Shops, doz . . .	15	@ —	Fresh, do	—	@ —
Veal, lb	15	@ —	Sea Bass, lb . . .	—	@ —
Outlet, doz . . .	—	@ 20	Halibut, lb . . .	—	@ 50
Mutton chops . .	12	@ 15	Sturgeon, lb . . .	4	@ 5
Leg, doz	15	@ 18	Oysters, lb 100. l	10	@ 25
Lamb, lb	—	@ 18	Cheep, doz. l . .	50	@ 20
Cones, lb	—	@ 18	Turbot, lb	10	@ 25
Tongues, pig, ea	18	@ 20	Crabs, lb	1	@ —
Bacon, Cal, lb . .	18	@ 20	Soft Shell	—	@ 50
Orekon, do . . .	18	@ 20	Shrimps	10	@ —
Hams, Cal, lb . .	18	@ 20	Prawns	40	@ 50
Carrots, doz . . .	10	@ 20	Crabs, lb	8	@ —
* Parlb. l			1 Per gallon.		

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OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

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The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

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PRICES:

Thimble Skein, 3 inch, \$100; 3 1/2 inch, \$105; 3 3/4 inch, \$110; 3 7/8 inch, \$115; 4 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yoke and stay chains.

Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.

We invite the attention of buyers to the superior workmanship and finish of the justly celebrated Wagons. They are known throughout the West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective, it will be replaced without charge." We claim by actual test a SAVING OF FIFTEEN PER CENT. in draft over any other Wagon offered for sale. This ease of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves.

Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the BEST Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturers of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.

We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Rack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the SPRING SEAT 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running-gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY REASONED HICKORY.

If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

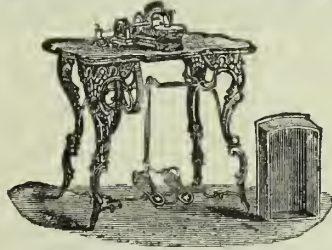
TREADWELL & CO.,

San Francisco,

General Agents for the Pacific States.

THE

FLORENCE



Will sew everything needed in a family, from the heaviest to the lightest fabric.

IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,
Than any other machine.

If there is a Florence Sewing Machine within one thousand miles of San Francisco not working well and giving entire satisfaction, if I am informed of it, it will be attended to without expense of any kind to the owner.

SAMUEL HILL, Agent,

19 New Montgomery Street,
Grand Hotel Building, San Francisco.

Send for Circulars and samples of the work. Active Agents wanted in every place.

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO.,
Manufacturers of and Dealers in
Monuments, Headstones, Tombs,
MANTEL PIECES, ETC.,
421 Pine street, between Montgomery and
Kearny, SAN FRANCISCO.
21v2-1y

English
and
American

Hardware!

A Large, Fresh Stock just received. The old friends of the house especially, as well as our later patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promptly.

TREADWELL & CO.,
San Francisco.

STATE FAIR FOR 1872,

AT SACRAMENTO,

COMMENCING

On Thursday - - - the 19th,

AND CLOSING

On Friday, - - the 27th of September.

\$40,000

To be Distributed in Cash Premiums!

Exhibition to be divided into seven departments, and the SOCIETY'S GOLD MEDAL awarded to the most meritorious exhibition in each department.

THE LARGEST STOCK SHOW

Ever had on the Pacific Coast.

THE MOST ATTRACTIVE SPEED PROGRAMME

Ever offered in the Union.

The First Annual Exhibition of the California Wine Growers' Association to be held at the same time and place.

A GRAND PLOWING MATCH

To come off on the grounds.

A GRAND REGATTA ON THE RIVER,

In which eight or ten boats will participate.

A public sale of Thoroughbred Stock at the Park each day of the Fair.

The Central Pacific Company's railroads and steamers will carry all articles to and from the Fair FREE OF CHARGE.

Wells, Fargo & Co.'s Express will deliver all packages FREE not weighing over 20 pounds.

Applications for Stalls at the Park and space at the Pavilion should be made to ROBERT BECK, Recording Secretary, at once.

Memberships, \$5. Single Admission, 50 cents.

C. F. REED, President.

ROBERT BECK, Secretary.

6v4 td

TANK MAKING.

The undersigned having adopted TANK MAKING as their specialty, are now prepared to manufacture

Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood

FOR THE SPECIAL PURPOSE OF MAKING

LARGE WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.

1,000 to 2,000 gallons, bound with 5 hoops 1 1/2 x 1/2 and 1 hoop 1 1/2 x 3-16.
2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2 hoop 2 x 3-16.
4,500 to 7,500 gallons, bound with 5 hoops 2 1/2 x 1/2 and 2 hoop 2 1/2 x 3-16.
7,500 to 15,000 gallons, 6 hoops 2 1/2 x 1/2 and 2 hoops 2 1/2 x 3-16.
15,000 to 20,000 gallons, bound with 8 hoops 3x1/2 and 3 hoops 3x3-16.

PRICE, - - From 1 1/4 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2 1/2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.

REDWOOD CASKS (split lumber,) with oak middle piece and gage, from 7 to 9 c. per gallon.

OAK CASKS (full stock,) from 12 1/2 to 15 c. per gallon.

Send for Price List.

For further particulars address.

M. FULDA & SONS,

Cor. Commercial and Drum Streets, S. F.

5v4-6t

Agents Wanted

For the liveliest book on the West ever written,

"BUFFALO LAND!"

By W. E. WEBB, the noted Pioneer and Humorist. The wealth and wildness, mysteries and marvels of the mighty Plains fully and truthfully described. Overflowing with wit and humor. The Appendix a Complete Guide for Sportsmen and Emigrants. PROFUSELY AND SPLENDIDLY ILLUSTRATED. Immensely Popular, and selling beyond precedent. Send for illustrated circular, terms, etc., at once, to the Publishers,

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LIST OF PREMIUMS

ON WINE, BRANDY, GRAPES, ETC.,

As agreed upon by the Board of Directors of the

California Vine-Growers and Wine and Brandy Association.

Brandy.

Best grape brandy, vintage 1871..... \$25
Best grape brandy, vintage 1870..... 25
Best grape brandy, vintage 1869..... 25
Best grape brandy, vintage 1868..... 25
Best grape brandy, vintage 1867 or older..... Diploma.

Dry Wines.

Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Sweet Wines.

Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Special Wines.

Best California port wine, vintage 1871..... \$25
Best California port wine, vintage 1870..... 25
Best Cal. port wine, vintage 1869 or older..... Diploma.
Best California sherry wine, vintage 1871..... 25
Best California sherry wine, vintage 1870..... 25
Best Cal. sherry wine, vintage 1869, or older..... Diploma.
Best California sparkling wine, vintage 1871..... 25
Best California sparkling wine, vintage 1870..... 25
Best California sparkling wine, vintage 1869 or older..... Diploma.
Best California Angelica wine, vintage 1871..... 25
Best California Angelica wine, vintage 1870..... 25
Best California Angelica wine, vintage 1869 or older..... Diploma.

Miscellaneous.

Best samples of grape syrup, not less than one gallon..... \$20
Best sample of grape sugar, not less than five pounds..... 20
Best twenty-five pounds of raisins..... 50
Best still..... 50
Best grape crusher and separator..... 50
Best and cheapest tank, cask or butt for wine or brandy for storage..... 50

Grapes.

Best twelve varieties of the table grapes, not less than three bunches each..... \$25
Best six varieties of table grapes, not less than three bunches each..... 20
Best three varieties of table grapes, not less than three bunches each..... 15
Best two varieties of table grapes, not less than three bunches each..... 10
Best one variety of table grapes, not less than three bunches each..... 20
Best twelve varieties of wine grapes, not less than three bunches each..... 25
Best six varieties of wine grapes, not less than three bunches each..... 20
Best three varieties of wine grapes, not less than three bunches each..... 15
Best two varieties of wine grapes, not less than three bunches each..... 10
Best one variety of wine grapes, not less than three bunches each..... 20
Best variety of raisin grapes..... 10
Best and greatest variety of grapes, not less than three bunches each..... 60
Second best and greatest variety of grapes, not less than three bunches each..... 40

The above list of premiums, together with the Rules and Regulations which have been adopted by the Association, will be published in a pamphlet form for free circulation on application to the Secretary, I. N. Hoag.

"Clear as Crystal."



PEBBLES ARE MADE from Rock Crystal cut in slices and ground convex, concave or periscopic, for Spectacles. In Europe and in the Eastern States they are superceding glass.

Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.

They are COOLER to the Eyes—a very important gain. They are much harder than glass, and DO NOT SCRATCH.

The best quality of Crystal is found in Scotland and the Brazils, and is manufactured into lenses by the best workmen in England and France, for

Thomas Houseworth & Co.,

OPTICIANS,

No. 9 Montgomery street, Lick House,

Where they can be obtained, already fitted, in frames, or may be fitted to order.

Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses. Illustrated Circular for style of frames sent to any address free.

✓ Pebbles sold as such by us, are Warranted.
15v3awbp3m

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On hand and made to order at Lowest Prices by the

PACIFIC FILE WORKS,

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New FILES on hand. Old FILES Re-Cut.

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DEWEY & CO., American and Foreign Patent Agents, Publishers of the Mining and Scientific Press, S. F.

PATENTS obtained promptly; Caveats filed expeditiously; Patent reissues taken out; Assignments made and recorded in legal form; Copies of Patents and Assignments procured; Examinations of Patents made here and at Washington; Examinations made of Assignments recorded in Washington; Examinations ordered and reported by Telegraph; Rejected cases taken up and Patents obtained; Interferences Prosecuted; Opinions rendered regarding the validity of Patents and Assignments; every legitimate branch of Patent Agency Business promptly and thoroughly conducted.

Our intimate knowledge of the various inventions of this coast, and long practice in patent business, enable us to abundantly satisfy our patrons; and our success and business are constantly increasing.

The shrewdest and most experienced Inventors are found among our most steadfast friends and patrons, who fully appreciate our advantages in bringing valuable inventions to the notice of the public through the columns of our widely circulated, first-class journals—thereby facilitating their introduction, sale and popularity.

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In addition to American Patents, we secure, with the assistance of co-operative agents, claims in all foreign countries which grant Patents, including Great Britain, France, Belgium, Prussia, Austria, Victoria, Peru, Russia, Spain, British India, Saxony, British Columbia, Canada, Norway, Sweden, Mexico, Victoria, Brazil, Bavaria, Holland, Denmark, Italy, Portugal, Cuba, Roman States, Wurtemberg, New Zealand, New South Wales, Queensland, Tasmania, Brazil, New Grenada, Chile, Argentine Republic, AND EVERY COUNTRY IN THE WORLD where Patents are obtainable.

No models are required in European countries, but the drawings and specifications should be prepared with thoroughness, by able persons who are familiar with the requirements and changes of foreign patent laws—agents who are reliable and permanently established.

Our schedule prices for obtaining foreign patents, in all cases, will always be as low, and in some instances lower, than those of any other responsible agency.

We can and do get foreign patents for inventors in the Pacific States from two to six months (according to the location of the country) sooner than any other agents.

Home Counsel.

Our long experience in obtaining patents for inventors on this Coast has familiarized us with the character of most of the inventions already patented; hence we are frequently able to save our patrons the cost of a fruitless application by pointing them to the same thing already covered by a patent. We are always free to advise applicants of any knowledge we have of previous applications which will interfere with their obtaining a patent.

We invite the acquaintance of all parties connected with inventions and patent right business, believing that the mutual conference of legitimate business and professional men is mutual gain. Parties in doubt in regard to their rights as assignees of patents, or purchasers of patented articles, can often receive advice of importance to them from a short call at our office.

Remittances of money, made by individual inventors to the Government, sometimes miscarry, and it has repeatedly happened that applicants have not only lost their money, but their inventions also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency. The principal portion of the patent business of this coast has been done, and is still being done, through our agency. We are familiar with, and have full records, of all former cases, and can more directly judge of the value and patentability of inventions discovered here than any other agents.

Situated so remote from the seat of government, delays are even more dangerous to the inventors of the Pacific Coast than to applicants in the Eastern States. Valuable patents may be lost by the extra time consumed in transmitting specifications from Eastern agencies back to this coast for the signature of the inventor.

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We take great pains to preserve secrecy in all confidential matters, and applicants for patents can rest assured that their communications and business transactions will be held strictly confidential by us. Circulars free.

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We have superior artists in our own office, and all facilities for producing fine and satisfactory illustrations of inventions and machinery, for newspaper, book, circular and other printed illustrations, and are always ready to assist patrons in bringing their valuable discoveries into practical and profitable use.

DEWEY & CO.,
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Important to Wool Growers.



PURE BLOODED FRENCH MERINO RAMS FOR SALE BY ROBERT BLACOW, Of Centerville, Alameda County, Cal.

These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock.
1872-6m

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IMPORTERS AND DEALERS IN

Cotswold Sheep and Angora Goats.

A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

We are expecting a large lot of Goats from the East.

Address LANDRUM & RODGERS,
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THOS. BUTTERFIELD & SON,

Breeders and Importers of the

Cotswold, Lincoln, Leicester,

Texel and South Down

SHEEP.

Also, THE ANGORA GOAT.

Now offer for sale the Pure Bred and High Grades. We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

THOS. BUTTERFIELD & SON,
374-10t Hollister, Monterey County, Cal.

FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed.

Seventy-five head of the Silesian Sheep have arrived and are for sale by
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ROBERT BECK.

WATT & McLENNAN, WOOL COMMISSION MERCHANTS,

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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies.
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THE OLD Maple Leaf Nursery.

Has constant varieties of ORNAMENTAL, GREEN and SHRUBS; also, a large assortment of Choice perennials, Green House plants, and Flower Seeds of all kinds, are for sale by
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H. K. CUMMINGS. 1858. J. M. MAXWELL. 1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer.
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GEORGE HUGHES,
FRUIT, PRODUCE,
And General Commission Merchant,
313 and 315 Washington street,
Between Front and Battery.....SAN FRANCISCO.

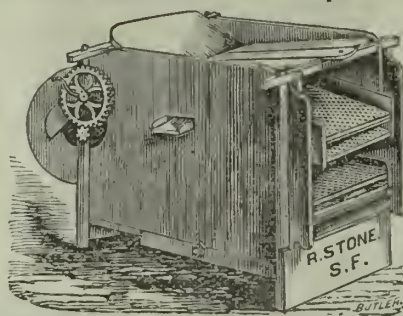
HOUSE ESTABLISHED IN 1850.
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SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED ORAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

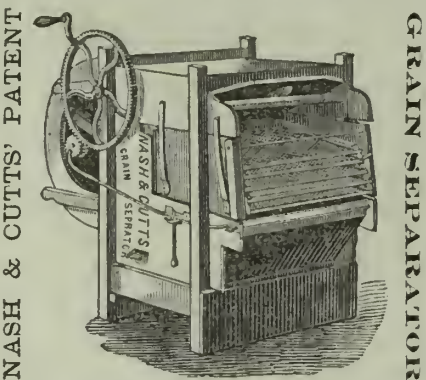
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THE PATENT Novelty Mill and Grain Separator



Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to R. STONE,
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Three sizes, warranted to clean from 60 to 200 bushels per hour, according to size. Prices, \$40, \$50 and \$75. First Premiums at California State Fair in 1870 and 1871. Warranted to separate Mustard Seed, Cheat, Barley and Oats, from Wheat. Cleans the Morning Glory Seed from Alfalfa.
Circulars mailed on application. Address

NASH, MILLER & CO.,
Sole Proprietors and Manufacturers, Sacramento, Cal.
N. B.—All the Nash & Cutts Steam Separators are fully warranted.
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Pacific Saw Manufacturing Co.,

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REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted.
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Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest Improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine. Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address S. WYNKOOP & CO. 2054, Ridge Avenue, or P. O. Box 2726, Philadelphia, Pa.
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SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (alike on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

E. W. HAINES, General Agent,

17 New Montgomery street, Grand Hotel Building,
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AVERILL'S

CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.
Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list.
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EVERY VARIETY OF

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EXECUTED IN THE

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AT REASONABLE PRICES

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Executed correctly and with dispatch.

HOME, SWEET HOME.



'Mid pleasures and palaces,

"Live and Let Live,"

Having recently added a large assortment of new and elegant modern Types, together with one of R. Hoe's STEAM CYLINDER JOB PRESSES, we are prepared to execute all kinds of Fine Printing equal to the best work done either here or in the East, and at prices as low as in Chicago—or anywhere else.

Catalogues for Nurseries neatly printed. We have a great variety of wood engravings especially suited for this work. Orders solicited.

Address:

SPAULDING & BARTO,
(P. O. Box 582.) 414 Clay Street, San Francisco.

LONGSHORE'S COMBINATION TOOL.



This device is just what its name indicates. As a KITCHEN TOOL it is indispensable. It will fit and lift with perfect safety, any Stove Lid, Frying Pan, Pie Pan, Pot, Kettle, or any other vessel or dish used about a stove. It is a complete tool for stretching carpets, driving tacks, pulling tacks, &c., &c. It answers the double purpose of hammer and pincers, and is also a good Nut Cracker. It is made of the best malleable iron, and the Hammer, Pincers and tack puller are all hardened so as to stand the roughest usage. An Agent is wanted in every town on the Pacific Coast to sell this valuable little implement. Retail price fifty cents. Special inducements to agents.

WIESTER & CO.,
17 New Montgomery st. (under Grand Hotel), S. F.

THE ONLY RELIABLE COVERING FOR THE FOOT.

Good Cable Screw Wire BOOTS AND SHOES.

THE CALIFORNIA Safety Gas Lamp.

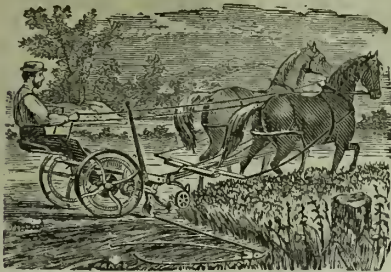
This New Gas Lamp takes the place of the Candle, the Coal Oil Lamp and Coal Gas, and costs only One-Half Cent per Hour.

Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. No CHIMNEY is REQUIRED.

It makes its own gas as fast as it is required, and when the light is blown out the gas ceases to be generated.

One Burner is Equal to Six Candles. This Lamp burns Refined Petroleum, Gasoline, Den-ford's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit.
WIESTER & CO.,
17 New Montgomery street, Grand Hotel, S. F.



IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful TEST. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are,

1st.—A JOINTED PITMAN, which allows the knife or cutter-bar to work on any angle without extra strain or friction.

2d.—It can be run with a STIFF or LIMBER POLE, as desired.

3d.—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.

4th.—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.

5th.—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.

Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow, Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at Marysville by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

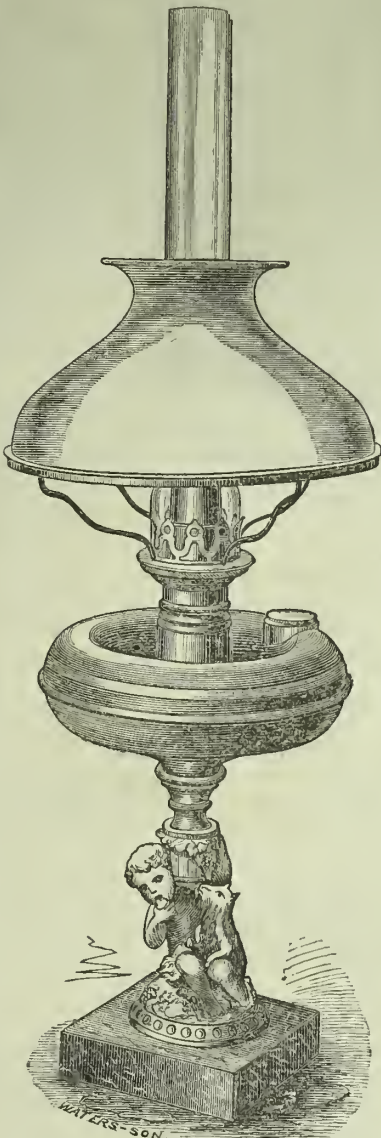
MATTESON & WILLIAMSON,
Stockton, Cal.

A New Firm.

JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento.
G. K. JEWELL,
T. B. FLINT.

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

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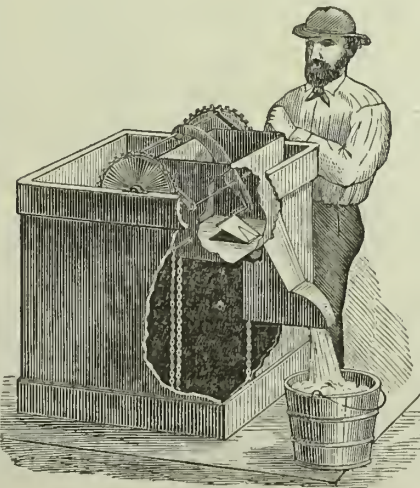
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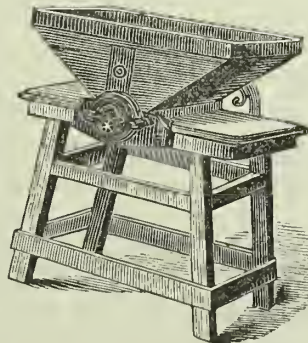
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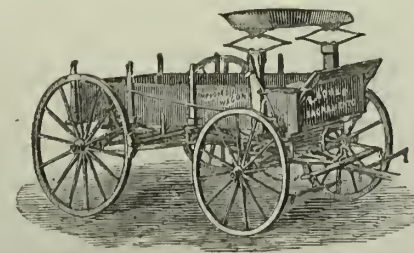
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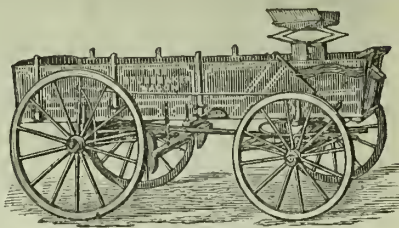


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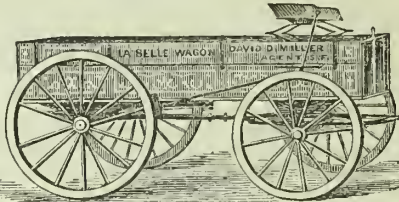
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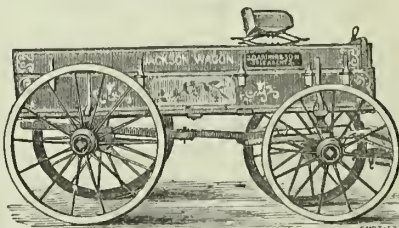
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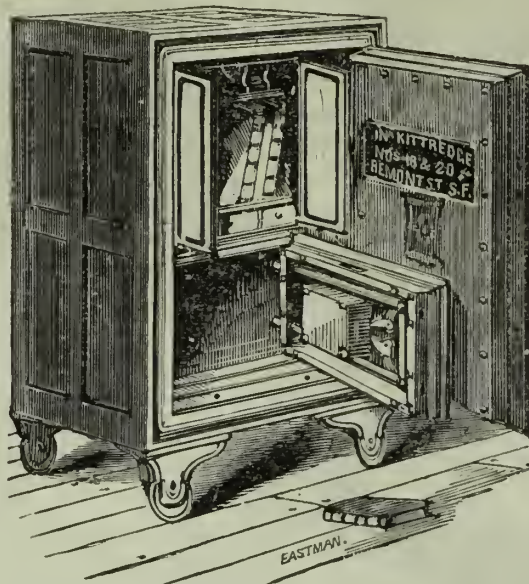
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Over two thousand dollars in cash premiums will be awarded for collections of plants, flowers, fruits and vegetables.

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Articles competing for premiums must be entered on or before Tuesday, August 20th, and delivered before 12 o'clock on Thursday, August 22d.

For Premium List, Rules and Regulations, and for all particulars, apply to

F. A. MILLER, Secretary,

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Volume IV.]

SAN FRANCISCO, SATURDAY, AUGUST 24, 1872.

[Number 8.]

Budding Fruit Trees.

Some time since Mr. Pryal, an experienced nurseryman, gave the ladies of the Oakland Farming Club some experimental instructions regarding the budding of roses and other shrubs and plants, which were well received. We now furnish for the benefit of our general readers the experiments shown by Mr. Pryal, with some others.

Figure 1 in our engraving represents a branch of any fruit tree, in proper condition for furnishing buds. It is usual on taking them from the parent tree to cut them with a half an inch of the old wood; they will not dry so quickly, when it is desired to carry them long distances. Another precaution against drying is to clip off the leaves, leaving only the stems half an inch long. This much of the stem of the leaf is quite necessary, as making it more easily handled in the process of budding.

Suitable Stocks.

The stock to be budded should be of the present year's growth also, though if the bark of a two-year old stock is not too thick and hard, and peels freely from the wood, it can also be budded successfully.

With a thin sharp blade make a cross cut with one pressure of the blade, and then a longitudinal cut from the middle of it downward about an inch in length just through the bark, as in figure 2. Prepare a bud as in figure 3 by scooping it from the twig, and smoothing the wood side down nearly to the bark, insert it as in figure 4, downwards, allowing the upper part to fit to the bark of the cross cut.

Then bind it in place—figure 5—with thin strips of cloth, bass matting or even coarse elastic woolen yarn is sometimes used. In two or three weeks loosen the bandage if the tree is growing rapidly, for by that time the bud has made a strong attachment to the stock if it is ever going to.

After Treatment,

The usual plan pursued is to let bud and stock remain untouched till the next spring. It is easy then to see whether the bud is alive or not. If it has dried and perhaps fallen out, the tree can be whip grafted upon its top, and no time in the growth of the tree lost. If it is found to be green, showing an inclination to grow, cut off the top of the tree down to one or two inches of the bud, and it will be forced into growth as soon as the season will admit.

Some nurserymen practice a method by which the bud is forced into growth at an early period. In two weeks after the buds are set in August or September, if the tree is still making a rapid summer growth, the top of the tree is cut off down to three or four inches of the bud; this causes an immediate putting forth of the bud and probably three or four more of the natural buds of the stock. When these buds with the inserted one, have made a growth of an inch, cut off all but the latter one, and this will often make a growth of twelve or sixteen inches the same season.

Budding Walnuts.

It is usually found difficult to bud the walnut by the process above given, on account of the large size of the buds, it being difficult to get the bark to cover well and hold the buds in place. Resort is usually had, therefore, to "terminal" budding. This is from our own personal experience—best performed in the spring when the bark peels freely and vegetation is just springing into life.

It is necessary that both the stock and the shoot containing the terminal bud should be as

nearly as possible exactly of the same size. Cut off the stock to be budded; then make a cut around, an inch and a half from the top and carefully wring off the bark whole, as in figure 6. Then cut off half of the denuded part, or down to three-fourths of an inch, and immediately return the bark to its place, the upper half of which will now be open.

The shoot with the terminal bud should be about two inches in length; then from the lower end cut around and wring off the bark, to a distance of three-fourths of an inch, as in figure 7, and immediately insert the scion in the open bark of the stock. Wrap the whole around with waxed cloth, which is preferable to dry cloth or bark of basswood.

Annular Budding.

This consists in removing a section of the bark of the stock quite round the tree, as in figure 8; then prepare a bud by making a clean cut around the stock from which the bud is taken, a little above and below a bud, then slit the same lengthwise a little distance to one side of the bud and carefully remove the annular ring of bark and the bud attached as in figure 9; spring it open and

stalk. The reason given for and against, being with one that the leaf helps to draw the nourishment from the stock to and into the bud, with another that the leaf can only serve to exhaust the bud and cause it to dry more rapidly than it would without it.

The Army Worm.

Entomologists would tell us that "army worm" was simply the vulgar name for the *Leucania unipuncta*. However vulgar it may be, we prefer to say army worm, or as it is sometimes called, grass worm. It derives its name from the fact that when it appears to the injury of the agriculturist, it comes in countless thousands or millions, and voraciously devours all vegetation in the form of leaf or grass in its progress.

Having made havoc of the fields in which they first issue from the pupa state, they take up their march for adjoining fields in countless multitudes and lay waste as they advance, everything green that they can appropriate, nor are they at all delicate in their tastes or very discriminating. Their general habit is to travel and devour by night, hiding as best they

In such cases they go as an army of millers, generally unseen, because their flight is in the night, and lighting down upon a given spot deposit their countless eggs, upon the surface of the ground, around the stalks, and among any species of vegetation they may find. On hatching, and while quite small, they require but little food and move but little; in a few days, however, they become ravenous, and take up their line of march.

They are common to many parts of the Atlantic States at certain seasons, and a variety of the same species is known in California, and an army of them in the space of a few days we are informed, not many weeks since, destroyed to the extent of 200 acres of sugar beets for the Sacramento Beet Sugar Company at their farm four or five miles east of Sacramento, before their ravages could be checked.

However, the company still have a thousand or more acres of beets, and will turn off sugar in a few weeks and the months following by the thousands of barrels.

State, District and County Agricultural Fairs.

California State Agricultural Society, at Sacramento, September 19th to 28th inclusive. C. F. Reed, President; Maj. Beck, Secretary; I. N. Hoag, Corresponding Secretary.

Bay District Horticultural Society, at San Francisco, August 22d to September 7th inclusive.

Northern District Fair, at Marysville, September 2d to 8th inclusive.

Sonoma and Marin District Agricultural Society, at Petaluma, September 9th to 14th inclusive.

Contra Costa County Agricultural Society, at Pacheco, September 9th to 13th inclusive.

Farmers' Club Fair at Santa Cruz, October 10th to 12th inclusive.

Humboldt County Agricultural Society, at Eureka, September 25th to 27th inclusive.

San Joaquin Valley Agricultural Society, at Stockton, September 10th to 13th inclusive.

San José Valley Fair, at San José, September 2d to 7th inclusive.

American Institute Fair, at New York, Commencing September 14th.

Montana Agricultural Society, September 22d to 27th inclusive.

Washington Territory, A. M. & A. F. Society, September 18th, and will continue 4 days.

National Industrial Exposition, Cincinnati, Ohio, September 5th to October 25th inclusive.

The Branch Insane Asylum.

The Commissioners, Shurtleff, Wilson and Smith, appointed to select a site for the Branch Insane Asylum, having decided upon Napa as the most eligible location, it required but the approval of the Governor and Dr. Logan, Secretary of State Board of Health, to definitely fix the location.

Dr. Logan, having visited the locality and examined its surroundings and given the matter his careful consideration, filed his report with the Governor, indorsing the action of the Commissioners, which, receiving the sanction of Governor Booth, determines Napa as the site of the Branch Insane Asylum. We congratulate the people of Napa on the result.

CALIFORNIA SEEDLING POTATOES.—The sample of potatoes presented the Oakland Farming Club for naming (as noticed in our report of that society), seem really to be a choice product. They are of white color, fair skin, and firm solid body. The convex eyes give the tuber a fairer appearance, and we should judge would enhance their commercial value over the indented eyes which cause more or less waste in peeling.



put it in position on the stock and bind as with other budding.

This is a method practiced more by the amateur nurseryman than others, and is applicable to trees with thick bark and large buds like most of the nut-bearing trees. In the hands of a skillful manipulator it is practiced with singular success.

Budding Herbaceous Plants.

This method is often pursued with roses and other bushes in which the wood is extremely soft or porous or has a large pith, and with which a difficulty often occurs in getting the bark to peel. These woods are more surely budded by simply scooping out a bud in form like figure 10, and making a corresponding cavity in the stock as in figure 11; place the bud in position and bind as in ordinary shield budding, the method first described.

Instead of scooping out the bud lengthwise of the twig, some practice taking it transversely or across it, and then removing a corresponding section from the stock, insert the bud and tie fast. In whatever way it is done, the great point to be secured is, the bringing together as perfectly as possible, corresponding portions of the inner bark of both the stock and bud.

Some florists insist upon leaving the entire leaf attached to the inserted bud; others clip off the half of it, whilst others are as certain that after the bud is inserted and fastened, that it is better to clip away the entire leaf and its

can by day; but if famishing for food, will travel by day.

The van of the army of invaders and devourers advances at the rate of from two to six rods an hour; so that unless discovered in season will often do great damage before their presence is known or suspected. The best bar to their progress is a double furrow, in depth, by the plow, leaving a perpendicular or slightly overhanging side which they are unable to ascend.

When a multitude have collected in the ditch, sprinkle dry straw over them and fire it, which kills them and leaves the ditch open and ready for another legion of the advancing army, which a few times repeated destroys the greater part moving in that direction.

The eggs from which are hatched the pupae, are deposited by a moth or miller in shape and size, as represented by the cut. They are more usually deposited on dry uplands in seasons in which a wet winter has been preceded by a succession of dry ones, the accumulated moths of the dry winters being forced out of their low land breeding places, by excessive moisture and seek better grounds in which to secure the perpetuation of their kind.

CORRESPONDENCE.

Steam Plowing.

EDITORS RURAL PRESS:—In your excellent paper of the current week, is an article making inquiries as to the relative values of horse and steam plowing, you say: We have, of California invention and made right at home, gangs of three plows each, that with six horses and one man to sit upon the gang and drive, can do good work, and they do it to a depth of soil sufficient for the production of all our grain crops to perfection. Now take two of these gangs, and we have two men and twelve horses cutting a width of six furrows; the wages of the two men at \$2.50 per day amounting to \$5.

Is there a steam plow in the world cutting six furrows in width, that can be operated by just two common plowmen, or at the same cost, of five dollars per day, and be run at a cost for fuel and attendance so much less than the twelve horses, as to make it, capital and all considered, greatly superior to horse-power?

Comparative Cost.

I will make a comparison between the double engine system, and your horse power. By recent advices from the Royal Agricultural Society's show, held last month in England, at a public test of portable engines, 3 pounds of coal is required for a dynamometrical horse power per hour. This was the average taken from five of the best makers. Now we will take two engines capable of working up to 50 dynamometrical horse power each, one of the engines being stationary while the other is working, the continuous power of both engines will be 50 horses; we will allow 1 pound of coal per horse power per hour for radiation and moving into position.

Fifty horse power at 4 pounds of coal per horse power per hour, with coal at 12 dollars per ton for 10 hours work—\$12; 3 men and 2 boys wages, \$13; oil and tallow \$3, total \$28.

To do the same amount of work by horses it will require 8 gangs of plows, 48 horses feed per day, \$19; 8 men's wages, \$20; total \$39. Leaving a balance in favor of steam for one day's work, of 11 dollars.

Does Better Work.

There is another advantage in steam plowing, although it is not generally appreciated, and that is, the steam driven implement in going at a great rate of speed, is much better adapted for tearing and breaking up the ground and leaving it in a better condition for the action of the atmosphere or receiving seed, etc.

Steam cultivation is not confined to England and Egypt, you will find it working to great advantage in nearly every country in the world. In Louisiana, in working with mule power the yield was 800 lbs. of sugar per acre. In working on the same land with steam, the yield was increased to 2,000 lbs. per acre.

Again on public trials between horses and steam, in Austria, 6 acres was plowed by horses and 6 acres by steam, in the same fields, to the same depth; the result of the yield was from 20 to 70 per cent. more for the steam cultivated fields.

Can Work Day and Night.

A set of engines with plows, cultivators, harrows, etc., will cost \$9,000. And as the engines are made to work by night as well as by day, they will be equal to a double shift of horses, therefore what will be the cost of 96 good horses, 16 gang plows, cultivators, harrows, harness, etc.

The engines are also ready at a moments notice for propelling any kind of machinery, whose concentrated power is required; in this case no comparison need be made with horses; 48 horses, will pull 24 plows. The steam engine will pull 8 furrows at once, at three times the speed of the horse implement, doing exactly the same amount of work. ALEX. CAMPBELL.

Washington, Yolo Co., Aug. 11th, 1872.

We are pleased to hear from our correspondent on the subject of plowing by steam, and we certainly wish to see it a success. We have personally seen Fowler's steam plows at work in England, Belgium, and France; but never saw one of them cutting eight furrows at once. The most we ever saw was a double gang of eight plows, four right handed and four left, of course only four cutting at a time.

There is no point on which we think our correspondent has not given the subject sufficient thought. For instance, we saw Fowler's steam plows, going at the rate of three miles an hour, and doing as good or better work than horses going at the same speed; both doing the work well; but when Fowler's plows were put to a speed of five miles an hour the work was not nearly as well done, and at six miles an hour the furrows were thrown much of the time twice over, and oftentimes entirely out of place, across the second and on to the third furrow.

So that to say that steam will draw its plows three times as fast as horses, it is simply drawing them faster than is required to do good work.

No one can be more ready to hail the intro-

duction of a successful steam plow, cutting eight furrows at once, than would be the proprietors of the Press, and we sincerely hope to see its accomplishment, at an early day.

Sacramento County.

EDITORS PRESS:—Your paper, which comes regular, is a pleasant visitor to our homes, and its contents eagerly sought; for they contain always something new and refreshing. I noticed in the remarks of Mr. Webster at the Oakland Club of July 26th, that his objection to raising barley hay was on account of the beards hurting the mouths of horses. I agree with him in that, for on examining the mouths of my horses last week, I found them badly cut, and the beards working into their gums. I at once made a strong solution of alum and vinegar, and swabbed them three or four times a day; now they are pretty well.

The subject of manures being saved and collected, was spoken of. I think it is a question of vast importance to the farmers of California, for this cropping off system, and not replacing some fertilizing material, will deteriorate the land and will at last run out. Gather a compost heap near your barn, of barnyard manure, lime, ashes, sand, decomposing material, etc., and let it rot, by fall you have a fertilizer which will show wonders in your crops and be highly beneficial to the soil.

In your "Editorial Notes" of August 3d, you speak of visiting the vineyard of D. N. Harwood, of San José, and the mode of pruning the Catawba grape, a different way than usual, i. e., leaving the canes three feet long, instead of two or three eyes. Last year I tried my Reislings—cutting them from four to six eyes long; this year I was pleased with the result, for they are bearing twice the quantity. I shall try the experiment on my Catawba and Orleans—they do not bear so full as others—the usual way of trimming, and if there is a better system why not adopt it. We have had some scorching weather, so much that the farmers complain of their grapes being hurt; the Muscat and Hamburg, especially. I don't think the crops are up to their usual quantity, at least the Mission variety. Take the season through, I do not know of a year when we have been blessed with such a cool season. I would like many more of the same sort. G. E. Sacramento Co., Aug. 9, 1872.

Normandy Pippins.

EDITORS PRESS:—Cannot some Frenchman tell your readers how to dry apples whole, as they are dried in France, and exported to England under the above name? I never saw any other kind of dried apples in Europe, where apple "sauce" is unknown, I believe. The Normandy pippins are of a light brown color, and are packed in boxes between layers of paper.

Gently stewed in a syrup of sugar, spices and lemon juice they form a toothsome dish for dessert. (Why will Americans persist in calling dessert, the course of sweets and fruits after dinner, as though it were desert, a howling wilderness.) They might form an additional article of export. E. BERWICK.

We concur with the views of our correspondent as regards the toothsome of the Normandy Pippin prepared as above. But Americans already are preparing both apples and pears in a superior way, by coring and paring them—otherwise whole—before drying them. With any of the many improved drying apparatus now in use, in which a current of heated air is employed, there is no difficulty in drying apples or pears of the largest size, and for some purposes are better than when sliced or quartered. There are now also, excellent machines for both paring and coring apples and pears.

Artesian Wells.

EDITORS PRESS:—It would be a great advantage to this valley if we could have artesian wells, and thinking it probable artesian water could be found, we wish to procure all the information possible on the subject with a view to forming a company to try the experiment. Now, as such information would probably be of interest to many of your readers in other parts of the State, could you not give us a treatise on artesian wells with all the particulars of kind of machinery used in boring with expense of pipe, etc. What has been the expense per foot of boring them in San José and elsewhere; or, by directing where such information could be found, you would oblige some of us.

Can you tell how much water one pound of coal will raise any given height? Such information has been published, but we do not know where to look for it. The great want of this country being cheap and reliable irrigation, we want to find out what experience with good machinery has done. ISAAC B. RUMFORD. Plano, Tulare county, Cal.

Here is an excellent opportunity for any one acquainted with the business and who has experience in boring such wells, who has perhaps the tools, and possibly wants a job to sink a few or any number of wells, to communicate direct with the enquirer or through the medium of the RURAL PRESS.

California Beet Sugar.

The New York Tribune has a traveling correspondent who, having given his attention to the beet sugar interest of California, writes: The beet grows so well in Southern California that I do not doubt that the State will make, in a few years, a very large quantity of beet sugar. There are, so far as I know, but two beet sugar manufacturing factories now in California. One of those lies four miles east of Sacramento. It is completely furnished, and its manager is a German engineer of approved experience and skill in the business, who has been brought out by the company. I walked with him over the factory and rode over the beet fields.

The machinery used is of the latest and best kind. What struck me here, as it has in other California manufacturing, is the great advantage they have in not being obliged to use any precaution against frost, cold and snow. Machinery must, of course, be well bedded and braced; but otherwise a manufacturing building in this part of the State may be as slight and airy as you please, and thus a large expense is saved.

Here, for instance, the water used in the different processes is pumped up into the upper story from an artesian well 150 feet deep. The pump stands in a shed—the water pipes run up on the outside of the building. The storage-house for beets is by no means such a frost-proof structure as it would have to be with us. It seems to me that these advantages, arising out of a mild climate, will do somewhat—how much, I cannot tell—to counterbalance the higher prices of labor in this country. In other respects, the climate, too, appears to be singularly favorable to the successful culture of the beet, and the development in it of the greatest quantity of saccharine matter.

The seasons in this State are certain and sharply marked. The rains begin in November. Beets, which in France are sown between April 24th and May 10th, are here sown in January and February. Voelcker, a writer of authority on this subject, states that the more rain falls on the land during the first two months of the growth of the beet, the better the crop is likely to be—if a dry season follows.

Now, in California, all the rain-fall of the year occurs from November to April, and after April—that is to say, when the beet begins to require a dry season, to develop its saccharine quality—comes here the dry season, when rain is so absolutely unknown, that during the summer, the farmers leave their grain piled up in bags along the railroad, often two or three months. The rain-fall and the absence of rain come with precision and certainty, at the proper times, for the beet.

Capital Employed.

The Sacramento Beet Sugar Company have expended, in building machinery, and 540 acres of choice land, \$225,000. They have rented other land, so that they have sown with beets, this season, 1,100 acres, from which they hope to get an average of ten tons of beets to the acre. In France, they get from 12 to 15 tons to the acre. The 1,100 acres planted this year will employ the factory about eight months, and the manager hopes to turn out at least 10,000 barrels of sugar this year.

Only the whitest sugar is made. A ton of beets ought to yield a barrel of sugar. The refuse of the beet is fed to stock, and I saw cows leaving green grass and grain to eat this bagasse. A milkman told me that cows fed on this refuse made good butter and milk; but I should think it would be found especially valuable for fattening cattle. For this it is much used in France, a little grain being fed only for a few days before the beasts are sent to the shambles.

As population increases in California, I see no reason to doubt that beet sugar making will become one of the most profitable and one of the most important industries in the State. That it has had an important beneficial effect upon the preservation of the land, and largely increased the wealth of the farmers who have engaged in it, in France and Germany, is well known, and in California, where so much of the land is, year after year, sown with wheat, it will be a very great advantage to farmers, and encourage a more solid and thrifty style of farming to introduce this culture.

At present it is necessary for a manufacturer to raise his own beets, just as the vineyardist makes his own wine, but a sounder system will come in, as factories increase, under which the manufacturer will contract for beets grown by farmers. In some parts of Europe this is done to a great extent, and the farmer is guaranteed a certain price per ton for his beets, on the condition that he conforms in his field to work to specified rules of the manufacturer.

At the Sacramento works the beet seed this year cost \$10,000, an important item, which will be saved next year, for the company will raise their own beets. There will soon be dozens of beet sugar factories where there are now but two. In the San Joaquin Valley alone there are probably 2,000,000 acres admirably suited to beet culture. The soil is light, and yet rich, easily penetrated by the plow, and needing only deep culture to produce a sure crop, even in dry years.

Where there are no manufacturing the farmers' children must emigrate.

Improved Metallic Tubular Harrow

Among the many patents that have been allowed through the Scientific Press Patent Agency, on farming implements, is one to James Harris, on a metallic tubular field harrow, some of which are now being manufactured at the San José Foundry, Santa Clara County, and at the City Iron Works in this city. This improvement consists in constructing the frame of the harrow of metallic pipe. The tubes are held together by passing iron rods through the transverse tubes and through the sides of the longitudinal tubes, which are drawn together by nuts on the ends of said rods. An end piece, or washer, of peculiar construction is used to provide a bearing for the transverse tubes against the longitudinal ones.

Although much attention has been given to improving other farming implements, the harrow, until lately, seems to have remained the same. In many places in Scotland, however, the wooden harrow has been entirely discarded and given place to the iron one, the latter being preferred by the best farmers of that country as being better for pulverizing the soil and covering the grain; but the principle upon which they are made being expensive and requiring considerable trouble, they are not much known in other parts of the world.

In this tubular harrow the beams and cross bars are suitably made and finished at the first process of manufacturing the iron, consequently little labor is needed to join the frame work together; for that reason a good durable iron harrow can be made with steel teeth at less cost than a wooden one with iron teeth, and it can at the same time be made light or heavy, large or small, to suit different soils. As to durability, an implement of this kind made of the materials used ought to last a generation without any care in any country. Arrangements are being made to supply the demand for the coming season, and the proprietor proposes to dispose of manufacturing and county rights. It can be seen at the City Iron works, where mechanics, manufacturers and others are invited to examine it.

An Observatory in the Sierras.

The famous telescope maker, Alvin Clarke of Cambridgeport, Mass., is now engaged in constructing a 27-inch refracting telescope for the U. S. Government, at a cost of about \$50,000. It is designed that this instrument shall be set up at some point of high elevation, either on the Rocky Mountains or the Sierra Nevada, and Prof. Young, the well known astronomer of Dartmouth College, and Prof. Davidson of the Pacific Coast Survey, have been employed to select the proper site. After an examination of both regions, it is understood that a point near where the Central Pacific Railroad crosses the summit of the Sierras, the elevation of which is about 10,000 feet above the sea level, will probably be selected as the site for the new observatory.

The clearness of the California atmosphere, and the freedom from obstructing clouds at that elevation will render the point designated, most admirably suited for astronomical purposes. It is said that with such a telescope, and the high magnifying power of which it will admit the use, there is not over one or two days or nights per year on the low Atlantic coast where it could be used with its highest magnifying powers, while on the Sierra, with our freedom from clouds, many more favorable opportunities must exist for such an important use of the extensive power of the instrument in making observations, and we look forward for marvellous revelations in physical astronomy, if the proposed site is finally decided on. The attention of the astronomical world has long recognized the importance of an observatory on this coast, and we trust that no misdirected zeal or local jealousy will interfere to prevent the early anticipated consummation of such a work.

How to KEEP THE BOYS.—An intelligent and thrifty farmer says: But for the cooperation of my boys I should have failed. The eldest is near twenty-one, and the other boys in the neighborhood, younger, have left their parents; mine have stuck to me when I most needed their services. I attribute this result to the fact that I have tried to make their home pleasant. I have furnished them with attractive and useful reading, and night comes, and the day's work is ended, instead of running with other boys to the railroad station and adjoining towns, they gathered around the great lamp and became interested in their books and papers.

HOME AND FARM.

Sociability Among Farmers.

Naturally the farmer is an unselfish man. His labors are mostly out of doors. His calling takes him much abroad, and enables him to mingle considerably with the world. Yet looking at the very large proportion of the population embraced in his pursuit, and the important influence exercised by it over all our public affairs, it is a subject of common remark, even by agriculturists themselves, that their social intercourse should be so much restricted.

There is no other cause for this seclusiveness on the part of the farmer that we can see than the "treading in the footsteps of their predecessors." Be this as it may, there are other causes operating which appear to be changing this for the better. County fairs, bringing agriculturists together from districts sufficiently near to each other to make acquaintanceship pleasant and lasting, and putting them in friendly emulation in matters and things involving their agrestic skill and success, are clearly working to form more close companionships between those whose domestic comforts and family enjoyments must be greatly promoted in the future.

Little clubs among the farmers of a neighborhood, to meet once a week, to discuss or talk over the innumerable subjects connected with the intelligent prosecution of their noble profession, produce a decidedly fraternizing and socializing effect. While these local associations should not be too formal and restricted, they should have an official organization as better calculated to cause punctuality at the meetings, as well as to add to their permanency.

On these occasions the wives and daughters of families should always accompany their husbands, fathers or brothers—not to participate of course in the proceedings that may take place, but to increase the agreeability of the meetings, and to share in the pleasure of these delightful interchanges of good neighborhood. Indeed, if the truth must be spoken—and we are ready to do it upon all occasions, especially upon such a one as this—in the world which is not refined and made doubly enjoyable by the presence of woman.—*Germantown Telegraph.*

Rules for Irrigating Meadows.

[From the German, translated for the Press.]

1. Never use too much water. When the water shows foam or small bubbles, the earth has absorbed a sufficient quantity.
2. After irrigating, keep the meadow as dry as possible; therefore, carefully close up the canals which conduct the water.
3. Irrigate only in warm weather, and only in the evening and during the night. In very hot weather—where the nights are very warm—do not irrigate. The growth of the plants is injured in the case; the moisture is too quickly absorbed and the absorbing cells of the plants are thus burst; the grass remains small as it will soon become too brittle to expand.
4. Irrigate in spring only when the winter has been dry and mild. After a long and severe winter the earth is loose and the flowing water carries off the loam. Hence one must wait until the earth has been settled by rain and warmth.
5. Never irrigate high grass. The grass covers the soil, the air cannot act upon it and hence the lower part of the stalks get diseased. But
6. Irrigate after harvesting the hay, yet only at night. If the hot sun is on the soil over which water flows, the grass gets diseased. It is better to wait until the grass is hand-high.
7. Irrigate principally late in the fall. This can be done until the night frosts come. Fall irrigation decomposes the dead leaves and plants and enriches the soil. But the frost prevents this. [We may here refer the reader of the Press to a previous article from the German, contending for winter irrigation.—Ed. Press.]
8. Keep all the canals clear so that all parts of the meadow will receive equal amounts of water, that there may be no trouble from too scanty supply in one place and excess in another.—*B. Z. Peser Lloyd.*

CONDENSED WINE.—Chemists have succeeded in producing a condensed wine for the Austrian North Pole expedition.

Farm Houses.

Farm houses, as a general thing should not stand directly upon the road. They are often thus located that the occupants may more conveniently "see folks" and what is passing. Such a location tends to disquiet and dust, while it sacrifices inexpensive beauty, which may be so easily obtained by setting the house a little back, on the knoll, which the road makers, perhaps, for good reasons avoided. A good house set a little back from the road, embowered in trees, will always sell for ten times the extra expense incurred in this ornamenting its surroundings. Its very situation, in fact, may be the chief attraction of its purchaser.

No country house is fit to live in if it has no trees near it—the larger, the better. We would rather occupy a cabin embowered in trees and evergreens, than such a stately mansion as we have seen, standing high and dry on a naked hill, dreary in winter and broiling in summer, looking as desolate as if it had been blown there by some malevolent hurricane.

But trees should not be too near; when standing so as to overshadow the house, they create an unwholesome dampness, not only injuring the walls and roof, and making the cistern water impure, but impairing the health of the occupants. Close to the house the trees are pernicious; at a little distance, they are wholesome, ornamental and desirable. They should never be near enough to intercept the rays of the sun, there is no more important curative agent; and some sunshine should be introduced, every day of the year, into as many rooms as possible. A neat, pleasant-looking place is always saleable. Horticulture, especially that phase of it which decorates the lawn, is the poetry of farming, and it is a poetry that returns compound interest.

The Best Time for Harvesting Hay.

This will seem a very simple question to most farmers, says the German *Bl. f. Ldw. u. Gew.*, but in truth it is not so simple. Generally the grass is cut at a regular time regulated by the other labors of the farmer who likes to let the grass stand as long as possible; often the grass is allowed to run to seed, the idea being that the seed is more nutritious than the grass itself, and that it is no injury to the land if some of the seed is spilled, as is easily the case; also by waiting until the seed is ripe, a large crop of hay is obtained. But this increase in quantity is only obtained at the expense of the nutritive properties and the crop is hardly more than straw. For so soon as the seed formation commences, all the nutritive elements of the plant are used for this and the leaves and stalks become woody and lose their valuable constituents for food. Moreover a large part of the plant dies. What farmer does not know that seed clover impoverishes the soil while grain-cut clover enriches it? Again the idea that more feed is obtained by late cutting is wrong, for the second crop is always smaller. Late cutting has also the disadvantage that through the seeds of the meadow plants the land gets overrun with weeds. Finally the gain by seed of the ripe grass falling on the land is imaginary, as most of this is lost on account of the birds, mice, etc. The best time for cutting is when the majority of plants are in full bloom, to this earlier or later; for then the nourishment is most fully distributed throughout the plant, leaf and stalk are full of rich juices, the plants have reached their greatest size and hold much nitrogen, and the stalks have not become woody and therefore are easily digestible and nutritious.

HOW MANY EGGS CAN A HEN LAY?—The Dresden Society for Protecting Animals, says: The ovary of a hen contains, in round numbers, 600 eggs, which can be laid. Of these the hen lays, in the ordinary course of existence, 20 in the first year, 120 in the second, 135 in the third and 114 in the fourth. In the four following years this number decreases regularly by 20, and in the ninth year the hen lays only 10 eggs in the best case. Hence no one will keep a hen for eggs after her fourth year, if he wishes to obtain good results from the feed given; after this it is better to endeavor to propagate valuable breeds.

ONLY good farming pays. He who sows without reasonable assurance of good crops, annually, might better earn wages of some capable neighbor than work for so poor a pay-master as he is certain to prove himself.

MISCELLANEOUS.

Something New in Pile Driving—Shooting the Piles into the Ground.

F. C. Prindle, Civil Engineer, has made a report of the marvelous success of the new method of shooting piles into the ground with cannon now in use in the Government construction of the new landing wharf on League Island, in the Delaware. More than 800 heavy yellow pine piles, averaging ten inches middle diameter, have now been driven through mud and clay to a very hard bottom, twenty-one feet below mean low water. The machine is secured to a large scow, in the usual manner, assisted by a small engine to hoist the piles into position.

The gun, weighing 1,800 lbs., has 6½ inch bore, 24 inches deep, pointing upwards, and is recessed at the lower end to receive the head of the pile, upon which it rests.

The ram, weighing, 1,300 lbs., moves in the same guides as the gun, and is provided with a piston, projecting from its lower end, and neatly fitting into the bore of the gun, its upper end having a bore of greater diameter, to receive a fixed piston secured to the top of the frame, and thus form an air cushion to prevent its escape from the guides when the height of its rebound is limited, as during the first blow with very long piles. The ram is caught and held at its highest ascent, and also released for the succeeding blow by the operation of a friction brake at one side pressing it against the opposite guide—all at the will of the operator on deck.

The operation of driving is as follows: The engine hoists the ram, gun, and pile into position simultaneously, with one movement; the brake is then applied, holding the ram in place uppermost, and the gun and pile are then lowered together until the pile rests in the mud; the gun is then lowered on the top of the pile, the recess securely holding the pile-head in place directly underneath.

A cartridge is then dropped in the gun, the operator releases the brake, and the ram falls with its piston entering the bore of the gun (which is made slightly funnel-shaped at the muzzle), and by compressing the air exerts a gradually increasing downward pressure upon gun and pile, till the inertia of both is more or less entirely overcome, the cartridge is crushed by the piston, and ignited by the heat evolved by the sudden and severe compression of the confined air. An explosion immediately ensues, the result of which is to violently force the pile downward, and this is measured by the reactionary effort upon the ram—the height to which it is thus thrown, and from a state of rest, practically. The force due to the fall of the ram, and the explosive force exerted to throw it up and again in position, are thus at once combined and applied to the pile.

The principal difference of effect between this method and the ordinary hammer, appears to be just here: in the one case the pile is already in motion when a tremendous force is suddenly brought to bear upon it in the same direction, and in the other case it receives a violent blow when at rest, and a considerable portion of the force is expended uselessly in the destruction of the pile-head itself, before its inertia is overcome and motion produced. Hence the necessity of strongly banding the pile-heads in the latter case, and the utter absence of any necessity for their protection in the former.

The ram, on its rebound, is caught and held by the brake, and the operation repeated at pleasure. On January 13th, twelve piles were driven in a single hour. The piles were all driven without the slightest injury, and none of them showed any marks of violence.—*American Builder.*

PRECISION IN STONE CUTTING.—It is a curious fact, that the six hundred men who are employed in cutting granite at Dix Island, Maine, for the New York Post-Office, cannot prepare material fast enough for the two men who are employed to set the blocks. Each block of granite is cut, trimmed, faced, and accurately numbered according to the working plans. When it arrives at the site of the building, only two men are required to set it, aided as they are by steam hoisting-apparatus. Every stone is made to fit exactly in the space intended for it. So accurate are the plans of the supervising architect, that it is stated that the superintendent of the Post-Office building has only been obliged to order one stone during the entire work thus far, and the foreman at Dix Island insists that the missing one was sent, but lost in transportation.

SCREWS VS. NAILS.—Most mechanics who work in wood do not appear to understand the eminent superiority of wood screws over brads and nails. In many places, one screw is worth three or four nails. When one is securing cleats to batten doors, or cleats to a wagon box, nails are very unsuitable when compared with the efficiency of gimlet-pointed screws. Screws will hold two pieces of wood more rigidly than nails; and, if the timber should shrink a trifle, the screws can be turned up tight; whereas it is difficult, in most instances, to tighten up loose work with nails in all places where there is an unusual strain on the parts to be held together.

Mechanical Architecture.

The idea is gaining ground that an architect should aspire to be also an artist—that he should confine himself less closely to his box of instruments—his square and dividers—and draw with a free hand, like an artist. Architecture has its constructive and its decorative aspect, and the architect should be artist enough to combine both.

"There is, perhaps," says the London *Architect* "no quality more conspicuous by its absence than this [artistic design] in the actual practice of what we agree to call the architectural profession. The regulation 'office' education of an architectural student has become as far removed as possible from 'studio' work, and this fact is significantly illustrated by the habit, confirmed and accepted, which even our leading architects cultivate when they speak and write of their assistants and pupils as 'clerks.'"

At no time in the history of the art has either of these junior members been so much regarded as a mere clerical machine for the use of the square and compasses. If he can deftly manipulate his box of instruments, he seems to reach the summit of the professional skill required of him. Granted a little knowledge of the historical styles, with a certain or uncertain amount of ideality in using them, and your complete article is ready to hand in the shape of an architect, as we consent to accept it.

The canvas-painter, however, when he desires to deal with the representation of building designs, is happily ignorant in great part of the compasses and bow-pencil. His instinct is to draw with free hand, and not with any mechanical appliance, the forms which he desires to delineate. He regards and treats a building from general conception down to detail. The office-trained architect, on the contrary, begins with notions of detail and tries to work up the complete result.

It is as idle to blind ourselves to this distinction as to deny the difference of the result. In the one case we have pictures of architectural interest which in skilled hands will charm the eye, while the other gives us but a scholarly elaboration of 'correct' shapes and details, worked out, it may be, with more or less artistic feeling, but which continually remind one that our cotemporary practice of architecture smacks more of the office than the studio.

No great architect ever depended on mechanical instruments of brass or steel for the realization of his conceptions."

A NEW SILVER STEEL—PYRO-SILVER.—The question has more than once been asked, why was not the steel knife banished with the steel fork? We believe the true answer to this to lie in the fact that no one had discovered a silver knife with a cutting blade that would continue sharp and wear as steel does. But the discovery has now been made, and in the pyro-silver of Mr. J. Neal, of 48 Edgeware-road, we have a material which combines the above qualities in an eminent degree. This compound, as applied to knives, consists of a blade of the finest steel as a basis, and which is chemically cleaned by a special process. It is then treated with silver in the purest possible state, and the two together are passed through certain processes known only to the inventor, after which they are treated in combination under atmospheric pressure. By this means the silver is said to be driven into the pores of the steel, and heat afterwards has no perceptible effect on the metals. The result is a knife which will not rust, is not stained by acids, and only requires washing after use. When blunt it is simply sharpened on a steel in the same way as any other knife to keep an edge, and it does not partake of the flavor of anything it may have to cut. In short, it possesses the combined advantages of both steel and silver, besides others peculiar only to itself, as we have found on a fair trial of the metal.

PROSPECTIVE ABOLITION OF STEAMER FUNNELS.—According to the *Swiss Times*, two Austrian marine officers and a marine engineer have discovered by united experiments a method of conveying away under water the smoke from the steam engine, instead of through a funnel into the air. They make use of double ventilators, which compress the smoke and force it overboard. For propelling these ventilators they employ, according to circumstances, either water power—that is the pressure of the water between the surface of the water and the place where this apparatus is fixed; or, for smaller vessels, steam-power. A chief advantage of this discovery will be the greater security of ships of war, as, in armoured ships, the only vulnerable part, the funnel, will be taken away. For submarine and torpedo ships and monitors this discovery, it is said, will be of great value.

VELOCITY OF ELECTRIC WAVES.—The velocity of electric waves through the Atlantic cable has been ascertained by Professor Gould to be from 7,000 to 8,000 miles per second. Telegraph wires upon poles in the air conduct the electric waves with a velocity more than double, the rapidity of the transmission increasing with the height. Wires slightly elevated transmit signals with a velocity of 12,000 miles per second, and those at a considerable height give a velocity of 16,000 or 20,000.

FARMERS IN COUNCIL.

Napa County Farmers' Club.

Club met at Napa, Saturday, August 10th; the President, Mr. W. A. Fisher, presiding:

A communication from the Santa Cruz Farmers' Club, stating that they had elected five delegates to the Convention of the 23d prox., was read and placed on file.

The President having expressed a desire that the Club should elect the delegates to the Convention instead of his appointing them as called for by the resolution adopted at the last meeting, the following named gentlemen were proposed and duly elected to represent the Napa Farmers' Club at the Convention to be held in Sacramento, September 23, 1872: W. H. Nash, W. A. Fisher, T. L. Grigsby, J. M. Mayfield, J. B. Saul.

Mr. Fisher made a few remarks with reference to the discussion of last week, and in explanation of some matters which he thought had been lost sight of in that debate, closing with an earnest appeal to farmers to keep out of debt; this, in his opinion being the key-stone to all agricultural success.

The discussion upon the subject chosen for debate at this meeting, "What kind and variety of products are the most prudent and profitable for us to cultivate?" was then opened; the President stating that the topic did not restrict the members to debate upon grain or cereals, but could include fruit, vegetables, cattle, grasses, or any other subject connected with agriculture.

Mr. Nash said that he had probably worked his farm different from any other farmer present. Had raised a greater diversity of crops than perhaps any other man in the county, and for that reason did not know that his experience would be any criterion for others to go by. Had he relied upon either wheat or pasture exclusively on his farm of 165 acres, he would have starved to death. He had followed up the raising of vegetables, corn, fruit and nursery trees. He had made on his farm, for the last four or five years, \$100 to the acre on squashes, water-melons, tomatoes and sweet corn, all of which he raised and sold about this neighborhood. Had made more money to the acre on nursery trees than anything else. He had grown a considerable quantity of sweet corn, for which he obtained an average of two cents a pound. Last year he had obtained two and a half cents for some. That, however, was a special variety and kind, and used as seed corn. He had advertised it well, took pains in putting it up in good order, and, by these means, had realized the price named. In the management of his land he had a variety of soil to commence with, and, by practice, experience and study, had found pretty nearly what kind of soil was adapted to each kind of crop. This was the kind of information indispensable to every farmer. In fruit, he had the various kinds arranged on the soil best adapted to each, and thus had made it successful.

Mr. Sawyer found this a difficult question. He had no experience in a diversity of crops, and it is hard to determine just what it was best to do here in California. In the Eastern States it was easy enough. There the proper rotation of crops was well established. Here we did not know hardly what we could produce outside of wheat, corn and fruit, and the latter was usually made a specialty by those engaged in it. His impression was that farmers would do well to parcel off their land into different crops, and watch the results. He would not advise the raising of horned cattle; thought they did not pay. Sheep were profitable. It was no particular object for any farmer to raise corn for market in this country; the price obtained for it did not justify the necessary outlay. It would pay, however, to raise it to feed to good breeds of hogs. There was money in hogs from their birth to their slaughter, and they paid well to raise. He also thought that farmers could make money by turning their attention to the cultivation of English walnuts and soft-shell almonds.

Mr. McClure thought there could be no fixed rule. Every man must determine from the kind and quality of his soil what it would be good to raise. He didn't think that with land rating from forty to fifty dollars per acre it could be made profitable for hog raising. He had found grapes more profitable than anything he had yet tried, yet he was afraid that they would not continue to be so. The country was full of wine, and the price was getting so low that there would soon be little or no profit left for the grape raiser. Most of the wine made last year was still in first hands. The cultivation of the grape was very expensive; it took time and money to get a vineyard in good condition. His land was not adapted to cereals and he had no experience with them.

Mr. Nash gave his experience in the matter of alfalfa. He was engaged in testing its virtues, but he had not seen the end yet, and was unprepared to give definite results, but thought it would be a success. He had a few acres in it, and it was now green. He thought that if it could be planted so as to hold out, take root deep, and stay from year to year, that we could then pasture anything we liked on our soil. He had seen seven acres sown in alfalfa near Woodland. This ground had not been irrigated since

1865, and when he saw it there were one hundred head of hogs and twenty-six head of horses and cattle on it. The grass was up as high as his fingers, and the stock had an abundance of pasture. One of the great needs of California was some kind of grass that will afford pasture the year round; if this one will do it, all right. He had also investigated the growth of alfalfa on the Sacramento, where they had grown it for years, and there it was a complete success. The main cause of the failure of it in this valley was that it was not half put in. There was complaint that it brought gophers. He had bought traps and paid his boys twenty-five cents each for gopher skins, and by the time they had earned \$8.50 the gophers were gone and there was not a sign of them left today.

Mr. Grigsby had been hammering away at farming for a number of years. His experience had taught him that he must raise something else besides wheat and he had taken up the sheep business. For sometime past he had divided his business up and raised in about the proportion of one-third wheat, one-third hay, and pastured about one-third of his farm. He had good crops, and found the sheep profitable. He tried cattle but found they did not pay. He had also tried alfalfa, but was swindled in the seed and it was a failure. His vineyard paid him better than any other part of his farm. He did not think the present fall in the wine market would last, and was of the opinion that what was needed among the grape men was the cultivation of more foreign varieties of grape.

He differed with Mr. Sawyer about the economy of feeding hogs. Hogs are profitable stock to raise, but feeding them was feeding away money. He found that it took about six pounds of grain to make one of pork. His orchard was a failure, as his soil was not adapted to fruit.

Mr. Robinson did not think it was as difficult to discover what kind of crops to raise as to know how to get rid of them. The great need was a market for what we did raise. He was satisfied that a variety of crops was what was needed; the variety to be selected with strict reference to the market most available. He thought that within five years this market would be materially changed. Money would be invested in manufactures and the population become dense, and consequently a home market would be created which would consume all we could raise.

Mr. Coombs had some experience with alfalfa. Had sown some in small patches, but not to say to any great extent. He was satisfied that any land good for corn would produce alfalfa. The only difficulty he had encountered was from gophers; they being very fond of the roots of this grass would follow it. It was a very tender plant. If it was sown and an early frost came it would be lost; but after it came up and got set it became very hardy. There was no difficulty with it however if sown at the right time, in the right way, and soil. If in the spring it should be put in moist land, if in the fall dry soil, either would do. He had investigated this subject in the Sacramento valley. Last year in June he had gone on some land of Haggin and Tevis to see about some sheep. He found there 23,000 head of sheep and 1,000 acres of alfalfa. From this thousand acres there had been one crop cut and they were then cutting the second, and expected to have sufficient crop to cut a third had they desired; but their custom was to cut two crops averaging about two tons to the acre, and then use the third as pasture for the sheep until that was gone, when the crops cut fed them the rest of the year. The sheep were kept fat and in good condition from that 1,000 acres. They had no gophers there because the overflows drowned them out. He had heard only that morning of a farm in Los Angeles county where forty acres in alfalfa kept one thousand sheep the year round pasturing them from field to field. For fear this might not be believed, he had brought the friend who had told him of it with him to substantiate it.

Mr. Bartlett, the gentleman spoken of by Mr. Coombs, said he could vouch for the accuracy of the statement just made, and further could say that in that county he knew of alfalfa lands that pastured and kept in good condition the year round four head of cattle to the acre.

Mr. Trubody had no experience with alfalfa that was of interest. He raised a good deal of corn; had this year about 100 acres. Thought the large Western corn best adapted to black soil. On high dry land the white flint corn would do better, and the yellow corn on warmer soils. In corn raising a great deal depended on the amount of labor done.

Mr. Fisher summed up the debate and made a few practical remarks upon the topics and ideas drawn out in the discussion. He also suggested the idea of bringing the younger members of the families of farmers to these meetings, especially the boys, that they might be instructed in the business of tilling the soil.

A conversational debate upon the wine interests of the county followed, which was participated in by Messrs. Sawyer, McClure, Fisher and some others, after which, at the suggestion of Mr. Nash, the following was chosen as the

Subject for the Next Debate:

"What is the best means of educating our children with reference to their future usefulness in the community?"

The President then urged upon the members the necessity for punctuality in attendance at the time of meeting, and the Club adjourned.

Sacramento Farmers' Club.

The club met as usual in the Agricultural Hall, Saturday, Aug. 17th, President Baker presiding. J. H. Carrington, of Florin, joined the club, and Professor A. H. McDonald was elected an honorary member: The latter thanked the club for the honor, and said that during the last few months he had been traveling some in the farming districts of the State and he had found that the name of the Farmers' Club of Sacramento had gone all over the State, and its proceedings were looked for with a great deal of interest.

Delegate

On motion, the President was requested to appoint five members of the club as delegates to represent the club in the Convention of Farmers, to be held in Sacramento on the 23d of September. At the request of the President the members suggested the names of the delegates, and the following were chosen: I. N. Hoag, S. N. Baker, W. S. Munroe, William M. Haynier and James Rutter.

On motion of Mr. Rutter, the President appointed a committee of six, consisting of E. F. Aiken, W. V. Miller, James Rutter, J. H. Carrington, A. S. Greenlaw, James Holland and T. K. Stewart, to take into consideration the propriety of getting up a fruit fiorel and to report at next meeting.

Sonoma Club.

The Secretary read a communication from the Secretary of the Sonoma County Farmers' Club, announcing their organization at Santa Rosa and their disposition to co-operate in whatever would advance the interests of farmers and agriculture; also asking for information on the subject of steam plowing.

The Secretary also read from the RURAL PRESS the proceedings of several county clubs, showing that the suggestions of this club as to the time and place for a meeting of delegates to a Farmers' Convention were generally approved and delegates being appointed.

The subject of fertilization of the California soils being called, Dr. Manlove led off in the discussion.

The doctor said he agrees with some of the positions of his fellow farmers on this subject as he had read them, but not with all. He is fully convinced that it is high time for us to look around us to learn what we can do to keep up the fertility of our farms, as the virgin earth was giving evidence of coming exhaustion. The average of our grain product was once forty to fifty bushels to the acre, now it was hardly twenty or thirty.

Some advocate shallow and some deep plowing. Some look to the application of water to fertilize their lands. All are good, properly applied; while water itself is no fertilizer; it generally has more or less of fertilizing ingredients, which it holds in solution and which it imparts to the lands—hence the famed richness of the valley of the Nile. Water acts as a solvent to dissolve the fertilizing elements already in the soil. But it is evident we must look to other sources, as we cannot all avail ourselves of the use of water when we want it. We must husband and use all the manures made on our farms. Our barnyard accumulations must be saved and rotted and properly applied. Every farmer should have

Compost Heaps.

Or barnyard chemical laboratories, in which all the waste or coarse products of the farm should be worked up into fine manure. This is not all that is necessary. In this country a good deal of practical skill is required in application, even of this well prepared manure, to our soil. If applied heavily and plowed in, when land is to be sown to grain, it will generally produce a rank growth of straw in the early part of the season, only to burn up as soon as the warm, dry weather sets in. Such has been my experience. I now make practice of applying fine manure to my land when in meadow, in the shape of a surface dressing in the winter or early spring. This will secure a good crop of hay, and the following crop of grain will also be much helped. Never plow in straw in this country. It is very necessary that the compost heap should be kept damp; if it be allowed to become dry it will scald and lose its value.

Hoit asked, if water is not a fertilizer, why are plants so largely composed of water?

Manlove—While water is one of the ingredients of all plants, it formed no portion of their fertilizing material, and certainly water pure could add no real strength or fertility to the soil—it only renders available the ingredients which the soil already holds.

Rutter—I differ with Manlove as to top dressing. Manure on the surface dries up and goes away in the air. In my opinion it should be covered deep.

Kendall—I fully agree with Manlove as to plowing in straw. It generally does more injury in our climate than good. In preparing land for a volunteer crop of hay, after wheat or barley, had much better results when the stubble has been burned than when it had been left standing. The burnt land gave heavier hay and less weeds. But green vegetation plowed in is very fertilizing. I think this one of the best modes of fertilizing our soils, and should be more extensively practiced.

Wolf moved a resolution that it is the sense of this Club that the lands of California that have been cultivated any length of time should be treated systematically with some fertilizing ingredients. Adopted.

Hoag—The lands throughout all our California valleys are noted for their great depth. They are "made lands"—having been gradually washed by the annual floods or wet seasons, from the surrounding mountains and highlands down into the valleys. These lands generally contain the same elements of fertility at a depth below the surface as they do to the common plowing depth. When the surface shows signs of sterility the land can be renewed by putting the plow deeper and turning up virgin soil. Thus, while it is so difficult to keep up the fertility of our soils in the ordinary way, on account of our peculiar climate, nature has furnished that fertility within our reach in almost inexhaustible quantities. We have only to put our plows down deep once in three or four years and bring this fertility to the surface. While we should not neglect the use of every other means, we shall sooner or later find it of great advantage to adopt the English system of

Steam Plowing.

There are many reasons why steam should be introduced into our State for the cultivation of our soil, and the one just named is among them. So many efforts to introduce traveling engines here to draw plows back and forth have proved failures that there have grown up among our farmers many prejudices against steam plowing in any shape. But the stationary system, or more generally known as the Fowler system, by which two engines are used, one on each side of the field, drawing a gang of plows back and forth between them is successful wherever it has been tried, and there is no reason why it would not be a success here. If introduced, it will no doubt be found among the cheapest and most effectual modes of keeping up the fertility of our lands.

On motion of Rutter, the advantages of steam power over animal power in the cultivation of land in California was selected for consideration at the next meeting, when the Club adjourned one week.

San Jose Farmers' Club and Protective Association.

Saturday, P. M., Aug. 17.—Pres. Casey in the chair.

Mr. Holloway desired to move a re-consideration of the vote whereby the president was authorized to appoint delegates to attend the State Farmers' Club to meet in Sacramento on September 23d. He did not believe in a

State Club.

It would soon become a central power that would infringe on our rights and its power would be used to grind money out of the poor Subordinate Clubs. If there is any subject of special interest on which united action is required it can be better done by a convention called for that special purpose after due correspondence between the several Farmers' Clubs.

The principal objection to the present proposition appeared to be the manner in which it was presented. The Napa Club had proposed the subject and it displayed considerable cheek on the part of one man to try to step in and take it out of their hand. If the speaker were to do that it would be justly considered impudence on his part, and it should be considered the same in Mr. Hoag.

The Oakland Club.

Wanted to be a kind of head center, when they first organized, and have all the rest of us revolve around them as satellites. Then they said, gentlemen, go ahead and prove yourselves worthy, and perhaps we shall acquiesce.

[As the Oakland Club has not communicated with, and never sent any recommendation to, any other club, this remark appears a little "unlovely."]

He wanted it distinctly understood that we were in favor of State Co-operation but not in this form.

Mr. Burgland opposed the motion. He thought there should be a head and center some place and a State Club was a proper place; without a central power we can have no unity of action.

Mr. York did not believe in being tied down by a central power but in this case he saw no danger, as the action of a State Club would not be binding on us until we ratified their action.

All central powers must live and the subordinates must support them. Considering the state of our finances it may be that this matter is a little premature, but he has faith in farmers' clubs. True, they are but in their infancy but their is a waking up among the farmers, there is a growing intelligence; they display sound understanding on all subjects and will soon be a power in the land.

The question was put and carried not many voting. Several members objected and expressed themselves as opposed to the action taken by the club. Mr. Ware thought it was not treating the Sacramento Club with due respect. He had supposed the matter all settled one week ago. He thought it was not showing any too much courtesy to appoint delegates to meet our brother Farmers at Sacramento during the fair. Holloway, Jr., was opposed to the idea of being bound down by a central power; we had better remain free.

Mr. Chipman said he was not afraid of his

Brother Farmers.

Would not the State Club be made up of delegates elected by the several Clubs, and can we not trust ourselves? how else can we have

united action? Mr. Cadwell thought we might accomplish all that was desired by means of circulars among the County Clubs.

Mr. York thought if anything was going to come up at Sacramento which might work detrimental to the interests of the Farmers' Clubs, that we should see to it, and by all means send delegates to speak a good word in behalf of what is right, and to work for the best interests of our club, and for all clubs.

Mr. Herring thought the idea advanced by Mr. Caldwell was a good one. What is there to prevent farmers from having

State Co-operation

By means of circulars sent from each Club, to all the others, on any important matters that may come up.

Mr. Haskell considered that if there is anything in united action or organization, that farmers need it everywhere even to a Head Central Club.

Dr. Lucky saw no danger in a central power; it is to be controlled by ourselves and may be used for our good. Mr. Cadwell did not see how we were to get out of the scrape if we once acted on it. Mr. Ware could not understand that there was any scrape, or even any danger of there being a scrape, for a State club can effect us only so far as we ratify its actions in our several Clubs.

Holloway, Jr., moved that we reject the idea of a State Club, and in its stead recommend a

State Conventional System.

Mr. Hobson favored sending delegates. He said the great trouble had been that we were afraid of each other. We need to become better acquainted. Napa has moved in this matter, and Sacramento has seconded the motion. Now let us extend our hand and unite with them in the good work.

Mr. Holloway favored the conventional system, but thought a State Convention should have power to consider only such subjects as were referred to them by the subordinate or County Clubs. The vote on the motion was a tie, and the President decided in the affirmative.

Mr. Hobson favored sending delegates to Sacramento, while Mr. Holloway, Jr., said that his motion had settled the whole matter, that by adopting it the Club had determined to have nothing to do with the Sacramento affair. Several members expressed opinions favoring, and opposing the idea.

Mr. York moved that we elect three delegates to attend the Sacramento Convention. The Chair decided that the motion was out of order, the subject having been disposed of by Mr. Holloway's motion; on an appeal being taken the decision was not sustained. Mr. York thought that the vote previously taken was equivalent to instructing our delegates to favor the Conventional System.

The election of delegates was laid over one week.

The Committee on the Sale of Railroad Bonds reported progress, expressing a hope soon to be able to make a final report. A communication was received from the Santa Rosa Farmer's Club, announcing their organization, and expressing a desire to co-operate with farmers throughout the State, in whatever pertains to their mutual good. The Secretary was instructed to acknowledge the favorable reception of the same.

Pure Grape Juice.

Mr. Hiram Pomeroy presented the Club with two bottles of pure grape juice one, two and the other three years old. It was put up hot, like canned fruit, a rag being tied over the mouth of the bottle, and sealed by covering with a mixture of resin and tallow. The juice was sweeter and nicer than when first put up, the tartaric acid having formed into crystals and settled to the bottom of the bottles.

Adjourned.

Oakland Farming, Horticultural and Industrial Club.

[Concluded from last week.]

Small Fruit Culture.

President—As there was no particular fruit stated to be discussed first, I suggest that we name a variety for that purpose.

Mrs. Carr—I think that we particularly requested some information as to the profits of fruit culture. There are some ladies present who feel interested in the preserving of fruit who are kept away by other engagements this evening; some would prefer to hear something about the cost of culture.

Strawberries in California.

Mr. Pryal—Nineteen years ago I grew strawberries and sold them in San Francisco at \$7 a pound.

Mr. Bagge—I have tried strawberries on adobe soil; I have tried the Longworths, Victoria, Jucunda and other kinds. The British Queen did the best in my soil. Others succeeded better on sandy soil, such as that about Oakland. I planted mine with narrow paths between them. I do not water them.

In answer to questions Mr. Bagge said that the Victoria were excellent for family use, but would not do for market, as they would spoil in twenty-four hours. He had planted his strawberries in January, at the time of the first rains. They had done splendidly the first and

second years. He had not tried any other kind of soil but adobe.

Soil and Climate.

Mr. Montandon—I have grown strawberries in the south of Europe. The cultivator must study the nature of the soil and climate. In certain sections they have to be planted in cool damp locations. Here they should be planted high and the land should be treated so as to allow the water to run away, otherwise the vines would be rotted. The Princess Royal was one of the best kinds; it produced long fruit and sometimes of a large size—one and a half inches in diameter. I have seen a new kind in Tuolumne, eighteen centimetres in circumference.

Mr. Hutchinson—Some of the best Eastern kinds are here found worthless. In the year '56 I planted three acres and paid \$12 per thousand for the plants. They were of the kind called British Queen. The first year I received forty cents a pound for them in San Francisco; the third year only twenty-five cents. It was in Alameda I set about 5,000 plants to the acre. I planted them in rows, about five feet apart. I cannot estimate the profits as they were planted in an orchard. After I left the business Mr. Bronkhorst had sixty acres planted, and others forty. There went frequently from this neighborhood five tons to San Francisco, but the growers could not compete with the San José men and their artesian wells. I think their damp soil and climate an injury, as it makes them too acid.

Mr. Dwinelle—I have had no experience but I have seen what others have done. The finest and best strawberries in the State have been raised in a sandy loam in the upper part of the Yosemite Valley, which has been enriched by vegetable matter, and which is so situated as to be easily irrigated from the Merced. The best berries around here are raised in Strawberry cañon. They could be irrigated from Strawberry creek. Most people think that the California fruit is largely wanting in flavor, but I believe that to be a mistake, as I have not found any great difference in those grown East.

Mr. Bagge—I had in 1863 seven acres of strawberries on the richest land in the vicinity of Oakland. The first year they did excellently. The second year they did not do so well, and the third year they were attacked by the borer.

The Borer Destroyed by Irrigation.

Mr. Dwinelle—I want to know if there is not some one here who knows how they could be kept off. I have heard that irrigation was an excellent method.

Mr. Pryal—I have watered the plants in the evening with a watering can and saw plenty of little moths about, but there were no borers where I watered.

Mr. Dwinelle—"I think it is owing to the peculiar dryness of our atmosphere that our strawberries do not possess the flavor of those at the East. I have lived in Rochester, where two kinds are principally grown—the Harvey seedling and the Hooker, and except in Yosemite, I have never seen anything in California like them."

Mr. Webster—"I do not think it is the climate, I think it is the want of suitable variety and cultivation. Many of our products are improved by repeated cultivation."

Mr. Pryal—"At Mission San José, the finest I ever ate have been grown from Kane's seedlings."

Too Much Irrigation.

Mr. Bagge—"I think that the want of flavor of California fruit is caused by too much irrigation. At San José they irrigate so much that the berries will hardly keep over night, whereas, I have sent mine to Nevada and even Victoria, B. C.

An old Frenchman who kept a stall in San Francisco, used to take my strawberries. He told me the reason people preferred the San José fruit to mine. Their flavor was not so good; but the fruit was large, highly colored, and beautiful. He said, "your people here eat with their eyes and not their mouths."

Mr. Hyatt—"I think there is too much fruit irrigated here. I believe it has given an inferiority to the grapes even in California. We do not find the same flavor here that we do in the East, no matter what the kind of ground is. Strawberries in the natural state, grow on little knolls. Sometimes the plants require water to start them, but in general the less water the better."

Mrs. Carr—At the strawberry beds of Dr. Underhill, at Croton Point, New York, the strawberries are picked at a certain hour. I think the flavor of the Eastern strawberries is owing a great deal to their scarcity. The best I have ever eaten have been wild ones of the Pine variety, from the neighborhood of Bear Valley. This kind is well known to those who have been denizens of old Boston. It is the choicest raised in New England, and is superior in many respects. They are raised by some one here, in small quantities, and are marketed with the hulls on them. They often bring 60 cents per pound while others are cheap. At Dr. Underhill's they have only two hours for going to market.

Mr. Montandon—I think that the want of flavor is due neither to irrigation nor forcing. I think it is attributable to climatic influence. I believe that both irrigation and forcing are beneficial and often necessary. I think that the insect spoken of this evening is similar to that which infests the wheat. It is called Cicadonia. It is yellow and very slender and most prolific and possesses a parasite which continues the work of destruction when it has left off.

Very often they destroy the whole wheat crop of particular countries.

Mr. Pryal—"I think it very needful that some means should be discovered of destroying this insect. I think the club ought to give a gold medal for the discovery of some method of destroying it."

Blackberries.

Mr. Dwinelle—Stated that the practice of underground irrigation as applied to the raising of blackberries was very successful. He has the finest and most prolific growth he has ever observed. The berries generally are fine this year.

Mr. Hyatt—I have not made any experiments in blackberry culture, but I have seen some grown on a mountain back of Napa, the finest I have ever seen raised in any country. They grew in patches in a light loamy soil, not so heavy as that here. We must adapt our culture of them to climate and location."

Pruning Blackberries.

Mr. Webster—I have made experiments in producing wine from blackberries. I have brought a bottle down here and would like to find out whether it has any commercial value. (A few tasted it after adjournment and pronounced it excellent). Almost any kind of blackberries can be raised without irrigation. More depends in the pruning and careful cultivation than aught else.

Mr. Webster then went into a detail of his pruning experiments which we hope he will write out more fully for the Press.

A Remarkable Preserving Compound.

Mr. Bagge here brought forward a preparation called acetine which had the property of preserving substances prepared with it in an extraordinary degree. One oz. kept 15 quarts of milk fresh 2 days, 1 oz. kept 5 quarts of soup fresh seven days, 1 oz. kept 6 lbs. of butter fresh six months. Goods could be packed by using it so as to keep fresh for any length of time in any climate on land and sea.

After some discussion, it was resolved that the subject of the preservation of fruits be continued to next meeting, Aug. 23d.

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Enterprise, Aug. 16: THE GRAIN MARKET. Our wheat fields have been harvested, but at the present low prices, the grain will only find a market where absolute necessity forces the farmers to sell. We have quite an equal amount of grain with other years, but not the usual amount per acre. The wheat grown this year is cleaner and plumper than of former years.

FAST THRESHING.—Mr. Malon Gray tells us that Mr. Dibble is doing most excellent threshing in his neighborhood. There is no neglect of work. The straw is left clean of grain, and the grain is not cracked or broken. Mr. Gray says he timed the machine for over an hour whilst at his house, and that over five bushels were threshed per minute.

WHEAT PURCHASE.—Breslauer Brothers, of this place, on Wednesday last, bought a quantity of wheat, for which they paid \$1.30 per cental.

BUILDING.—Senator Boucher and his brother are building a large granary upon their own premises, in which they intend to store their own grain until the market furnishes such prices as will justify a sale. They are sensible.

CONTRA COSTA.

Gazette, Aug. 17: THE WHEAT SHIPMENTS. The wheat shipments of the present season, from the Pacheco Landing, up to Friday of this week, aggregate 1,925 tons, although the crop of this portion of the county is only now beginning to come in.

URNS OUT WELL.—The wheat of the valleys of our district turns out well, and although less than one-half the crop is yet threshed, the procession of heavily loaded teams passing through town, to the landing, is lengthening out daily, and the roads already show the wear of heavy travel and will need repeated straw plastering in the sorest parts to stand the service of the next two months.

FAIR WEEK CHANGED.—At the request of many members and intending exhibitors, the officers of the Agricultural Society have changed the time of holding the County Fair, so that it will be one week earlier than previously announced, and be held on the 9th, 10th, 11th, 12th and 13th days of September.

EL DORADO.

Democrat, Aug. 17: EXTENSIVE.—Our citizens hardly appreciate the extent of the business of digging the fibre of the soap root carried on by two of our business men. Mr. Landecker, the first to engage in the business here, has already taken out and shipped, or has in store in this city, the present season, over 400,000 pounds. He has now engaged in digging it eighty-nine men. Mr. Mierson, until Thursday last employed thirty men. He

has, thus far in store and shipped about thirty tons. He intends bringing this up to 200 tons the present season. All of his shipments go to France. What Landecker gets is all worked up on this coast. Much credit is due these gentlemen for opening up this new industry.

FRUIT AT COLOMA.—The different fruit growers at Coloma are shipping now from two to three tons per day, mostly to different parts of Nevada. The crop of peaches is short, but large and of fine flavor. The grape crop will be large, and of an excellent quality.

Auditor's statement, showing the number of acres of land, the value of real estate, the value of improvements on real estate, the value of personal property in the county of El Dorado: Number of acres of land, 173,313; Value of real estate, \$407,581; Value of improvements on real estate, \$913,448; Value of personal property exclusive of money, \$931,598; Amount of money, \$179,130; Total value of all property, \$2,431,757.

After much vexatious and costly delay, the city authorities have received information that their application for a patent to the land on which the city stands, has been granted. As soon as the document arrives steps will be taken towards giving deeds to those entitled to receive them.

FRESNO.

Expositor, Aug 17: COMING IN RAPIDLY. The flow of immigration to this county still continues with unabated volume. The population of this county will nearly double during the present year, and it would not surprise us if upwards of 150,000 acres of land were cultivated in this county next season. There is no section of the State so fully commands the attention of the public at this time. As an evidence of the value of our lands, we notice that legal contentions are beginning to spring up about them, in different forms.

Fruit has not been overabundant in this section, yet this season, and what has made its appearance has been of an inferior quality.

Barley is dirt cheap on King's river, it is selling, we are informed, at from five to seven bits per hundred. The farmers cannot afford to ship to San Francisco, or Stockton at the present grain rates.

The wool growers of this county for the past few weeks have been busily engaged in shearing their lambs.

There are no fish in the San Joaquin river this season. We do not know how to account for their absence.

PNEUMANTER.—At the date of our last issue we were at "scorching" heat, but since then the weather has moderated, and is again cool and enjoyable, at which, "ye denizens" of Fresno county rejoice muchly.

We learn that Mr. Frank Dusey had a narrow escape of a personal encounter with a bear, in the mountains a few days since. He was engaged in hunting up a range for his sheep, and came upon a bear on a level flat. Bruin made for him, but his dogs tackled his bearship in the rear, and as he turned at them, Mr. Dusey made his escape. He didn't care to "stay always" in that vicinity.

KERN.

Southern Californian Aug. 15: ENCOURAGING.—From all quarters come cheering accounts of abundant crops. Much more wheat, barley and hay have been harvested in the valley than ever before.

PRODUCTIVE.—Riding past Col. Baker's farm the other day we observed a splendid crop of corn already taller than the fence and in blossom, where but a few weeks ago there waved a magnificent crop of barley.

A CHANCE.—A most delightful and grateful change has transpired in the atmosphere since our last. The mercury in the thermometer has receded within reasonable bounds, and we are cool and comfortable at 85 Fahrenheit—a strong contrast, certainly, to the sweltering, broiling heat of a week ago.

SACRAMENTO.

Bee, Aug. 17: STATE FARMERS' CLUB.—The Sacramento Farmer's Club has proposed that all the Farmers' Clubs in California meet by delegates in Convention at Sacramento September 23—during the State Fair. And in pursuance of this the Farmers' Club of San Joaquin took action at its last meeting and empowered the Chair to appoint five delegates to such State gathering. The object is to form a State Farmers Club.

SANTA CRUZ.

Sentinel, Aug. 17: HUCKLEBERRIES.—In the vicinity of Round Potrero, and all along Boulder creek and Rock creek we noticed abundance of this delicious fruit. At R. C. Hito's place they were drying in

[Continued on page 124.]

The Bridal Veil Fall of Yosemite Valley.

But what has this fall and the beautiful valley of the Yosemite to do with agriculture, that we

costs, that they may take one look at the great, grand valley of Yosemite before they die; so let our rural people whose homes are at the threshold of so much of grandeur, sublimity and beauty, make it as much a part of their lives

rest: then is the time to roll out the family carriage and big wagon, store the same with all the luxuries and viands that only a farmer's wife knows best how to prepare, throw in the blankets—some would think it a sin to take

and exhilarating climate of the mountains; you feel buoyant as with a new life, you look upward—for you cannot look downward when you are in the valley of Yosemite—upon precipices of grand old walls of rock three thousand feet



"POHONO," OR BRIDAL VEIL FALL, YOSEMITE VALLEY.

should occupy nearly a whole page of the Rural in illustrating it? We will give our view of the question.

While pleasure seekers from the remotest borders of civilization, in an annually increasing throng, are wending their way over continents and oceans, and pouring out their wealth of gold upon the means of transit and attendant

to see it once a year, as do the hosts of foreigners once in a life-time.

When the great labors of the harvest are over and the weary toil of months under a sun so nearly tropical, that the very earth we tread is heated, and the parched plains are draped in the brown livery of rainless weeks and months, and the whole physical man seems to call for

along a few bottles of California wine—and with such little paraphernalia of the kitchen as seems necessary where quail and grouse and mountain trout abound, and with the best horses of the farm, and even the old house dog, start on a two three week's excursion to Yosemite.

You now exchange the hazy, sultry enervating heat of the low country for the pure air

high. You view the BRIDAL VEIL as it hangs in misty beauty from Nature's granite brow, and you see the NEVADA and the VERNAL falls that leap from out the skies, with their ever shifting spray of broken waters tumbling to the vale below, that nestling there, form beautiful lakelets so calm and placid they seem made up of waters only too glad once more to rest.

Recuperated in strength, as if with a new lease of life, you return to your lowland valley home, vigorous for a renewal of the battle of farm life. Every Californian, old and young should visit Yosemite, should know from personal examination something of the beauty, grandeur and majesty of a place, that all the outside world are sighing to see.

The following description of the Bridal Veil fall, we copy from "Hutchings Scenes of Curiosity in California."

It is impossible to portray the feeling of awe and admiration—almost amounting to adoration—that thrills our very souls as we look upon this enchanting scene. The gracefully undulating and wavy sheets of spray, that fall in gauze-like and ethereal folds; now expanding, now contracting; now glittering in the sunlight, like a veil of diamonds; now changing into one vast and many-colored cloud, that throws its misty drapery over the falling torrent, as if in very modesty, to veil its unspeakable beauty from our too eagerly admiring sight.

The stream itself—but forty feet in width—resembles an avalanche of watery rockets, that shoots out over the precipice above you, at the height of nearly 900 feet, and then leaps down, in one unbroken train, to the immense cauldron of boulders beneath, where it surges and boils in its angry fury, throwing up large volumes of spray, over which the sun forms two or more magnificent rainbows which arch the abyss.

The river has its origin in a lake at the foot of a bold, crescent-shaped, perpendicular rock, about thirteen miles above the edge of the Pohono Fall. On this lake a strong wind is said to be continually blowing; and, as several Indians have lost their lives there and in the stream, their exceedingly acute and superstitious imaginations have made it bewitched.

"Pohono," from whom the stream and the waterfall received their musical Indian name, is an evil spirit, whose breath is a blighting and fatal wind, and consequently, is to be dreaded and shunned. On this account, whenever, from necessity, the Indians have to pass it, a feeling of distress steals over them, and they fear it as much as the wandering Arab does the simoons of the African desert; they hurry past it at the height of their speed. To point at the waterfall, when traveling in the valley, to their minds, is certain death. No inducement could be offered sufficiently large to tempt them to sleep near it. In fact, they believe that they hear the voices of those that have been drowned there, perpetually warning them to shun "Pohono."

USEFUL INFORMATION.

Changes of Climate.

Recent upheavals in circumpolar lands are corroborated, in the opinion of Mr. Howorth, in *Nature*, by many evidences of change in climate. An increase of land at the poles, at the expense of the water, will tend to intensify the extremes of temperature in winter and summer, thus making the climate much more less constant and much more severe.

At the present time the name of Greenland is little less than a satire on the country. But we have already referred to Mr. Whympers' collections of fossil leaves and fruits from the neighborhood of Disco Island, which indicate a vegetation of southern character and luxuriance for this land above the 7th parallel of latitude in former times. In later times evidence of emigration on the part of Esquimaux from north to south is found in the fact that they were not known as inhabitants of Greenland to the Saga writers; and also in the fact that North American Indians, along their frontier, have a uniform tradition that the Esquimaux were formerly not neighbors of theirs, but that they came across the sea from islands beyond. Moreover, the Esquimaux of both shores of Behring's Straits have been constantly drifting southward, and are only recent occupants of their present areas.

Iceland is well known to have become harsh and untenable in its climate since the days of Norsemen. Ancient Icelandic documents show that on the arrival of the Norwegians, and for centuries afterwards, extensive forests grew in different parts of the island, and furnished the inhabitants with wood both for domestic and nautical purposes. Now these have either wholly disappeared or have dwindled down to mere underwood of birch, willow and mountain ash. Grain, too, was once largely raised there. Now the climate is too severe for the growth of any sort of grain.

The old Norse word for barley still lingers in names in Norway where barley grows no longer. In Scotland many places show signs of the plow for cereal culture where arable farming is unpracticed at the present time. Even in England, as far south as Lancashire, large districts that were once covered with forests are now entirely bare of trees, because trees cannot be made to grow there. "The Romans planted vineyards and made wine in parts of England where the vines will now hardly grow." Beyond the Dwina of Northern Russia there is a large area formerly known as Biarmia, studded with the graves and other remains of a prosperous people, whose wealth and civilization are much dwelt upon by the Saga writers.

Others found there these agricultural inhabitants, with their tilled fields. Subsequently they moved westward and southward into Finland.

In Siberia Hedenstrom found on the tundra among steep banks of lakes and rivers large birch trees, complete with bark, branches and roots, apparently perfectly preserved, yet so thoroughly decayed that on being lighted they would glow, but never burst into flame. The first living birch trees appear now quite three degrees to the south, and then only as shrubs. In a cliff beyond the Malaija Kurspataschnaja river birch roots were seen as fresh as if only just torn from the trees, while the nearest woods are seventy miles away. The limit of trees, therefore, in this country, in quite recent times, has been pushed far to the south, without doubt, by increased severity of climate.

Why the Sun Makes Round Spots.

Most or all of our readers have probably noticed often, and many doubtless have wondered at the fact that the sun, when shining through the slats of window blinds or other elongated or irregular apertures into a dark or moderately dark room, always falls upon the opposite wall in a series of round spots, instead of taking the form of the opening as artificial light does. The phenomenon has been a puzzle to even many philosophical minds.

We have often noticed the appearance, and admired the elegant and commingling circles of bright light that are pictured upon a white wall when a single opening is left in a blind, just as the sun is setting and have several times sought for an explanation, but never met with a satisfactory one until we found the following in a number of the *Manufacturer and Builder*: When light comes through a small hole into a dark room, it forms on the opposite wall an image of the object from which it proceeds, no matter what the shape of the hole; as, now, the sun is round, the image formed by its light will be round also. If the sun were square or triangular, its light under the above circumstances would form square or triangular spots. As it is, the round spots are real images of the sun of which fact you can convince yourself by watching such images on a day when floating clouds cover up the sun from time to time. You will see the images of the luminous edges of the clouds around your round sun-spots and their dark masses covering the same; and when you use a single hole, these appearances are very striking. The shape of the hole is of no consequence, provided it be small and of a diameter of one quarter of an inch or less.

If there are any of our readers who have never witnessed this phenomenon, it is well worth the while to seek a convenient place and arrange for it. The best impression is made in a bright day, when the sun is about one or two hours high and the room so situated that the sun's rays will pass through the aperture, directly across the room, to the opposite wall. All other avenues of light should be closed.

HOW TO TEST PURE GLYCERINE.—Thomas Koller gives, in a German journal, the methods for detecting the impurities of glycerine. Pure glycerine is neutral, and leaves only a slight residue when evaporated in a porcelain capsule. The adulterated article may leave considerable black residue, and react acid. Pure glycerine, when cautiously mixed with an equal volume of oil of vitriol, is not browned even after the lapse of several hours; the impure often browns immediately. A solution of oxalate of ammonia does not even produce a cloudiness when mixed with pure glycerine, but may give a precipitate with the impure. Pure glycerine, treated with nitric acid and nitrate of silver, yields no precipitate; sulphide of ammonia sometimes gives a black color in adulterated glycerine. Pure glycerine, in large and small quantities, is as clear as water; impure often shows different shades of color, according to the extent of its contamination. Pure glycerine rubbed between the fingers gives no greasy feeling, while the impure resembles fat. The freezing point of pure glycerine is near zero, while the impure may become solid at the same temperature as water. For the purification of glycerine, add ten pounds of iron filings to every 100 pounds of the impure liquid, and occasionally shake. In a few weeks, a black gelatinous sediment will settle and the supernatant liquid will be perfectly clear, and can be condensed by evaporation.

AN ENORMOUS RUBY.—Prof. Shepard, of Amherst College, has recently made a valuable addition to his splendid cabinet of minerals. It is a ruby of enormous size, the largest in the world, weighing 316 pounds. It was discovered somewhere in the South, and was about to be taken to Europe, but Prof. Shepard made a bid of \$300, and secured it.

INDIA RUBBER.—There are in America and Europe more than 250 manufactories of india rubber articles, employing some 500 operatives each, and consuming more than 20,000,000 lbs. of gum per year.

TO PREVENT GLUE BECOMING SOUR AND MOULDY.—The addition of a quantity of carbonate of soda just sufficient to give a strong smell to the glue will accomplish the desired result.

GOOD HEALTH.

Sweating in Fever.

We make the following extracts from a communication "by a physician" in the *Prairie Farmer*:

There occur many cases of slight ailment, among all enlightened people, which it is not supposed requires the doctor's care, but which the friends of the patient are led to suppose may be cured by a good sweating. Among some people this notion prevails more than among others; some, it is true do not regard it with much favor; some have sweating for the sick, as the saying has it, "on the brain."

The little ills which are believed to so readily succumb to the sweat are cases in which there is more or less fever—there are exceptions, but this is the rule.

There is a certain sort of good sense in this popular belief. What is the office of the function of sweating in the economy of the healthy human body? Surely, by evaporation of the moisture, to cool the body. In fever there is increase of temperature, after great heat, and more than ever some cooling is needed, hence the sweating is salutary.

Besides the process is seldom begun in a patient with a fever until that very excitement on which the fever depends is abated—the patient must often become relaxed and tranquil before he perspires. This relaxation is of course highly beneficial, as it is the abatement of the fever, and sweating comes because of it. It doesn't matter whether the sweat cures the fever, or whether it is simply a sign that it is subsiding; if it never comes except with this consummation it may be proper to do anything to make a man sweat; like the doctor who was sure if his patients could all be made to have fits he could cure them, and so threw them into fits by his medicines first. If a man always recovers from a fever when he sweats—why not then, when he has a fever, make him sweat?

Another good which some conceive to come from the sweat, is the "opening of the pores" of the skin through which various impurities in the body may find exit. How much philosophy there is in this view we will not stop to explain—only to say there isn't much.

We believe many attacks of slight fever have been abated by this measure. Early resorted to, it will not cut short any of the severer types which run a regular course of so many days, by law of their own, and we are positive to have seen cases of this sort that, by the means, and more by the delay it led to, were injured by the stereotyped sweat.

But the acute troubles most likely to receive benefit from the prompt use of this measure are inflammation within the chest—chiefly of the lungs, (lung fever or pneumonia), pleura (pleurisy), and bronchial tubes (bronchitis) in all of which there is more or less fever. We know of certain hospital wards in which patients with these diseases are at once on their admission given a sweat, and we are not certain that the treatment could be bettered.

How to Make One Sweat.

The best way to make a man sweat is to make him warm and fill his blood vessels with water. If his heat, however, is too great he will not perspire and he must be cooled down to the sweating point.

The venerable practice then of putting the children to bed with abundance of clothing and dosing them with pints of mint tea, sage tea and ginger tea is very good. In some cases it is inferior to the so-called rum-sweat, when a patient is a little sick and is not suffering much, so that he can lay in bed with loads of clothes piled on to him and drink all that volume of fluid without complaint, the former measure, if you have determined he must sweat, is to be advised. But if without great heat he is suffering pain, especially if it is in his side, if he is restless and fretful or nauseated, and his head snaps with pain, don't ask him to undergo the torture of his lying in bed. Put him in a chair, with all his outer garments taken off, surround him with several thick bed quilts or "comforters," which shall encircle tightly his neck and fall evenly to the floor, separating the space within and that without the clothing by well-nigh an air-tight wall.

Now place beneath his chair an alcohol lamp, burning high, and have ready an abundance of water for him to drink when he calls for it. In a few minutes he will sweat profusely. After perspiring fifteen or twenty minutes he should be put into a warm bed and covered with enough clothes to keep him from a chill, and he will not unlikely go to sleep and wake up by and by much refreshed.

If it is desired to give, in addition to the other measures to induce sweating, some medicine that shall help the process, we have just one drug to recommend, namely, *Dover powder*. This is more to be advised, if coupled with other symptoms referred to, there is much pain. Given in a liberal dose, with warmth and plenty of unstimulating fluid to drink, it is almost sure to cause profuse perspiration.

A liberal dose is ten grains; a medium dose may be five to eight grains for an adult; the dose should be, of course, proportionately less for a child.

ONE THOUSAND dollars damages was recovered from a druggist in Jefferson county (Ky.), whose clerk had put up cantharides instead of stramonium in a prescription for piles. Extreme suffering resulted from the application.

The Eucalyptus in Medical Practice.

Dr. Wooster writes to the *Pacific Medical Journal* that he is constantly receiving letters from various sources, both in this and the Atlantic States, asking for information about the medical qualities of the *Eucalyptus Globulus*. In addition to the facts already communicated to that journal, he submits a report of 135 cases treated exclusively with fluid extract of *Eucalyptus Globulus*. The fluid extract used was prepared by Dr. Coleman, Resident Physician at the U. S. Marine Hospital, and he has furnished the following tabular statement, which the *Medical Journal* pronounces "altogether reliable."

The report is certainly a very remarkable one, embracing a wide range of diseases, and so important that we give it in detail as follows:

Remittent Fever,	treated, 5;	Cured, 5;	Improved, --
Chills and Fever,	" 19;	" 19;	" --
Typhoid Fever,	" 9;	" 9;	" --
Nephritis,	" 4;	" 3;	" 1
Diuresis,	" 10;	" 7;	" 3
Incent'ce of Urine,	" 3;	" 3;	" --
Vesical Catarrh,	" 27;	" 25;	" 2
Blennorrhagia,	" 13;	" 10;	" 3
Valvular Dis. of Heart,	" 7;	" 0;	" 7
Dysentery,	" 4;	" 3;	" 1
Chronic Diarrhea,	" 13;	" 9;	" 4
Gonorrhea (syphilitic),	" 15;	" 10;	" 5
Dropsy,	" 6;	" 3;	" 3

It appears that out of the whole number of cases (135) 106 were cured and 29 improved.

S. F. Medical Society on the Eucalyptus.

At the recent meeting of the San Francisco Medical Society, Dr. Stout exhibited an ingenious apparatus for the inhalation of medicated vapors. The medicated liquid is kept boiling by a spirit lamp and the vapor conducted through a tube. He had used the eucalyptus in this way, employing the tincture mixed in water. It was preferable to the common atomizer, because of the warm vapor, which is not only medicinal in itself but promotive of absorption. The eucalyptus he had found very beneficial in bronchial and pulmonary affections. Dr. Stout also distributed some *cigarritos* made by enclosing the powder of the leaves in a roll of paper, which were puffed by the members with apparent satisfaction.

Dr. Pigné-Dupnytren testified to the virtues of eucalyptus, which had been fully tested by himself and Dr. D'Oliveira, in the French Hospital. It had been found highly serviceable in affections of the larynx and of mucous membrane in general; also as a tonic. In France it was much used as a febrifuge and by some considered a substitute for cinchona. The leaves growing near the trunk of the tree were the most aromatic. A large number of the trees had been planted around the French Hospital for sanitary and medicinal purposes. The leaves, in drying, emitted a large amount of balsamic exhalations, capable of causing headache in persons much exposed to them, as he had experienced in his own house.

THE SALUBRITY OF NAPA.—Dr. T. M. Logan, Secretary of the State Board of Health, having been requested by Governor Booth to give his opinion of the Juares tract near Napa, as a site for a Branch State Asylum, has given a very favorable reply in every respect, except that the Commissioners should have bought more than 200 acres of land. He thinks that no part of the State north of Santa Barbara has a more equable or more salubrious climate than Napa. The winter, it is well-known, is mild, but there was a question about the summer, and he has observations made at 2 p. m. on the first four days of this month, showing that the highest heat in Napa was 80°, and in Sacramento 99°, the average difference of the two places in the four days being 19°. At Suscol, only four miles from Napa, the mean temperature of July is 61°, at Sacramento 71°, and at San Francisco 59°. Typhoid fevers are rare at Napa; intermittent and epidemic diseases have never been observed there; and the proportion of lunatics sent to Stockton has been less, according to statistics, examined by Dr. Stillwagon, than from any other part of the State. We congratulate Napa on its magnificent record.—*Alta*.

VACCINATION AS A CURATIVE FOR SMALL-POX.—Dr. Farley, in the *London Lancet*, asserts that he is in the habit of vaccinating every case of small-pox that comes under his care, with the effect of arresting the disease in nearly every case. The common method of operating is not efficacious, and it is necessary to inject the lymph into the circulation. For this purpose he uses "a hollow needle with a bore sufficiently large to admit of the introduction of a vaccine tube. The process consists in passing the point of the needle charged with a tube of lymph under the skin, and blowing [forcing?] "Blowing" would be a dangerous process.—*Ed. Press.*] the lymph directly into the blood."

THE HAY FEVER.—It is said that this very enurious and vexatious disorder, a sort of autumnal catarrh, has never made its appearance in California. This disease makes its annual return in many of the Eastern States with the most remarkable regularity, often attacking the same persons regularly upon the same or nearly the same day of the month, from season to season.

FEMALE MEDICAL STUDENTS.—It is said that thirty young women attend the University of Zurich. Somebody who don't believe in women's rights—to study medicine—says that they crowd the young men out of the best seats at the clinics, and smoke, of which the professors complain; while the male students have petitioned the authorities for equal rights.



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SAN FRANCISCO:

Saturday, August 24, 1872.

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PURE-BLOOD STOCK SALES.—It is with pleasure we note the arrival, overland, of 380 pure Spanish merino bucks and ewes, recently received by Messrs. Saxe & Jewett, from the best folds in Vermont, and which we learn, they are selling at very reasonable prices, at 9th and Market street. These gentlemen will exhibit at the Bay District Fair next week, Merinos and Cotswolds, Berkshires and Chester White hogs and pigs; all their stock is guaranteed pure-blood, and is from Vermont and Kentucky. We may add in this connection that Mr. Jewett, (of the above firm,) is of Jewett Bros., of Kern county, who have been, and are largely engaged in breeding fine sheep for the past 12 years in our State. Col. Saxe has, for the past two years, been importing sheep, cattle and hogs from Kentucky, and informs us he has a young herd of some 72 head, yet to come this season, together with some 45 head of pure Angora goats, also more of his famous Cotswold sheep. These men are certainly doing our breeders of fine stock a great service, and we hope to see them well patronized, as every individual who buys, will doubtless be the most profited. It is plain that cattle and sheep imported in large lots, can be afforded at less prices than when bought in smaller lots, among the eastern breeders. These men who are expert judges of fine stock, will likely import none but the best, as their interest is only enhanced by selling such.

DYNAMOMETER.—They are to have a grand trial of plows at the Stockton Fair, and a correspondent wants to know if a dynamometer—an instrument for determining the draft of plows—can be obtained in San Francisco or elsewhere in California.

PROF. GILMAN, the newly elected President of California State University, is expected to arrive in San Francisco to-day, August 24th.

Farmers' Clubs—Their Objects.

During the past eighteen months and mostly within the past year, there have been organized farmers' clubs in the counties of Santa Cruz, Santa Clara, Sacramento, Contra Costa, San Joaquin, Sonoma, Napa and Alameda.

We are also informed that steps are being taken for the organization of similar clubs in the counties of El Dorado, Fresno, Yolo, Butte, and several other counties, and it is probable that every county in the State will, within the next twelve months, have its farmers' club fully organized and holding its weekly or bi-monthly meetings.

The principal objects of these organizations as expressed in the several constitutions, and as developed in their discussions and proceedings, are the dissemination among their members of useful information touching the several branches of agriculture by the relation of the practical experiences of the members. The encouragement of the introduction and cultivation of new and valuable agricultural products and manufacturing industries, and the protection of the interests of the husbandman generally as against the impositions practiced upon them by commission merchants and middle men, by money lenders and grain buyers, by railroad and steamboat companies, and by owners and charterers of steamers and vessels upon the high seas plying between our own ports and the ports of the countries where our surplus products must find buyers and consumers.

Social and Intellectual Improvement.

The isolated position of the farmer and his family, their removal from the pleasures and advantages of frequent social intercourse with their friends and neighbors, and from easy access to lectures, libraries and other facilities for social and intellectual improvement, are among the greatest objections to a life residence in the country. Hence it is that the most gifted of the farmers' sons and daughters, when they realize the disadvantages of their position, leave their homes and the quiet occupations on the farm to find more sociability, more active, if not more agreeable, employment in the town and city.

To counteract this tendency of the young to leave the country, to introduce more sociability among the farmers and their families, to give greater scope to intellectual improvement and to induce emulation in the improvement of the farm, the adornment and beautifying of the home, and to render country life more desirable and attractive generally we know of no plan better calculated to succeed than the organization and proper management of farmers' clubs, in every agricultural center throughout the State.

To accomplish these objects to their fullest extent, however, it is evident that the wives and sons and daughters should be regular attendants and participators in the proceedings of the club. If the farmer himself needs the opportunities of social and intellectual improvement which the club affords, does not his wife, sons and daughters stand in need of the same opportunities?

If these meetings and discussions are necessary to stimulate the farmer to the improvement of his farm and home, are they not equally necessary to secure the sympathy and hearty co-operation of his wife and family in these improvements? Let the wife and sons and daughters become members and regular attendants and participators in the business and proceedings of the club, and its efficiency in the accomplishment of one of the principal objects of the organization will be more than doubled, and the young will love and seek the pleasures and advantages of a country life, free from the temptations to vice so sure to beset them in the towns and cities.

Commission Merchants and Middle Men.

One of the greatest drawbacks to the success and prosperity of the farmers of this State, as a class, is found in the systematic imposition practiced upon them by commission merchants and middle men. One can hardly look on and see these impositions practiced as they are in every community—in every town and city, without becoming convinced that we have but very little honor and fair dealing when fraud and deception promises greater gain, and when the isolated position of those against whom they are practiced is a guarantee against detection and punishment.

There may be some honorable exceptions,

perhaps enough to prove the general truth of the rule, that our commission merchants who seek to sell the produce of the farmer, to be the medium between the producer and consumer, for an agreed small compensation, are the greatest enemies to both classes they pretend to serve.

The dealer who will receive one man's produce to be sold at the best advantage for a commission, and who buys similar produce of another man to sell for a profit, and thus becomes the active competitor of his customer, with all the advantages in his favor, is not worthy the name of merchant and should not be countenanced among honorable men, and yet we are too well assured that this is a common practice.

The dealer who will receive a box of fruit, or melons, or any small package of any produce from each of a half dozen different producers, shipped to him from the same place and by the same conveyance, and at the same time, and convey them all to his store on one dray load, and then charge each customer for a full load and full wharfage fees, is practicing a species of petty fraud, too contemptible to be sustained by any course of honorable reason, and yet we are assured that this is a very common practice of men who call themselves commission merchants.

The dealer who will hold on to perishable articles in his hands until they decay and are lost to the owner, in order to keep up the price to a point at which thousands of poor people cannot afford to buy it, is an enemy both to consumer and producer, and should not be countenanced in any community, and yet this practice is charged as one of every day occurrence.

Against such practices the farmers complain and to prevent them they are organizing their Farmers' Clubs, and will continue to organize until they are accorded justice and fair dealing. No argument is required to prove the necessity or justice of combination against such imposition. The mere statement of their grievances carries conviction to every candid mind, and shows the importance of united and determined action for self protection.

The Horticultural Fair.

We are pleased to note that the preparations which for many weeks have been in progress in anticipation of a grand Horticultural and Floral Exhibition by the Bay District Horticultural Society, are at our present writing, rapidly drawing toward completion.

Already the Hall, which is situated on Stockton street near Post, presents an appearance as though a Fairy scene was about to be enacted for the amusement and entertainment of our citizens. To give a description doing justice to the elaborate adornment of the Hall of exhibition, would require more space than we can devote to it.

We can speak, however, in general terms. The main floor of the hall is principally occupied by stands of all sizes displaying an infinite variety of beautiful flowers. There are two grottos at the further end of the hall, surmounted by two mimic castles connected by an arch on which is inscribed:—"Art and Nature," in letters of gold.

The grottos contain fountains and cascades of water, that from light reflected or passed through colored glass, present a brilliant spectacle. Each side of the hall is decorated with imitation rock work, which with the grottos are rendered attractively beautiful by running ivy and creeping plants growing from the crevices.

The cross beams of the roof and under it, are made to represent the tangled foliage of a tropical clime, and lighted from jets of gas from the points and angles of the foliage. The grand orchestra will contain 72 musicians, and will be occupied every evening.

For want of actual space to put it, we must omit further notice, except to direct the attention of our readers to the Society's advertisement.

GRAPES AND WINE.—Thirty persons from the two counties of Napa and Sonoma are already indicated as exhibitors at the Wine Growers' Exhibition at Sacramento, to be held in connection with the State Fair. Will any other counties do as well?

FARM MACHINERY.—By the use of machinery invented within the past twenty years, the farmer's boy can often do the work which formerly required the labor of ten men.

They Don't See It.

When our people first poured into California under the impulse of the gold discovery, they could see nothing in the broad scope of our treeless valleys and plains, in the least degree inviting to the agriculturist, except so far as stock growing might be considered a branch of agriculture. A few years, however, dispelled the illusion, and California has become a great fruit, vegetable and grain growing State, whose renown is world wide.

The same illusion now attaches to a large number of those of the Eastern States, who visit California to see for themselves the proof of the marvelous stories that they have so long heard, of the wonderful variety and quality of our fruits, and the productiveness of our soils.

Spring Time in California.

All of those who are able to visit us in early spring, or from the first of March to the first of June, are delighted with what they see, as they emerge from the cheerless plains of the middle continent and the chilly peaks of the Sierras, and in the space of three or four hours plunge into a sea of verdure and an atmosphere in which the fig and the orange are at home, and wild-flowers and waving grain carpet the plains.

They visit our valleys, then teeming with a vegetation in the strength of its luxuriance, and they see our hillsides wrapped in their viny mantles; or visiting the market places of the cities, find a profusion of fruits and vegetables of unsurpassed excellence; then after taking an admiring look at Yosemite, the Big Trees and other beautiful scenery, go back to their homes, repeating the stories they had heard before, of California, her great fruitfulness and loveliness.

Summer in California.

But let the same visitors come, for the first time, from the green prairies and timber-lined rivers and verdant forests of the great Middle West, from the first of June to the first of October or November, and dropping from the cool atmosphere of the mountains down upon the sere plains, dancing with their strange mirage, and boundless stubble fields all aglow with quivering heat, and they see no green thing except here and there a tree that sends its roots deep below the earth crust, and they wonder where they are to see what others have seen and praised.

But ere long they are found visiting the markets of the cities, only to have their curiosity increased. Here they see fruits in such prodigious abundance, variety and quality, and appearing to them, in many instances, both in and out of season, and all without insect hurt or blemish, that now a deeper mystery is presented in the question of, where are all these magnificent fruits produced?

Our Answer.

We might enumerate and they might visit a thousand cozy fruit farms in as many beautiful and fertile valleys, where can be found a perfect wealth of green nearly the year round—quite away from the great lines of thoroughfare and never seen by the traveler in his hurried railroad rush over the dry plains and arid pastures of the great middle valleys—where these fruits and a great many more that never reach the markets are grown, and so easily and abundantly that it is a question with many, as to whether the limit of demand will not soon stop short of the vast and rapidly increasing production.

And thus it is that many visitors both come and go, during the summer "of our discontent," the most unpleasant and comfortless season of the whole year, and declare our condition an anomaly; as blessed with a perfect wealth of production, unequalled in excellence; but if we claim a desirable climate or a beautiful country apart from our grand mountain scenery—they don't see it!

Oakland Farming, Horticultural and Industrial Club.

At the semi-monthly meeting, Friday evening, Aug. 23d, the subject of preserving fruit will be discussed. The President, Prof. E. S. Carr, promises to speak of the general principles governing the preservation of vegetable food. Experiments will be made by the inventor, showing a new mode of preserving fruits in their natural condition by partially exhausting the atmosphere from the vessels in which they are contained.

ANGORA GOATS.—We would direct the attention of persons desirous of increasing their stock of pure-blooded Angora goats, to the advertisement of Thomas and Shirland, in the Press of this week.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.)

FOR THE WEEK ENDING JULY 16TH.*

PILE DRIVER.—John T. Baldwin, Petaluma, Cal.
PRINTING-PRESS.—Amos H. Bangle, Brooklyn, Cal.
COMPOUND IMPLEMENT.—Evan A. Edwards, San Buenaventura, Cal.
PORTABLE GARDEN-SPRINKLER.—John Gibson, San Francisco, Cal.
TUCK-CREASER FOR SEWING-MACHINES.—Justin J. Graff, San Francisco, Cal., assignor to himself and Francois Smith, same place.
GRIPPING ATTACHMENT FOR ROPE-WAYS.—Andrew S. Hallidie, San Francisco, Cal.
FILTER.—Prosper Huernie, San Francisco, Cal.
HYDRAULIC TELESCOPIC PLATFORM-ELEVATOR.—Judah Parker, and Isaac Cook, San Francisco, Cal.; antedated July 11, 1872.
ICE-MACHINE.—Samuel B. Martin and John M. Beath, San Francisco, Cal.—Patent No. 127,180, dated May 28, 1872.

FOR THE WEEK ENDING JULY 23D.

GAITER-SHOE.—Adolph Baron, San Francisco, Cal.
APPARATUS FOR COLLECTING THE PRECIOUS METALS IN MINING SLUICES.—John B. Beers, San Francisco, Cal.
TOP.—Nathaniel D. Clark, Oakland, Cal.
PROCESS OF MANUFACTURING, LAYING, AND FINISHING ARTIFICIAL-STONE PAVEMENTS.—George L. Eagan, San Francisco, Cal.
BELT-SHIFTER.—Samuel Forsythe, San Francisco, Cal.
SEWING-MACHINE.—William H. Hanna, Petaluma, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

*The patents are not ready for delivery by the Patent Office until some days afterward.

Indian Bridge Architecture.

The accompanying picture is a rough sketch of a style of bridge building rarely met with. It appears to our eyes, somewhat rude and primitive in construction, and yet when we consider that it is made by Indians, and entirely without the use of iron in any form, and no tools but knife and hatchet, we are inclined to think that even some of our own young engineers might be puzzled to do better with the same materials.

This bridge, which spans a mountain gorge, through which runs the Hun Kun river, on Grease Trail in British Columbia, is 98 feet in length, as we learn from Dr. Geo. Chismore, who furnished us with the sketch just before leaving San Francisco with Mons. Pavy on his exploring expedition for the open polar sea.

This bridge was built on account of its great commercial importance to the Indians in the transportation of fish, oil and other commodities from the coast along the important trail mentioned to the great interior, thus saving a vast circuit in miles.

The bridge was made by felling trees so that their tops extended out over the chasm on each side. From the ends of these by means of a chord, light poles were drawn across and firmly bound to the fallen trees by raw-hides, completely spanning the chasm, then larger poles were securely bound to the others.

Afterwards the uppermost timbers were placed in position, their butts heavily weighted with stones, and their tops connected and fastened to the lower stringers by crotched limbs hanging from the upper and bound to cross-pieces under the lower stringers, binding the whole structure and these cross-pieces supporting a foot-log in the center, hewn from trees; the whole making a structure of sufficient strength to bear up the largest Indian with a pack of 200 pounds weight.

There are other bridges of this kind in the Indian country, some of which have stood for a century.

THE MELON MARKET.—There are large supplies of both watermelons and canteleups now on the market, the latter already perishing by tons, because too ripe for use. Not because there are no consumers, but because they are held at too high rates.

Canteleups that net the producer from three to five cents apiece, are sold from ten to twenty cents, or at a profit of 300 or 400 per cent. on cost. It would seem as though middle men might be satisfied with making one hundred per cent. upon their consignments and purchases, and sell two or three times as many as they do; but they probably know their own business best.

Report of the Opening Address Before the Bay District Horticultural Society.

By E. S. CARR, M. D., L. L. D., PROF. AGRICULTURE AND HORTICULTURE, UNIVERSITY OF CALIFORNIA.—SAN FRANCISCO, AUG. 22D, 1872.

It is a matter for congratulation that the people of the Pacific Coast, and especially of San Francisco, have learned so to esteem their displays of art and industry as to warrant such annual exhibitions as will most fully illustrate our performance and possibilities. It was a happy conception to adopt the European winter garden, a place combining instruction and innocent amusement to our local circumstances, our more modest and humble beginnings, and to make the competitive Horticultural Exhibition its chief specialty.

For so great a public benefit I have no doubt the public will show substantial appreciation, but the results of the effect will not all show in your columns of profit and loss, the most valuable of them are found in intangible influences by which Beauty proves her divine origin and claim to our homage and devotion. Far exceeding our expectations, it shows not only what nursery-men and florists can do, in the way of enlarging the boundaries of Nature, and making her obedient to the demands of Art, but it shows that where yesterday the miners' cabins dotted these barren sand hills, there is growing up a substantial civilization.

There is always a moral significance in a scene like this, a promise of better things to come, which is worth more than the objective reality. What is the meaning of Nature, and what the meaning of Art? "Heavenly capital and earthly labor make the firm called Providence," and neither partner is seen comprehensively without the other. I think this sublime

yield to a desire for comfort, his ear rings, his feathered head dress and his paint will be made over to the female of his species.

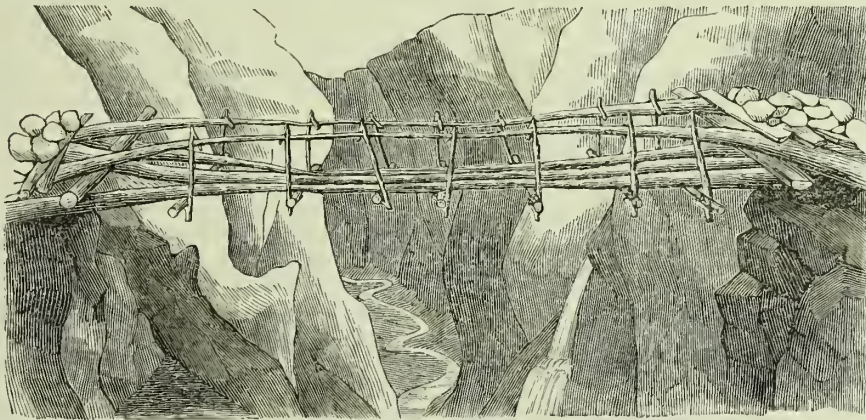
Now, all the hints of nature are decrees. This savage adornment puts the gratification of taste above the merely animal wants, and all that we see as exterior or brute nature is built up with reference to man's higher necessities and powers. This is our warrant for art. The universe is not only a gallery of living pictures, a sublime mystery to move our awe and wonder, it is a storehouse of the noblest supplies for our industry and our holiness, (for holiness simply means wholeness,) it is a school for the development of our whole being.

The stones lie in the quarry in smooth plates, ready, almost, for the builder's hand, or to be ground into food for trees and flowers. Buried under the roots of the mountains, or crumbling into soils, or wrought into cathedrals, or carved into statues of the gods, they are pure use, and they are as natural in one place as in the other.

Nature and Art.

You remember the story of the shipwrecked Phœnician sailors, who, stirring the embers of the fire they had built on the sea shore, discovered the fused particles of sand and alkali which we call glass. It shared the aboriginal fate of things for a long period, that is, became a personal ornament, but after this apprenticeship, became, first, solid air, and then in the mirror, solid space, and finally, in the telescope and the microscope, it became the All-Seeing Eye, revealing a world in every star and a world in every atom! This is what it is the nature of sand and alkali to become when it is married to art. This truth is illustrated at every step in our lives. It is a wonderful pursuit,—this following of nature into her realized spirit—realized forms and services. The silkworm weaves its cocoon, winding sheet and cradle for the life that belongs to its race, but does not exhaust thereby the uses of its lovely manufacture, which in royal robe and brodered banner comes into still higher service.

Here is a volume—leather, cotton or flax, oil



AN INDIAN BRIDGE.

partnership is never seen to such advantage as when some noble edifice or institution, some public park or art museum, is opened to the uses of religion, or charity or education.

Every stone in the temple, every polished panel on which is written the record of the tree's life, the luscious fruits which displace the worthless, wild product, the multiplied petals of the Rose are witnesses of Nature's welcome to the hand that unfolds her secret store of uses.

Affected Sentimentality.

We live, we are told, in a godless age, the tendency of which is toward materialism. The application of machinery to our industries, the thousand inventions which emancipate men from the bondage of toil, are, we are told, of questionable advantage. There is a maudlin sentimentality in these moans over the degeneracy of our own times, and I notice that these mourners make the smallest investments in things of an immaterial value. They invest in cheap prayers, cheaper than Sir Godfrey Kneller's, who 'prayed on canvas,' cheaper than Mozarts' or Handel's, who prayed as David did, on stringed instruments and organs.

There is no worse infidelity than that which refuses to see the infinite, wonder-making builder, in the houses which he has fashioned with human hands, as well as in the wondrously curved outlines of the eternal hills. There is a tendency to exalt nature and natural beauty far above the products of human intellect and skill. It is the last enfranchisement of thought to see in art the higher nature, and that man is not man until he is cultivated.

"Earth proudly wears the Parthenon
As the best gem upon her zone,
And morning opens with haste her lids
To gaze upon the pyramids.
For, out of thought's interior sphere,
These wonders rose to upper air;
And Nature gladly gave them place,
Adopted them into her race,
And granted them an equal date
With Andes and with Ararat."

It is easy to see how much art has had to do in developing humanity out of the creature man, who may be studied to-day in all his primitive naturalness, a fit companion for the bison of the plains. First, we see his superiority to the brute, not in provision for food or shelter, but in the decoration of his person. In colors warranted not to run, the Polynesian dandy still struts in his Dolly Varden skin, a parrot tattooed on one side and a palm tree on the other. By and by his love of finery will

and soot are its materials; but in these the soul of Shakespeare or of Dante has been caught and imprisoned. There is no end to these transfigurations. We can never know that we have reached the last or best use of anything. We plant the Eucalyptus for timber, shade and fuel, and then find it a cure for malarious disease. We burn the coal which gives us the light and heat it gathers in elder ages, and the very smoke reappears in delicate perfumes and gorgeous dyes.

Horticultural Science.

The old definitions of art are becoming obsolete through the advancement of the sciences. A more universal knowledge of these will give a new impulse to the fine, as already it has to the useful arts, and to none more certainly than this youngest art of landscape gardening and its handmaid horticulture. Every principle of art is founded in science, and how much more scientific knowledge is needed than on the canvas and single block, by Him who works with living materials, and on a grand scale.

It is claimed that Architecture is the highest of the fine arts, as it employs Painting, Sculpture and Music, and if this be so, I think there is a higher still, which includes Agriculture also, which takes a segment of the Earth's surface and makes it a fit abode for Earth's sovereign. This art, by whatever name it may be called, is in its very infancy, and will be slow in growth, for it depends upon much that is not strictly in the domain of art, upon the general culture and the development of a true social spirit.

My house may be lined with cedar and camphor wood, its courts may be paved with mosaics richer than those of the Alhambra, Aphrodite may rise in the spray of my fountains, and Morpheus scatter poppies in my luxurious chambers of rest, crystal domes and walls may enclose as with a new heaven, some new, tropic earth for my delight, but it can never be the "House Beautiful" while there is a beggar or an outcast at the gate.

What Wealth and Taste Does.

The Professor then spoke of Chatsworth, the residence of the Duke of Devonshire, of the Arboretum filled with trees from every part of the world, the conservatory covering an acre of ground, in which seven miles of pipes are used to distribute heat, and forty miles of glazed sash to keep out cold, from the gallery of which you can look down into a forest of tropical foliage, palms and ferns, orchids and cacti,

the royal lily of the Amazon, the lotus and papyrus of the Nile. This was a grand showing of what Aristocracy, which has tried many costly experiments for us, can accomplish in the hereditary home of a single family. For a thousand years its high park fences have enclosed high bred men and women, noble architecture and millennial trees, through periods when ignorance was a standing threat against order.

Nearer home, at Lewellyn Place, near Orange, New Jersey, we have what I consider the most perfect example of what coöperation and association will do under a democracy. Only time is needed to produce results equal to those at Chatsworth, and the hundred owners increase the interest, pleasure and advantage an hundred fold.

In our country the public park shows what estimate the people put upon beauty; it has a very different and greater value than Kew, or the garden of plants at Paris.

Combined Effort.

The speaker proceeded to indicate how a number of families could combine to create a paradise of rural enjoyment, every member of which would increase his individual capital in contributing to the enjoyment of all. This is democracy, social and constructive. The meaning of that word is continually enlarging. Our forefathers said it meant liberty and equality, and that equality meant the equal standing of man, as man, before his Maker. Now we mean by it "the quality of the quantity, the whole, the royalty, the imperial attributes of the people."

The idea of perfected manhood inheres in this of popular sovereignty, and here is our warrant for education. Our sovereign is not merely a biped animal, twenty-one years of age, nor yet one further endowed with intellectual gifts, enabling him to secure every selfish end. Manhood only is attained when these are dominated by the sovereign soul—"open on all sides." This "freeman" will make a home suited to his character, enriched with all the treasures of nature and art.

Misapplied Wealth.

The connection between taste and morals was touched upon. "To learn what is beautiful is the first step, to live it, is the second." Art has its political relations—it is fostered by liberty and all its tendencies are towards peace. "Bowie knives are the thorns on the human crab apple tree, which disappear when civilization reclaims it to sweetness." The four and a half millions of soldiers which make up the peace establishment of Europe, the annual cost of them, and loss through them, applied to industry would fill the land with plenty. Applied to education it would make war impossible. Universal education in art, would of necessity create a higher civilization.

The speaker said he would like to speak of what Horticulture especially might do in respect to popular refinement if the subject were not too large for the hour. It had created the rural beauty of England, it had recovered Holland from the sea. Originally there was only one Coniferous tree in Great Britain—the Scotch Fir. Now there are a hundred. The sea coasts of France, covered like so much in this vicinity with shifting sand, had been reclaimed by the culture of the Pinaster.

Legislative Protection.

One of the recognized objects of an association of this kind should be to keep the duty of legislative protection and promotion of Arboriculture before the people. The speaker hoped to see much accomplished through the influence of the University, where they had ample facilities for growing every useful tree and plant which our climate will sustain. He expected to see our railroad tracts made green with turf, and pleasant with trees, instead of dismal stretches of noxious weeds, and their stations beautified with rural surroundings.

He expected to see villages grow up in which inequality of surface and crookedness of streets and "eccentricities" of building would be tolerated. For the Germans, our masters in aesthetics, to whom flowers are as necessary as corn, would add their old world culture to our new world vigor and strength.

A small part of the money that has been expended in so-called improvements, which are but costly violations of taste, would make San Francisco one of the most picturesque of cities.

Enough is wasted in shoddy display to enclose our shifting sands with walls of verdure, thus modifying our climate, tempering our winds, and making it as healthful as beautiful. And enough is worse than wasted to build and sustain our temples of art and learning, our parks and public gardens, and make the fairer Athens of which the poet dreamed.

We only need to feel that these things just as much as our banks and railroads, are factors in civilization. Nor can we boast of what Nature has done for us until she is justified of her children—

"Who toil to leave as their bequest
An added beauty to the earth."

INTERNATIONAL PATENT SYSTEM.—Prominent English gentlemen who know the need of a change, are still pushing this matter. A deputation recently waited on Earl Granville to urge upon him the importance of allowing patents only to actual inventors or their representatives, and of taking steps to assimilate the patent laws of all countries, in order to remove the obstructions under which inventors labor at present. He has taken the matter under advisement.



Little Builders.

Lay the blocks on very even,
Place them skillfully, with care;
Ab! your mimic house is growing
Large, and high, and very fair.

Little Nellie's eyes are watching
As the paluted walls uprise;
She and Carlo think there's nothing
Half so grand beneath the skies.

Keep thy patience, little builders;
Wrath and haste thy work undo;
If thy walls fall down before thee,
Other walls have fallen too.

Older hands have oft erected
Castles large and fair as thine,
Built with every hope and heart-beat
Yet they crumble and decline.

Waste no time in vainly weeping,
Over errors you have made;
Work again and build more strongly;
Some day thou wilt be repaid.

Ignoble Indolence.

EDITORS PRESS:—Before I say *my* say, I want to congratulate the RURAL PRESS editors and readers, on the ability and sprightliness of its laly correspondents. "Farm House Chat" especially, is always bright and sensible, and if every farmer would but "read, mark, learn, and inwardly digest it," they would be on the road to a happier state of things than generally obtains in Californian ranches.

Marion, of "Leafy Glen," too, was very pithy and practical in her remarks on the "Education of Girls." I hope she will not consider me presumptuous if I take up the thread of her discourse and spin a little yarn myself.

Well, then, I think the root of the matter about which she so justly complains, viz: that girls are brought up by their parents in ignoble indolence, while the mother slaves herself to death to save the "dear girls," is just here, that the rising generation entertain the idea that their starting point in the race of life must be at their parents'.

Winning Post.

Parents foolishly encourage them in so thinking, and moreover, nurture them as though such would certainly be the case, forgetting how impossible it ever must be in the vast majority of instances.

It is, of course, perfectly natural that parents should wish to see their children in the best of positions, but reverses in life are always possible, "the bank may break, the factory burn," and it is wisdom to be prepared to make the most and the best of any and every station in life "to which it may please God to call us."

The one great advantage that wealthy parents may and should secure to their offspring is a lengthened period of superior schooling. Wealth can be acquired at any time of life, but school days come only once in a lifetime.

I have used the word "schooling" instead of "education" purposely. My idea of education is that it is a thing more connected with home than with school, and lasts from the cradle to the grave, whether for good or evil.

Schooling and Education.

Schooling is the mere imparting of certain definite knowledge of facts and figures, while education is that gradual drawing out and development of the character by precept, and, more especially, by example, that no mere schooling can effect, and which no money payment can secure. It is useless for parents to delegate this to the schoolmaster, and expect him "to lick the young cubs into shape." The young cubs are shaping themselves all the while after the model you daily set them, ye heedless parents.

Let us all then, as Mary Mountain advises, begin at home and correct our own "little tempers" and weaknesses. Not "compound for sins we are inclined to by damning those we have no mind to." Let all our efforts towards education be in the direction of solidity and stability; not sacrificing grace to the one or present

happiness to the other; but, eschewing mere fripperies and vanities, let us rather endeavor to educate ourselves for

"That sphere
Where all is made right which so troubles us here,
Where the glare, and the glitter, and tinsel of Time
Fade and die in the light of that Region Sublime;
Where the soul, disenchanted of flesh and of sense,
Unscreened from its trappings, its shows, and pretence,
Must be clothed for the life and the service above
With Purity, Faith, Grace, Meekness, and Love.
O children of earth, foolish Mortals, beware!
Lest in those upper realms you have nothing to wear."
E. B.

Carmel Valley, Aug. 17th, 1872.

Dwelling in the Valley.

How many souls dwell always in the valley lands of life, among mists and fogs and sickly vapors, insensible to the bracing airs and refulgent skies of the mountain regions above them. Taking narrow views of life, they judge humanity by their own limited measure. Little allowance can they make for differences of education, temperament, habit; they cannot see that the Wise Haud has made its creatures to differ for a wise purpose; they cannot believe there is something of God in every soul he has created, which shall not be quite destroyed. Indeed it is of the religious nature in man that the miasmatic airs of the valley land take most noxious hold.

These are the troubled ones who can take no other view of the dealings of God than as having direct reference to their own little world. They are continually in doubt, in wonder, in expectation, in alarm. They are the uncomfortable ones who dwell long and pityingly upon their own failings, their griefs, their trials. They never forget themselves. They like to discourse of their feeble faith, their obscured hope, their struggles with the great "enemy of souls," in the conference room and the ministers study; and to publish their "feelings" to the world in religious newspapers.

They are constantly making little, weak side thrusts at what they call their besetting sins, yet seldom coming out bravely to meet them in actual battle. They want everything "done for them." They like to ascribe to themselves all manner of evil dispositions, and are most happy when they can feel that they are "being helped" to put them out of the way. They are constantly digging up their good resolutions to see if they have taken root—as children do their plants—or if the root is a healthy one, and not the nourisher of some cankerous worm.

Ah, if they could shake themselves clear of all this, if they could climb the heights, if they could turn their faces sunward instead of ever toward the mold how soon these clogging weights would drop from their feet or be felt only as the common weaknesses of our human nature—that nature which, with all its weakness and limitations, is yet so noble and which should be taken at its strongest and best points rather than its weakest! Perhaps, too, they would see how the human life is one great harp in which the discords that sound so harsh below blend in harmony above.

Ruskin, in his "Ethics of the Dust," has these strong words: "It is less easy to uproot faults than to choke them by gaining virtues. Do not think of your faults, still less of others' faults. In every person who comes near you, look for what is good and strong; honor that, rejoice in it, and as you can, try to imitate it; and your faults will drop like dead leaves when their time comes. And even if you cannot find much good in yourself at last, think that it doesn't much matter to the universe either what you were or are; think how many people are noble if you cannot be; and rejoice in their nobleness. An immense quantity of modern confession of sin, even when honest, is merely a sickly egotism which will rather dissect its own evil than lose the centralization of its interest in itself."

We sleep, but the loom of life never stops; and the pattern which was weaving when the sun went down, is weaving when it comes up to-morrow. He who is false to present duty, breaks a thread in the loom, and may find the flaw when he may have forgotten the cause.

The poor man who envies not the rich, who pities his companions in poverty, and can spare something to him who is still poorer, is, in the realms of humanity, a king of kings.

The Father of his Country with the Girls.

The following extract from the journal of a young lady in Virginia, who, in 1772, visited the Lee's and Washington's on the Potomac, gives a different view of the Father of his Country from that which has been generally entertained:

"I must tell you our frolic after we went to our room. We took it into our heads to want to eat. Well, we had a large dish of bacon and beef; after that a bowl of sago cream; and after that an apple pie. While we were eating the apple pie in bed—God bless you! making a great noise—in came Washington, dressed in Haunah's short gown and petticoat, and seized and kissed me twenty times, in spite of all the resistance I could make, and then cousin Mollie. Hannah soon followed, dressed in his coat. Then joined us in eating the apple pie, and then went out. After this we took into our heads to want to eat oysters. We got up put on our wrappers, and went down into the cellar to get them. Do you think Washington did not follow us and scare us just to death? We went up, though, and eat our oysters. We slept in the old lady's room, too, and she sat laughing fit to kill herself at us. (Wonder where the pickles were?)"

If this were not published in an authoritative manner, we should doubt its authenticity. The idea of George Washington dressed in a woman's short gown and petticoat going with another woman dressed in his coat into the bedroom of some young ladies who were sitting up in bed at night eating bacon and beef, sago cream, and apple pie, and joining in the frolic, is something astonishing. Not satisfied with this it seems that when the young woman afterward went down to the cellar to get some oysters to complete their banquet, Washington followed them and scared them nearly to death. We are afraid that our stereotyped conception of Washington's character will have to be considerably modified by these revelations.—*New York Sun.*

A Touching Story.

We know not when we have perused a more touching and beautiful little story than the following from the *Hartford Courant*:

It was but yesterday that a friend—a young gentleman of fine intellect, of a noble heart, and one well known to many of our readers, was suddenly snatched by the hand of death from all the endearments of life. Surrounded by everything that could make existence pleasant and happy—a wife that idolized him—children that loved him as they can only love, and friends devoted to him—the summons came, and he lay upon the bed of death. But a few years ago, she to whom he was wedded, placed a bridal ring upon his finger, upon the inside of which he had a few words privately engraven. The husband would never permit the giver to read them, telling her that the day would come when her wish should be gratified, and she should know the secret. Seven years glided away, and a day or two since, when conscious that he must soon leave his wife forever, he called her to his bedside, and with his dying accents, told her that the hour had at last come when she should see the words upon the ring she had given him. The young mother took it from his cold finger; and, though heart-stricken with grief, eagerly read the words: "I loved thee on earth—I will meet thee in heaven."

GAIL HAMILTON ON A MAN IN LOVE.—Gail Hamilton is not always sensible, or even as truthful as she should be, when she talks about men, matrimony and woman suffrage; but she did say this truthful and beautiful thing: "There is no slavery so abject as the slavery of a man to the woman he loves. Abject, because it goes behind his will and possesses the whole man. And the more he is, the more strong and bright and free, the more thorough is his enthralment. Woe to such a one if he falls into the hands of a weak, a frivolous, or an unworthy owner. Joy to him if his proprietor be a large natured woman; for then his completest thrall is most exalted and divine freedom."

WHAT a glorious world this would be if all its inhabitants could say, with Shakespeare's shepherd: "Sir, I am a true laborer; earn what I wear; I owe no man hate; envy no man's happiness; glad of other men's good; content with my farm."

Young Folks' Column.

Boys and Errands.

There are so many bright spots in the life of a farm boy that I sometimes think I should like to live the life over again; I should almost be willing to be a girl if it were not for the chores. There is great comfort to a boy in the amount of work he can get rid of doing. It is sometimes astonishing how slow he can go on an errand, he who leads the school in a race. The world is new and interesting to him, and there is so much to take his attention off, when he is sent to do anything.

Perhaps he couldn't explain himself, why, when he is sent to the neighbors after yeast, he stops to stone the frogs; he is not exactly cruel, but he wants to see if he can hit 'em. No other living thing can go so slow as a boy sent on an errand. His legs seem to be lead, unless he spies a woodchuck in an adjoining lot, when he gives chase to it like a deer; and it is a curious fact about boys, that two will be a great deal slower about doing anything than one, and that the more you have to help on a piece of work the less is accomplished. Boys have a great power of helping each other to do nothing; and they are so innocent about it and so unconscious. "I went as quick as ever I could," says one boy, when his father asked him why he did not stay all night, when he had been absent three hours on a ten-minute errand. The sarcasm had no effect on the boy.

Going after the cows was a serious thing in my day. I had to climb a hill which was covered with wild strawberries in the season. Could any boy pass those ripe berries? And then in the fragrant hill pasture there were beds of wintergreen with red berries, tufts of columbine, roots of sassafras, to be dug, and dozens of things good to eat or to smell that I could not resist. It sometimes even lay in my way to climb a tree to look for a crow's nest, or to swing in the top, or to see if I could see the steeple of the village church.

It became very important for me sometimes to see that steeple; and in the midst of my investigations, the tin horn would blow a great blast from the farm house, which would send a cold chill down my back in the hottest days. I knew what it meant. It had a frightfully impatient quaver in it, not at all like the sweet note that called us to dinner from the hayfield. It said, "Why on earth doesn't that boy come home? It is almost dark, and the cows ain't milked."—*Work and Play.*

A Little Hero.

The following is related as an incident of the sacking of Paris:—A boy of thirteen found fighting was taken to be shot. He took a silver watch from his pocket, and cried out:

"Captain, do let me take this first to a friend across the street; I borrowed it."

"Oh, you scamp," said the officer; "I understand; you want to run off."

"My word of honor, I will come back again," said the boy, and the Captain, seeing it was a child, was only too glad to get rid of him. In ten minutes the boy came back, and took his stand with his face to the wall.

"Here I am—fire!"

Does Roman history tell us anything braver? The Captain boxed the little hero's ears, and ordered him never to show his face there again. They could not fire on him.

A CHINAMAN dying, left 11 sheep and 3 sons—and making a will left one-half of his estate to his eldest son, one-fourth to the next, and one-sixth to the third son. Now, they wished to divide without killing a sheep; but could not see how to do it; so they sent for a wise man, who showed it was easy enough. Sending to his own fold for a sheep, he put it with the 11:

Now take your half said he to the eldest, and he did so..... 6
To the second—take your 1/4..... 3
To the younger, take your 6th and begone— 2
And they all did so; when the wise man drove his home..... 1

Was the distribution agreeable with the will? 12

Boys are very much like railroad ears—oftentimes they can be kept on the right track only by a proper use of switches.

In this world, it is not what we take up, but what we give up, that makes us rich.

DOMESTIC ECONOMY.

Washing.

There is more carelessness in rinsing clothes than in any other part of the laundress' work. The soap may be perfect; the streaks and spots faithfully rubbed out; but if the clothes are thrown into the rinsing tub and barely covered with water, or hastily passed through it, the laundress cannot expect much credit for her labor.

The rinsing tub should have a generous supply of water, the blue carefully stirred in, and only a few pieces put in at a time. Each article should be vigorously shaken up and down, and fully opened, that the water may flow freely through every part; then passed through the wringer, again well opened and held up to the light, to see that all dirt and spots have been removed. This having been well done, put each article into another tub of clear water. Do not put any piece in the basket just as it comes twisted out of the wringer, the first time; but shake it out and pass it at once into the second tub, to be again rinsed with the same care and thoroughness.

If possible, have your clothes dried in the open air, but if windy or freezing, never starch until they have been dried and brought into the house.

Clothes should not be thrown carelessly on the line, but snapped out and hung up straight and smooth. Sheets, bed-spreads, and table linen, particularly, should be thus carefully hung up,—bring the hems or selvages straight and true,—and pinned strongly to the line.

This may seem trivial, and, perhaps, whimsical; but the wisdom of the whim will be proved in the ease with which your clothes can be ironed, the pleasure you will experience when you see them lying evenly and neatly in their places on bed or board, and we think clothes will wear enough longer to convince you that it is also an economical whim.

To Wash Flannels.

White flannels may be kept soft and free from shrinking, if properly washed.

Put enough soap into boiling water to make a strong suds, and then put in the flannels, pressing them under the water, with the clothes stick. When cool, so that you can bear your hands in the suds, rub them carefully, and when clean, pass them through the wringer into another tub of boiling water, into which you have thoroughly stirred a little bluing. If your first suds is strong enough, the flannel will retain sufficient soap for the rinsing water. Shake them up and down in the last water with the clothes stick till well rinsed, or cool enough for your hands; then pass through the wringer once more, and as quickly as possible; snap them well, pulling them into good shape; hang out in a clear sun, or brisk wind, and when two-thirds dry bring in; snap and pull again; fold and roll up hard for a little while, and then iron and press till dry.

Never wash flannels in cloudy or stormy weather, and always iron as soon after bringing in, as you can. If they lie long folded they will shrink.

TO BOIL CORNED BEEF.—If the piece is very salt let it soak over night. If young beef and properly corned, this is unnecessary. For boiling, pour cold water over it after washing off the salt, letting the meat be well covered. The rule is twenty-five minutes to a pound for boiling meats, but corned beef should never be boiled—it should only simmer, by being placed on a part of the range where the simmering can be uninterrupted from four to six hours, according to the size of the piece. If it is to be served cold, let the meat remain in liquor until cold. Tough beef can be made tender by letting it remain in the liquor until the next day, and then bringing it to the boiling point just before serving. For rump pieces this is a superior method. A brisket or plate piece may be simmered until the bones can be easily removed; then fold over the brisket piece, forming a square or oblong piece; tie over it a piece of muslin, place sufficient weight on top to press the parts closely together, and set it where it will become cold. This gives us a firm, solid piece, which, eaten in slices, is a delightful "relish."

APPLE PIE.—It is a conceded fact that the most superior apples make but an insipid pie in the spring. I would like to give your numerous lady readers the benefit of my improved recipe, if you please.

Make a nice, flaky crust, pare and cut the apples in rather thick slices, spread them on your plate an inch thick, or more, sprinkle a handful of sugar over them (I prefer white,) then spread two or three tablespoonfuls of currant jelly over them, a little flour from a dredge, nutmeg, three tablespoonfuls of water, and a lump of butter the size of a small butternut, and you will have a superior pie. Grated white sugar on the top crust before putting in the oven is an improvement. To prevent the juice boiling out in the oven, wet the edges of your crust with the white of an egg; water will do, but egg is better.

AN EXCELLENT SAUCE may be made by cutting a cucumber and onion as small as millet seed; and adding a teaspoonful of cayenne pepper, a wine glass of Madeira, the same of vinegar, and a little salt.

Flavoring With Leaves.

D. Bury, in the *Garden*, says: Leaves are more or less popular for garnishing, but it has often surprised me that they are so little used for flavoring. With the exception of sweet and bitter herbs, grown chiefly for the purpose, and parsley, which is neither bitter nor sweet, but the most popular of all flavoring plants—comparatively few other leaves are used. Perhaps I ought also to except the sweet bay, which is popular in rice and other puddings and certainly imparts one of the most pleasant and exquisite flavors. On the other hand, what a waste there is of the flavoring properties of peach, almond and laurel leaves, so richly charged with the essence of bitter almonds; so much used in most kitchens. Of course such leaves must be used with caution, but so must the spiritis well. An infusion of these could readily be made, either green or dry, and a tea or tablespoonful of the flavoring liquor used to taste.

One of the most useful and common of all leaves for flavoring is that of the common syringa. When cucumbers are scarce, these are a perfect substitute in salads or anything in which that flavor is desired. The taste is not only like that of cucumbers, but identical—a curious instance of the correlation of flavors in widely different families.

Again, the young leaves of cucumbers have a striking likeness in the way of flavor to that of the fruit. The same may be affirmed of carrot tops, which are like carrots in taste as may be. In most gardens there is a prodigious waste of celery flavor in the sacrifice of the external leaves and their partially blanched foot-stalks. Scores of sticks of celery are cut up into soup, when the outside would flavor it equally well or better.

The young leaves of gooseberries added to bottled fruit give a fresher flavor and a greener color to pies and tarts. The leaves of the flowering currant gives a sort of intermediate flavor between that of black currants and red. Orange, citron and lemon leaves impart a flavor equal to that of the fruit and rind combined, and somewhat different from both. A few leaves added to pies or boiled in the milk used to bake with rice, or formed into crusts or paste, impart an admirable and almost imitable bouquet. In short, leaves are not half so much used for seasoning purposes as they might be.

KEDGEREE.—This dish, which may readily be composed in any kitchen, however humble, is a universal favorite wherever it is known; and it is so simple in its construction that it is marvellous that it is not common at every breakfast table, and more frequently eaten both by rich and poor. The great secret of its success depends chiefly on its being served very hot, and also in being judiciously seasoned. Hard boiled eggs; boiled rice, and boiled fish of any kind (the remnants left from dinner will do), in almost equal quantities, more rice perhaps than fish and eggs, constitute its component parts. Chop them all up together, put them in a stew pan, with a small piece of fresh butter, stir them about well, make them hot, and if the cook is endowed with liberal ideas regarding pepper and salt, kedgerree will be noted an excellent breakfast dish. The essential elements for its preparation are inexpensive, and it is strange that the poorer classes have not hitherto adopted this means of flavoring a palatable nourishing dish of rice.—*Land and Water.*

GINSENG.—A correspondent inquires about ginseng. The Chinese eat the root and pay high prices for it, obtaining their supplies from their own country—Manchuria—and the northern portion of the United States east of the Rocky Mountains. It is, we believe, not cultivated anywhere, and it is not certain whether it could be cultivated with profit. Ginseng is not consumed, we believe, by any other people than the Chinese and some of the Indians of this country. It grows wild about the headwaters of the Mississippi, and is in great demand for exportation to China.

The root of the plant is dried and eaten. When first taken from the ground it has a jointed, fleshy, taper root, as large as a man's finger. When dry it is of a yellowish white color, with a mucilaginous sweetness to the taste, somewhat resembling that of licorice, but slightly bitter.

A NEW WAY TO SERVE UP PEACHES.—Take good-sized freestone peaches, wipe them with a towel, halve them, and place them flat side down, in hot butter or lard. Let them fry to a nice brown, then turn and fill the seed-cup with sugar, which, by the time the fruit is properly coated, will be melted and form with the juice of the peach a rich syrup. Serve up hot, and if you don't like them you need not repeat the experiment. Most persons think the dish a superb one.

Medical writers caution people against eating peaches served up in any form in the evening. It is asserted that they are depressive to the circulation, and exhaust the system by the prussic acid which they contain. It is better to eat them in the morning or not later than an early dinner so that some exercise may follow eating to aid their proper digestion.

TO PUT DOWN CUCUMBER PICKLES.—Take two quarts of molasses to one of water, or in that proportion. Put in the cucumbers, fresh from the vines, adding more molasses as you fill in. Set them in a warm place, and in a few weeks they will be sufficiently sour to suit any palate. Spices can be added after they become sour.

AN EXCELLENT SYRUP FOR SODA WATER OR OTHER DRINKS.—Take the fresh rind of one large or two small Havana oranges, two pounds of white sugar, and one pint of water. Cut the rind in small pieces, place in a wedgewood mortar, and with a pestle grind into a soft mass, using two ounces of sugar during the process of manipulation. Then add six ounces of water, stirring well so as to dissolve the sugar. Then strain through muslin. Repeat the process with the same amount of sugar and water, and again strain. Then mix the remainder of water and sugar with liquid so obtained in a porcelain kettle, place over the fire and use sufficient heat to dissolve the sugar. The above makes a most delicious syrup for soda water, and can be dispensed with or without cream.

TURTLE BEAN SOUP.—Soak one and a half pints of turtle beans, in cold water, over night. In the morning drain off the water, wash the beans in fresh water, and put into the soup digester, with four quarts of good beef stock from which all the fat has been removed. Set it where it will boil steadily, but slowly, till dinner, or five hours at the least—six is better. Two hours before dinner put in half a can of tomatoes, or eight fresh ones, and a large coffee cup of tomato catsup. One onion, a carrot, and a few of the outside stalks of celery, cut into the soup with the tomatoes, improves it for most people. Strain through a fine cullender, or coarse sieve, rubbing through enough of the beans to thicken the soup, and send to table hot.

BLACKBERRY WINE.—Don't can, or dry, or eat up all your blackberries. Save some of them for wine, of which a most excellent article can be made—good alike for the table and kitchen, and highly valuable for the sick room. In some classes of diseases, especially affections of the bowels, a first-class article of blackberry wine is more valuable than the most costly foreign wine, even when made from the pure juice of the grape. One great reason why blackberry wine is not more appreciated is because it is so seldom properly made; and yet there is no difficulty in making a good article, and by a very simple process.

NEWPORT FISH PUDDING.—Pick cold fish into small bits, removing all the bones. Thicken some boiling milk with flour, and stir the fish into it, season with butter, pepper and salt. Put into a pudding dish, and spread cracker or bread crumbs, thickly over the top, to prevent the milk from scorching. Bake only long enough to brown it nicely. A good breakfast dish, or a side dish for dinner.

GOOD SUBSTITUTE FOR CHICKEN PIE.—Take corned beef; cook it tender; when cold slice thin; have a crust as for chicken pie; put in a layer of meat and one of light bread, and so on until your dish is full; then sprinkle a little salt and pepper, and piece of butter the size of an egg; fill up your dish with boiling water; put on your top crust, and bake moderately one hour.

Practical Receipts.

To Make Jellies of Various Kinds.

JELLIES OF STRAWBERRIES AND BLACKBERRIES.—Bruise the fruit, put in a thin cloth, and allow to strain over night. Next morning add half a pound of sugar to each pint of juice, boil twenty minutes.

GRAPE JELLY.—Bruise and boil the fruit, then strain; add half a pound of sugar to each pint of juice, then boil from ten to twenty minutes.

FIG JELLY.—Wash and add water sufficient to cover the fruit, boil twenty minutes, strain, then add sugar and boil as above.

WILD CRAB APPLE.—Cover the fruit with water, and boiled until soft, then strain; add one pound of sugar to each pint of juice, boil from fifteen to twenty minutes.

SIBERIAN CRAB APPLE.—Proceed as for preceding, but add only one-half pound of sugar to each pint.

PLUM.—Mash, boil, strain, as above.

PEACH JELLY.—Wash, without removing skins or pits; cover with water, boil until soft, strain, add half a pound of sugar to a pint of juice; boil twenty minutes.

RHUBARB PUDDING.—Line your pudding-dish with slices of bread and butter, cover with cut-up rhubarb, stewed with sugar, then slices of bread and butter, and so on alternately until your dish is full, having the rhubarb and sugar on top. Pour in half a teacup of water, cover with a plate, and bake half an hour. Eat it warm, not hot.

The Predicted Comet.

The announcement some months since, that a Swiss astronomer had discovered a comet which was approaching the earth at a rate and in a direction which would lead to an actual collision on the 12th of August, just passed, created no little consternation in some parts of Europe, if not in this country. So much were the minds of the ignorant alarmed at the prediction that for prudent reasons and to prevent a panic, it was thought necessary to contradict the fact of such a prediction, and even, in some quarters to deny the very existence of the astronomer—Plautamour.

The time set for the collision, having passed, however, the facts are again brought to light

with the additional particulars that the same discovery was made independently and almost simultaneously by the Russian Professor, Bockh, of St. Petersburg, and that the Swiss astronomer went to St. Petersburg to join Bockh in his observations. Their mutual observations were fully confirmatory to their separate observations, which agreed upon the day and differed only a few hours as to the precise time of the collision.

The time, however, has now passed, and an abundance of "lee-way" been allowed for any possible error of motion or speed, and yet the world moves on as it ever has done, and will ever continue to do until it encounters something more substantial than the great majority of the cometary bodies with which astronomers have made themselves acquainted.

The fact is, as well remarked by the *Bulletin*, a comet is not a solid mass, but a cloudy or vaporous one, infinitely diffused and rarefied. Seen in the fine ether which constitutes interplanetary space, they appear like formidable bodies to the unintelligent eye, although their substance is less dense than our atmosphere, its atoms being widely separated, and having an independent motion. In short, comets are allied to nebulae, whose diffuse substance is very loosely hung together. They are erratic worlds in embryo, waiting to be condensed. Illuminated by the sun, as they near it, the nucleus, or preceding part, seems dense enough to be mischievous, while the tail, or following part, stretches out like a wide wake of lunar light. These attenuated cosmical clouds might envelop the earth without any worse effect than some disturbance of its atmosphere.

Schellen, in his late work on Spectrum Analysis, assuming the practical identity of cometary and nebulous masses, says that the nebulae, coming within the attraction of our solar system, would at its nearest approach to the sun, and in the neighboring portions of its orbit, appear as a comet, and when it grazed the earth's atmosphere would be seen as a shower of meteors, resulting from condensation on contact with the denser body of our atmosphere, which phenomenon is designated by the expression, "the conversion of the motion of the mass into molecular action or heat." Schiaparelli says that as the cosmical clouds which produce the meteors approach the sun, they increase in density some millions of times, and he calculates that the distance between any two meteors, only a few grains in weight, before the cloud begins to be condensed, may be upward of 40,000 miles. No wonder, therefore, that the attenuated mass of these bodies extends from five millions to ten thousand millions of miles.

CARE OF YOUNG DUCKS.—Raising ducks is very easy, provided one knows how to do it. It is well-known that ducklings will stray away from hens. When the hen has her liberty, the ducklings will scatter, some going one way and some another; and as it is impossible for the hen to go two ways at once, some stray away from her and get lost. When the hen is cooped, the ducklings will go so far in search of insects that they cannot find their way back. I avoid all this trouble by making a yard for them in this way: I take three boards about a foot wide, and make a yard, either square or triangular shaped, and put the hen and coop in one corner of it. I keep the hen cooped until the ducklings are about two weeks old, when I give her her liberty. She will stay with the ducklings some time longer. No more than twelve or fourteen ducklings should be kept in one yard, as they are apt to pile upon one another at night, and smother each other. The ducklings should be confined in a yard until they are well feathered, for if they go through wet grass, they most invariably die. The yard should be moved every two weeks, and care should be taken to have good shelter in one corner.—*Fancier, in the Poultry World.*

INSECT MOTIONS.—We have probably all wondered at the number of steps a little child will take to our one when trying to keep up with us. If we could make our legs move as rapidly, we should be able to attain a great speed. It is doubtless owing, in part, to their diminutive size, that insects' wings and legs move so rapidly during locomotion. A scientific observer has made some curious investigations to ascertain the velocity the wings attain during flight. The insect was grasped at the back by a pair of fine nippers, and when it sought to fly one of its wings was directed in such a way that it rubbed its point against the surface of a smoked cylinder which revolved with a known velocity. The wing at each of these revolutions carried away a little of the black smoke which covered the cylinder, and left a trace of its passage. The result of the experiments, allowing in regard to the accuracy for a variety of distracting causes, was to show the following number of beats per second for the wings of each insect: The common fly, 330; the drone, 240; the bee, 190; the wasp, 110; the hawk-moth, 72; the dragon fly, 28; and the cabbage-butterfly which is inaudible, 9. By other variations of the experiments he arrived at similar results.

the sun, on cloths, and appeared very fine. We were informed that from five to ten gallons per day could be picked. At Mr. Porter's some splendid pies graced the table, made of huckleberries picked along the creek close to the barn. We never have seen the fruit so plenty; many of the larger bushes five to six feet high were bending with berries. The birds and grizzles feast on them. Quail are abundant and fat in that region.

GOOD PLACE FOR GAME.—Samuel Hare, who has a pre-emption claim on Section 15, Township 9, South Range 3 West, says game is abundant in that neck of woods, especially deer, wild cat, California lions, grizzlies, etc. He is a good shot at a deer, and furnishes all his fresh meat in the venison line. His claim is about two miles west of Isaiah Porter's farm, and two or three miles north of Dan McLaughlin's settlement. All this section is densely timbered with first class pine, fir, redwood, madrona, tanbark oak, laurel and other useful timber—a good cover for game.

NEVADA.

Eureka Sentinel, Aug. 17: A LIBERAL HARVEST.—The ranchmen in this section of Lander county are rejoicing in the abundance of things coming to them from Mother Earth. The hay land never gave a better swath than it has yielded this year, and hillside grazing lands are thickly covered with the nutritious bunch-grass. The abundant snows of last winter have been followed by a profuseness of vegetation, such as has been rarely seen in past years, and have made the irrigating streams so full that no lack of water has been felt for purposes of cultivation. At the beginning of last month one or two severe frosts cut down both corn and potatoes, particularly on valley ranches, whereas in the foothills but little injury was sustained by these crops. So rapid is our season of growth however, that potato patches, which a month ago looked as if they would come to nothing, are now as promising as could well be desired. Our soil and climate seem particularly adapted for the growth of potatoes, cabbages, turnips, radishes and onions; these vegetables when home-grown having a flavor or an indescribable something about them which the California raised crops of the same species cannot lay claim to. This is particularly noteworthy in the case of potatoes. Who would touch one of the tough-waxy "spuds" coming over the Sierra Nevada now by railroad and fast freight, if he could get a genuine Nevada potato? The Chinese garden "sass" operators have apparently satisfied themselves as to the capabilities of the country in this respect, and hence they rarely ever put in a crop which proves a failure. What does Horace Greely know about farming where there are frosty nights every month in the year, and yet splendid crops are produced?

OREGON.

Oregonian, Aug. 17: HORSE-RACING AT FAIRS.—The season for our annual fairs is approaching and people are getting ready to attend. Most of the preparations, of course, are for the horse races. It has always been deplored by good friends of the farming interest that so much attention should be given to the horse race and so little to the more immediate interest of the farming profession. It is all very well to encourage fast travelers, but we want good work horses, good roadsters, good plowers, and moreover, there are many other matters aside from horsemanship, which, as things be now, are quite swallowed up in the care for the traveling character of the noble animal.

RAIN.—This welcome visitor came down in limited quantities Wednesday evening, sufficient to cool and purify the atmosphere, loaded with miasma, make us all breathe freer, lay the dust good, and do the crops no harm. The weather clerk will accept the obligations of this grateful community.

FALLING.—The river at this place is rapidly falling. Already the tidal effects are discernible. Several feet more, and the low-water mark will be reached. The Columbia is also going down fast. At Vancouver the river is within three feet of the low-water mark, and that point will soon be reached at the present rate of subsidence.

WOODS ON FIRE.—The timber to the northwest of the city was on fire Tuesday evening. The whole heavens were illuminated by the flames. Some superstitious persons labored under the belief, for a time, that it was fragments of the exploded comet. The fire met a decided check from the gentle Webfoot dews which descended at a later hour.

A PRODIGY.—Mr. S. B. Rafferty, living

in Washington county, ten miles north of Hillsboro, has a prodigy of a calf, three weeks old, which has only two legs. The hind legs are full and well developed, and the shoulder blades seem to be perfect, but no front legs adorn its body. The calf seems to be otherwise perfect. It strives hard to get upon its hind legs, and it is thought that it will succeed in walking yet. This calf will be one of the curiosities of the coming State Fair.

WE HAVE correspondents who desire us to keep them posted in regard to what are really some of the best fruits of the season; but as we are not able to get out among the fruit growing readers of the RURAL, it is quite impossible for us to say much on the subject. Besides we are better judges of fruit when found on our Editorial table, than anywhere else.

ANOTHER FARMERS' CLUB.—An adjourned meeting will be held at La Grange, Stanislaus Co., on Saturday, Aug. 31st, to complete the organization of a Farmers' Club. We hope the farmers will all turn out and form a good club.

MICROSCOPICAL observation has determined the brown spots upon the peach this year, to be a fungus vegetable growth, the result of some peculiar atmospheric condition.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Aug. 22.
FLOUR.—The interior and local demand is reported good, with a good inquiry for export. We quote prices as follows:

Superfine, \$1.25@1.50; extra, in sacks, of 196 lbs. \$5.62@5.75; Oregon brands, \$5.00 @5.50 in sacks of 196 lbs.

WHEAT.—The market has been active at declining rates since our last review. Receipts for the week aggregate 303,000 cents, the largest for any week this season. Sales aggregate 100,000 sacks fair to choice, at \$1.55 @1.60. The range for shipping grades is \$1.50, and choice milling, \$1.55 per 100 lbs.

The latest Liverpool market quotations come through at 11s. 10d. per cental.

BARLEY.—Market steady. Demand good and receipts light. Sales embrace 10,000 sacks, at \$1.02 1/2 @1.12 1/2 for new. The range at close is, new bay 1.05 @1.12 1/2; old brewing \$2.00.

OATS.—Market is steady. New are quotable at \$1.75 @2.00.

CORN.—Yellow is quotable at \$1.70 @1.75, and white at \$1.80 @1.85 per 100 lbs.

CORNMEAL.—Is quotable at \$2.00 @2.75 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$1.75 per 100 lbs.

RYE.—Is quiet at \$1.90 @2.00 per 100 lbs.

STRAW.—Quotable at \$6 @7.25 per ton for cargo lots.

BRAN.—Is selling at \$16 per ton from the mill.

MIDDINGS.—For feed, are \$25.00 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been pretty free during the week. Quotable at close at \$8 @15.00 per ton.

HONEY.—In the comb is selling at 10 @23; do. strained, 12 @15c. per lb.

POTATOES.—There has been a pretty fair demand this week, and very free supplies. Sales of Red at \$1.40 @1.60 per 100 lbs.; Carolina, \$1.25 @1.37 1/2 per 100 lbs.

WOOL.—The market continues dull. Some Fall is now coming in, best of which is held at 25c. The range of prices is nominally 25 @30c. for clean, and 15 @25c. for burry, 33 for extra choice.

TALLOW.—Good quality of Cal. 8 @8 1/2c.

SEEDS.—Flax 3c.; Canary, 4 1/2 @5 1/2c. Alfalfa, 16 @20; mustard, 4 @5c. per lb.

PROVISIONS.—California Bacon 12 1/2 @14c. per lb.; Oregon, 13 1/2 @14c. Eastern do. 10 @12 for clear and 14 @15 for sugar-cured Breakfast; Cal. Hams 13 @14; Eastern do. 16 @18c; California Smoked Beef, 13 1/2 @14c. per lb.

BEANS.—The following are jobbing rates: Pea \$3.75 @4.00; small White \$3.75 @4.00; Small Butter \$3.25; large \$3.75; Bayo, 5.25 @5.50.

NUTS.—California Almonds, 8 @10c. for hard and 18 @25 for soft shell; Peanuts, 6c Pecan, 25c @ lb.; Hickory, 12c; Brazil, 15c.; Chili Walnuts, 15c.; French Almonds, 25 @30c.; Princess Almonds, 35 @40c.; Cocoanuts, \$7.00 per 100.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 8 @9 @ lb. do. 2d quality 6 @7 @ lb.; do. 3d do. 3 @5c.

VEAL.—Quotable at 7 @10c.

MUTTON.—Quiet at 6 @6 1/2c. @ lb.

LAMB.—8 @9c.

PORK.—Undressed grain-fed is quotable at 5 1/2 @6 1/2c. dressed, grain-fed, 8 @9 1/2c. per lb.

POULTRY.—Live Turkeys, 25c. @ lb.; dressed, 27c. per lb.; Hens \$9.00 @9.50; Roosters, \$5.00 @7.50 per dozen; Spring Chickens, \$3.75 @4.00; Ducks, tame, \$7.00 @8.00 per doz.; Geese, \$12 @15 @ dozen.

DAIRY PRODUCTS.—Fresh California But-

ter, common to good in rolls, is steady at 32 1/2 @37 1/2c. New firkin is quotable at 20 @27 1/2c., pickled, old 18 @20c.; Eastern firkin 18 @27 1/2c.

CHEESE.—New California, 11 @13 1/2c.; Eastern at 12 1/2 @14c. @ lb.

EGGS.—California fresh, are 42 1/2 @45c., Eastern, 30c.; Oregon 35 @37 1/2c.

LARD.—California 12 1/2 @13; Oregon, none in market. Eastern in cases 14 @14 1/2c.; do in tcs. 11 1/2 @12c.; in kegs, 12 @13c. per lb.

FRUIT MARKET.
Tahiti Oranges, M 35 @ 40
Limes, M 10 @ 10
Au In Lemons, M 10 @ 10
Society do, bx. 1 @ 1
Bananas, M 10 @ 10
Pineapples, M 25 @ 30
Apples, Fat G. B. 1 25 @ 30
Apples, Fat G. B. 2 50 @ 60
Pears, Bartlett, 1 25 @ 30
Pears, Nickels, 1 25 @ 30
Pears, Cooking, 1 25 @ 30
Peaches, Choice, 1 25 @ 30
Peaches, Comm. 1 25 @ 30
Apricots, 1 25 @ 30
Nectarines, 1 25 @ 30
German Prunes, 1 25 @ 30
Hungarian Prunes, 1 25 @ 30

DRYED FRUIT.
Apples, M 10 @ 10
Pears, M 10 @ 10
Apricots, M 10 @ 10
Plums, M 10 @ 10

VEGETABLES.
Cabbage, M 10 @ 10
Carrots, M 10 @ 10
Rhubarb, M 10 @ 10
Sweet Peas, M 10 @ 10
Green Corn, M 10 @ 10
Marrowfat Squash, M 10 @ 10
Cucumbers, M 10 @ 10

GENERAL MERCHANDISE.
AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING.—Prices are as follows: Standard Wheat bags are selling at 18 1/2; Flour sacks 9 @9 1/2c. for qrs. and 13 1/2 @14 1/2c. for hlfs. Standard Gunnies are jobbing at 20 @21c.; Wool 70 @77 1/2c. Barley sacks 17 1/2 @19.

HESLIANS. 40-inch goods, 11 @12c. per yard.

BUILDING AND FENCING MATERIALS.—The demand for lumber in the interior is good and the export trade is light owing to scarcity of tonnage. The retail price advances to-day about \$2.50 @ M. Dealers pay for cargoes of Oregon as follows: Rough \$16 @17; do surfaced at \$27 @28; Spruce \$17 @18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32 1/2; refuse do. \$21 1/2. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @2.75; Shingles \$2.50 @2.75. Sugar Pine \$35 @40; Cedar \$27 1/2 @37 1/2. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The new scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine.
Rough, M 10 @ 10
Flooring and Stepping, M 10 @ 10
Flooring, narrow, M 10 @ 10
Flooring, second quality, M 10 @ 10
Laths, M 10 @ 10
Furring, M 10 @ 10
Redwood—
Rough, M 10 @ 10
Rough refuse, M 10 @ 10
Rough Pickets, M 10 @ 10
Rough Pickets, pointed, M 10 @ 10
Fancy Pickets, M 10 @ 10
Siding, M 10 @ 10
Tongued and Grooved, surfaced, M 10 @ 10
Do do refuse M 10 @ 10
Half-Inch surfaced, M 10 @ 10
Rustic M 10 @ 10
Battens M 10 @ 10
Shingles M 10 @ 10
Sugar Pine is jobbing at \$50 @60 for clear and \$35 @45 for second quality.

COFFEE.—Costa Rica 20 1/2c.; Guatemala 18c.

JAVA. 23c.; Manilla, 18 1/2c.; Rio 19 1/2 @20;

GROUND COFFEE in cases 30c.; Chicory, 12 1/2c.

SPICES.—Allspice 14 @15c. Cloves 16 @17c.

CASSIA. 35 @36c. Nutmegs \$1.00 @1.10. Whole

PEPPER. 20c. Ground Spices—Allspice \$1.00 @

do.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard

\$1.50; Ginger and Pepper, each \$1.00 @1.12 @

do.; Mace \$1.50 @ lb.; Ginger 15c @ lb.

FISH.—We quote Pacific Dry Cod in bun-

dles at 4 1/2c. @5 1/2c., Salmon in bbls. \$5.00 @6.00,

hf do. \$3.50 @4.50; Case Salmon, \$2.75 for 2 1/2-

lb. cans, \$2.50 for 2-lb. cans, and \$1.87 1/2 for 1-

lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in

bbls; Puget Sound Smoked Herring, 60 @85c

per box; Mackerel, No. 1 hf bbls, \$7.00 @9.00;

extra, \$9.50 @10.00; in kits No. 1 \$1.75 @2.00;

do No. 2, \$1.50 @1.62 1/2.

NAILS.—Quotable at \$6 25 @9.00 for assorted

sizes.

PAPER.—California Straw Wrapping, sells at

\$1.50 @1.60, Eastern \$1.60 @1.80 @ ream.

RICE.—Sales of China No. 1 at 6 1/2 @7 1/2c. and

No. 2 at 6 1/2 @6 1/2c. @ lb.; Siam, quotable at 5 1/2 @

6 1/2c. in mats; Hawaiian, 10 1/2c. per lb.

SUGAR.—We quote Cal. Cube at 13 1/2c.; Cir-

cle A Crushed, 13c. and Granulated 12 1/2c.;

Golden C. 11c.; Extra Golden C. 11 1/2c.; Hawaiian

8 @11c. as extremes @ lb.

SYRUP.—Prices may be given as follows:

47 1/2c. in bbls, 50c. in hf bbls, and 55c. in kegs.

SALT.—California Bay sells at \$6 @14;

Carmen Island, in bulk, \$14 @15; Fine Liver-

pool, \$23.50 @ ton; coarse, \$18 @19.

SOAP.—The prices for local brands are 5 @

10c. and Castile, 12 @12 1/2c. @ lb.

TEA.—We quote as follows for bulk descrip-

tions: Amoy—Common to fair, 30 @

45c.; superior to fine, 55 @65c.; extra

fine, 75 @85c. Foochow—Common to fair,

35 @45c.; superior to fine, 50 @60c.; extra fine,

75c. Souchong and Congou—Common to fair,

35 @45c.; superior to fine, 50 @60c.; extra fine,

75c. Japan—Common to fair, 30 @35c.; su-

perior to fine, 40 @45c.; extra fine to finest, 55

@75c. @ lb.

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San Francisco Retail Market Rates.

THURSDAY NOON, August 22, 1872.

MISCELLANEOUS.	
Butter, Cal. fr. D.	30 @ 40
do Oregon, D.	30 @ 40
Honey, D.	25 @ 30
Cheese, D.	20 @ 25
Eggs, per doz.	45 @ 50
Lard, D.	18 @ 20
Sugar, cr. 7 1/2 lb. 100	10 @ 12
Brown, do.	9 @ 12
Beet, do.	12 @ 15
Sugar, Map. D.	30 @ 35
Plums, dried, D.	15 @ 20
Peaches, dried, D.	20 @ 25
Wool Sacks, new	7 1/2 @ 85
Second-hand do	82 @ 85
Wheat-sks, 22 1/2 lbs.	15 @ 16

PRODUCE, ETC.	
Flour, ex, 55 lb. 6.00	@ 6 25
Superfine, do. 6.00	@ 6 25
Corn Meal, 100 lb. 3.00	@ 3 50
Wheat, 100 lb. 3.40	@ 3 50
Oats, 100 lb. 1.60	@ 1 75

FRUITS, VEGETABLES, ETC.	
Apricots, D.	10 @ 12 1/2
Pine Apples, D.	10 @ 12 1/2
Bananas, D.	5 @ 10
Cantaloupes, D.	10 @ 12 1/2
Watermelons, D.	25 @ 30
Cal. Walnuts, D.	10 @ 12 1/2
Cranberries, D.	12 @ 15
Strawberries, D.	12 @ 15
Raspberries, D.	10 @ 12 1/2
Cranberries, O. 1	@ 10
Gooseberries, D.	10 @ 12 1/2
Cherries, D.	10 @ 12 1/2
Oranges, D.	10 @ 12 1/2
Lemons, D.	10 @ 12 1/2
Limes, per 100, 2.00	@ 2 00
Figs, fresh, D.	12 @ 15
Asparagus, wh. 1	@ 10
Artichokes, doz.	50 @ 60
Cruciferous, D.	10 @ 12 1/2
Beets, D.	10 @ 12 1/2
Potatoes, New, D.	10 @ 12 1/2
Caiflower, D.	10 @ 12 1/2
Cabbage, D.	10 @ 12 1/2
Carrots, D.	10 @ 12 1/2

POULTRY, GAME, FISH, MEATS, ETC.	
Chickens, apiece	50 @ 25
Turkeys, D.	30 @ 40
Ducks, wild, D.	10 @ 12 1/2
Tame, do.	10 @ 12 1/2
Teal, D.	10 @ 12 1/2
Geese, wild, pair	20 @ 25
Tame, pair	20 @ 25
Hens, each	75 @ 100
Snipe, D.	10 @ 12 1/2
English, D.	10 @ 12 1/2
Quails, D.	10 @ 12 1/2
Pheasants, D.	10 @ 12 1/2
Wild, D.	10 @ 12 1/2
Hares, each	40 @ 50
Rabbits, tame, 25	@ 30
Wild, do. D. 1	@ 15
Beef, tend, D.	18 @ 20
Corned, D.	10 @ 12 1/2
Smoked, D.	15 @ 18
Pork, rib, etc., D.	10 @ 12 1/2
Chops, D.	15 @ 18
Veal, D.	15 @ 18
Cutlet, D.	15 @ 18
Mutton chops, 12	@ 15
Lamb, D.	15 @ 18
Legs, D.	15 @ 18
Tongues, beef, ea	25 @ 30
Tongues, pig, ea	15 @ 18
Bacon, Cal. D.	18 @ 20
Oregon, do.	16 @ 18
Hams, Cal. D.	16 @ 18
Haus, Cross s o	@ 25
Per lb. s Per dozen.	@ 100

CHOICE D. MEATS, ETC.	
Choice D. Meats	@ 25
Johnson's Or.	@ 25
Flour, D.	15 @ 18
Salmon, D.	10 @ 12 1/2
Smoked, new, 12	@ 15
Pickled, D.	10 @ 12 1/2
Rock Cod, D.	10 @ 12 1/2
Perch, s water, D.	10 @ 12 1/2
Fresh water, D.	10 @ 12 1/2
Lake Big Trout	@ 25
Small, D.	10 @ 12 1/2
Silver Smelts, 15	@ 20
Soles, D.	10 @ 12 1/2
Herring, fresh, 10	@ 12 1/2
Pickled, D.	10 @ 12 1/2
Tomcod, D.	10 @ 12 1/2</

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Season Tickets, admitting one gentleman and one lady.....\$5 00
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Season Tickets, admitting one juvenile under 14 years.....1 50
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Single admission.....50
Children under 14 years.....25
Children must be in charge of guardians or parents.
Tickets can be obtained from any of the Managers at the Pavilion, or at any of the principal Book, Music, or Drug Stores in the city.

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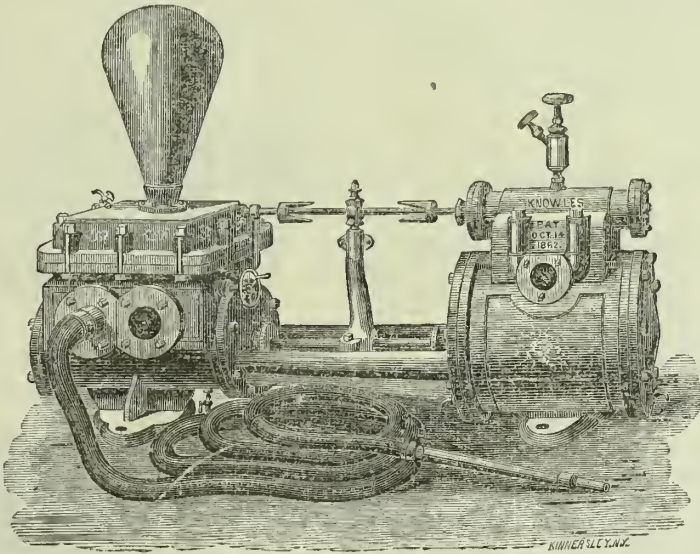
KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

v113-awbp

G. W. DICKIE, CHAS. R. STEIGER, W. EPPELSHEIMER, H. B. ANGELL, MELVILLE ATWOOD."



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand.

3v24-eow-bp

THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a First Premium and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (alike on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

E. W. HAINES, General Agent,

17 New Montgomery street, Grand Hotel Building,
SAN FRANCISCO.



It will pay any man who wants a Wagon to examine "The Whitewater." It has the reputation of being the BEST Farm Wagon ever sold in California. All sizes for sale by TREADWELL & CO., Sole Agents, San Francisco. Send for Price List.

PURCHASERS please say advertised in Pacific Rural Press.

STATE FAIR FOR 1872,

AT SACRAMENTO,

COMMENCING

On Thursday - - - the 19th,

AND CLOSING

On Friday, - - the 27th of September.

\$40,000

To be Distributed in Cash Premiums!

Exhibition to be divided into seven departments, and the SOCIETY'S GOLD MEDAL awarded to the most meritorious exhibition in each department.

THE LARGEST STOCK SHOW

Ever had on the Pacific Coast.

THE MOST ATTRACTIVE SPEED PROGRAMME

Ever offered in the Union.

The First Annual Exhibition of the California Wine Growers' Association to be held at the same time and place.

A GRAND PLOWING MATCH

To come off on the grounds.

A GRAND REGATTA ON THE RIVER,

In which eight or ten boats will participate.

A public sale of Thoroughbred Stock at the Park each day of the Fair.

The Central Pacific Company's railroads and steamers will carry all articles to and from the Fair FREE OF CHARGE.

Wells, Fargo & Co.'s Express will deliver all packages FREE not weighing over 20 pounds.

Applications for Stalls at the Park and space at the Pavilion should be made to ROBERT BECK, Recording Secretary, at once.

Memberships, \$5. Single Admission, 50 cents.

C. F. REED, President.

ROBERT BECK, Secretary.

6v4-td

TANK MAKING.

The undersigned having adopted TANK MAKING as their specialty, are now prepared to manufacture

Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood

FOR THE SPECIAL PURPOSE OF MAKING

LARGE WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.

1,000 to 2,000 gallons, bound with 5 hoops 1 ¾ x ½ and 1 hoop 1 ¾ x 3-16.

2,500 to 4,500 gallons, bound with 4 hoops 2 x ½ and 2 hoop 2 x 3-16.

4,500 to 7,500 gallons, bound with 5 hoops 2 ¼ x ½ and 2 hoop 2 ¼ x 3-16.

7,500 to 15,000 gallons, 6 hoops, 2 ½ x ½ and 2 hoops 2 ½ x 3-16.

15,000 to 20,000 gallons, bound with 8 hoops 3 x ½ and 3 hoops 3 x 3-16.

PRICE, - - From 1 ½ to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2 ½ inch thick, steamed and thoroughly seasoned, from 2c. to 3 ½ c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 ½ c. to 5 ½ c. per gallon.

REDWOOD CASKS (split lumber,) with oak middle piece and gate, from 7 to 9 c. per gallon.

OAK CASKS (full stock,) from 12 ½ to 15 c. per gallon.

Send for Price List.

For further particulars address.

M. FULDA & SONS.

Cor. Commercial and Drum Streets, S. F.

5v4-6t

WARNER & SILSBY

Manufacture all sizes of

Bed and Sofa Springs,

Which they offer to the trade at

reduced prices; also the celebrated

Obermann Self-Fastening Bed Spring.

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.

642 Mission Street, above New Montgomery, San Francisco.

23v3-6mbp

DEWEY & CO., American and Foreign Patent Agents, Publishers of the Mining and Scientific Press, S. F.

PATENTS obtained promptly; Caveats filed expeditiously; Patent reissues taken out; Assignments made and recorded in legal form; Copies of Patents and Assignments procured; Examinations of Patents made here and at Washington; Examinations made of Assignments recorded in Washington; Examinations ordered and reported by Telegraph; Rejected cases taken up and Patents obtained; Interferences Prosecuted; Opinions rendered regarding the validity of Patents and Assignments; every legitimate branch of Patent Agency Business promptly and thoroughly conducted.

Our intimate knowledge of the various inventions of this coast, and long practice in patent business, enable us to abundantly satisfy our patrons; and our success and business are constantly increasing.

The shrewdest and most experienced Inventors are found among our most steadfast friends and patrons, who fully appreciate our advantages in bringing valuable inventions to the notice of the public through the columns of our widely circulated, first-class journals—thereby facilitating their introduction, sale and popularity.

Foreign Patents.

In addition to American Patents, we secure, with the assistance of co-operative agents, claims in all foreign countries which grant Patents, including Great Britain, France, Belgium, Prussia, Austria, Victoria, Peru, Russia, Spain, British India, Saxony, British Columbia, Canada, Norway, Sweden, Mexico, Victoria, Brazil, Bavaria, Holland, Denmark, Italy, Portugal, Cuba, Roman States, Wurtemberg, New Zealand, New South Wales, Queensland, Tasmania, Brazil, New Grenada, Chile, Argentine Republic, AND EVERY COUNTRY IN THE WORLD where Patents are obtainable.

No models are required in European countries, but the drawings and specifications should be prepared with thoroughness, by able persons who are familiar with the requirements and changes of foreign patent laws—agents who are reliable and permanently established.

Our schedule prices for obtaining foreign patents, in all cases, will always be as low, and in some instances lower, than those of any other responsible agency.

We can and do get foreign patents for inventors in the Pacific States from two to six months (according to the location of the country) sooner than any other agents.

Home Counsel.

Our long experience in obtaining patents for inventors on this Coast has familiarized us with the character of most of the inventions already patented; hence we are frequently able to save our patrons the cost of a fruitless application by pointing them to the same thing already covered by a patent. We are always free to advise applicants of any knowledge we have of previous applications which will interfere with their obtaining a patent.

We invite the acquaintance of all parties connected with inventions and patent right business, believing that the mutual conference of legitimate business and professional men is mutual gain. Parties in doubt in regard to their rights as assignees of patents, or purchasers of patented articles, can often receive advice of importance to them from a short call at our office.

Remittances of money, made by individual inventors to the Government, sometimes miscarry, and it has repeatedly happened that applicants have not only lost their money, but their inventions also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency.

The principal portion of the patent business of this coast has been done, and is still being done, through our agency. We are familiar with, and have full records, of all former cases, and can more directly judge of the value and patentability of inventions discovered here than any other agents.

Situated so remote from the seat of government, delays are even more dangerous to the inventors of the Pacific Coast than to applicants in the Eastern States. Valuable patents may be lost by the extra time consumed in transmitting specifications from Eastern agencies back to this coast for the signature of the inventor.

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We take great pains to preserve secrecy in all confidential matters, and applicants for patents can rest assured that their communications and business transactions will be held strictly confidential by us. Circulars free.

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We have superior artists in our own office, and all facilities for producing fine and satisfactory illustrations of inventions and machinery, for newspaper, book, circular and other printed illustrations, and are always ready to assist patrons in bringing their valuable discoveries into practical and profitable use.

DEWEY & CO.,
MINING and SCIENTIFIC PRESS and PACIFIC RURAL PRESS Office, 338 Montgomery St., S. F.

Important to Wool Growers.



PURE BLOODED FRENCH MERINO RAMS FOR SALE BY ROBERT BLACOW, Of Centerville, Alameda County, Cal.

These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock.

LANDRUM & RODGERS,

IMPORTERS AND DEALERS IN

Cotswold Sheep and Angora Goats.

A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

We are expecting a large lot of Goats from the East.

Address LANDRUM & RODGERS,
2nd-3rd Watsonville, Santa Cruz Co., Cal.

THOS. BUTTERFIELD & SON,

Breeders and Importers of the

Cotswold, Lincoln, Leicester,

Texel and South Down

SHEEP.

Also, THE ANGORA GOAT.
Now offer for sale the Pure Bred and High Grades. We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

THOS. BUTTERFIELD & SON,
3rd-10th Hollister, Monterey County, Cal.

FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed.

Seventy-five head of the Silesian Sheep have arrived and are for sale by
26th-3rd ROBERT BECK.

WATT & McLENNAN, WOOL COMMISSION MERCHANTS,

625 Sansome street, corner Jackson, SAN FRANCISCO.

Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies.
10th-3rd

THE OLD Maple Leaf Nursery.

Has constant varieties of ORNAMENTAL GREEN and SHRUBS; also ment of Choice merous to Green House and Bulbs, and Flower Seeds of all kinds, are for sale by



ly on hand all FRUIT AND AL EVER-DECIDUOUS a large assortment of ROSES too numerous to mention. Plants, Flower Garden, Grass

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

H. K. CUMMINGS.
1858.

J. M. MAXWELL.
1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer.
4th-3rd

GEORGE HUGHES, FRUIT, PRODUCE, And General Commission Merchant,

313 and 315 Washington street,

Between Front and Battery.....SAN FRANCISCO.

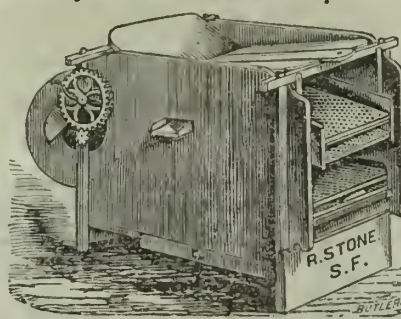
HOUSE ESTABLISHED IN 1850.
14th-3rd

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

WIESTER & CO.,
3rd-3rd 17 New Montgomery street, S. F.

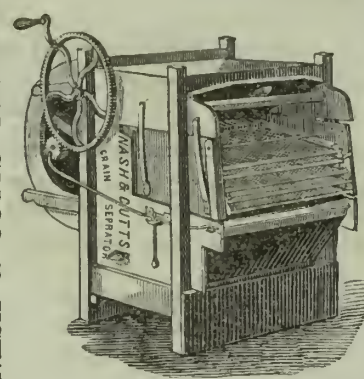
THE PATENT Novelty Mill and Grain Separator



Is one of the greatest Improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to
1st-3rd 422 Battery street, San Francisco.

NASH & CUTTS' PATENT



GRAIN SEPARATOR

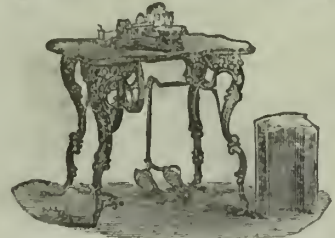
Three sizes, warranted to clean from 60 to 200 bushels per hour, according to size. Prices, \$40, \$50 and \$75. First Premiums at California State Fairs in 1870 and 1871. Warranted to separate Mustard Seed, Chaff, Barley and Oats, from Wheat. Cleans the Morning Glory Seed from Alfalfa.

Circulars mailed on application. Address

NASH, MILLER & CO.,

Sole Proprietors and Manufacturers, Sacramento, Cal.
N. B.—All the Nash & Cutts Steam Separators are fully warranted.
3rd-15th

THE FLORENCE



Will sew everything needed in a family, from the heaviest to the lightest fabric.

IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,
Than any other machine.

If there is a Florence Sewing Machine within one thousand miles of San Francisco not working well and giving entire satisfaction, if I am informed of it, it will be attended to without expense of any kind to the owner.

SAMUEL HILL, Agent,

19 New Montgomery Street,
Grand Hotel Building, San Francisco.

Send for Circulars and samples of the work. Active Agents wanted in every place.

WILCOX'S

IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most ECONOMICAL of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco.
16th-3rd

GUAVA AND MANGO SEEDS.

Just received, a fresh supply of SWEET, STRAWBERRY, and SOUR GUAVA; MANGO; MANGOSTEEN; fine PALMS. Also a fine collection of Seeds of RARE SANDWICH ISLAND PLANTS; AUSTRALIAN BLUE GUM TREE SEED, and five other sorts; a general assortment of SEEDS, RARE PLANTS, BULBS, etc. At the Old Stand. Catalogues, per mail, free.

E. E. MOORE,
425 Washington street,
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AND

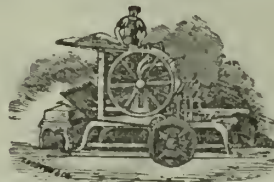
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PROPRIETORS.

EVERY VARIETY OF

PRINTING,

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Business Men, Corporations,

FARMERS,

AND ALL

Branches of Industry,

EXECUTED IN THE

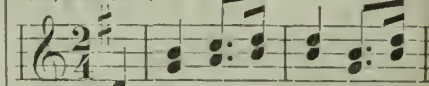
BEST MANNER,

AT REASONABLE PRICES

Music Printing

Executed correctly and with dispatch.

HOMER, SWEET HOME.



'Mid pleasures and pal-a-ces,

"Live and Let Live,"

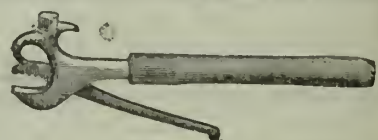
Having recently added a large assortment of new and elegant modern Types, together with one of R. Hoe's STEAM CYLINDER JOB PRESSES, we are prepared to execute all kinds of Fine Printing equal to the best work done either here or in the East, and at prices as low as in Chicago—or anywhere else.

Catalogues for Nurseries neatly printed. We have a great variety of wood engravings especially suited for this work. Orders solicited.

Address:

SPAULDING & BARTO,
(P. O. Box 582.) 414 Clay Street, San Francisco.

LONGSHORE'S COMBINATION TOOL.



This device is just what its name indicates. As a KITCHEN TOOL it is indispensable. It will fit and lift with perfect safety, any Stove Lid, Frying Pan, Pie Pan, Pot, Kettle, or any other vessel or dish used about a stove. It is a complete tool for stretching carpets, driving tacks, pulling tacks, &c., &c. It answers the double purpose of hammer and pincers, and is also a good Nut Cracker. It is made of the best malleable iron, and the Hammer, Pincers and tack puller are all hardened so as to stand the roughest usage. An Agent is wanted in every town on the Pacific Coast to sell this valuable little implement. Retail price fifty cents. Special inducements to agents.

WIESTER & CO.,
17 New Montgomery st. (under Grand Hotel), S. F.

THE ONLY RELIABLE COVERING FOR THE FOOT.

Good Cable Screw Wire BOOTS AND SHOES.

THE CALIFORNIA Safety Gas Lamp.

This New Gas Lamp takes the place of the Candle, the Coal Oil Lamp and Coal Gas, and costs only One-Half Cent per Hour.

Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. No CHIMNEY IS REQUIRED.

It makes its own gas as fast as it is required, and when the light is blown out the gas ceases to be generated.

One Burner is Equal to Six Candles. This Lamp burns Refined Petroleum, Gasoline, Den-ford's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit.

WIESTER & CO.,
17 New Montgomery street, Grand Hotel, S. F.

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,
Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide. This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at Marysville by
HILL & KNAUGH,
And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESSON & WILLIAMSON'S

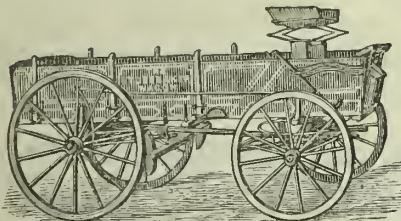


Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

14v2-3m
MATTESSON & WILLIAMSON,
Stockton, Cal.

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.

IRON AXLE,
THIMBLE SKEIN,
HEADER AND
SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

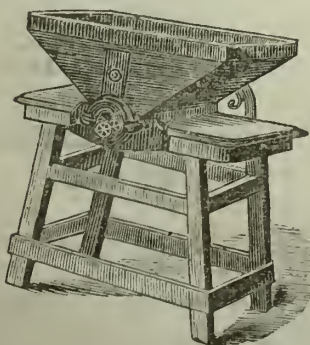
Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

16v3-3m
E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.

THE CELEBRATED
CHALLENGE FEED MILL.

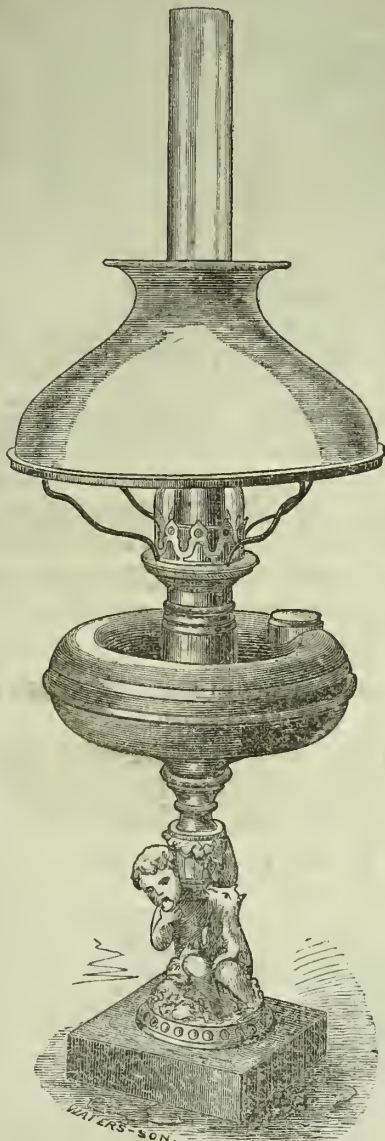


For Farm use and Custom work. The only Practical Farm Feed Mill ever invented. Can be used with from one to eight-horse power, and grinds from 250 lbs. to one ton of barley per hour. Price of Mills from \$75 to \$100, according to size. Adapted to Wind, Water, Steam, or Horse Power. The grinding surface is adjustable, and can be replaced in fifteen minutes at an expense of one dollar to one dollar and a quarter. Over 3,000 now in use. Every Mill warranted to give satisfaction. For sale by all leading agricultural firms on the coast. For further particulars send for circular.

M. S. BOWDISH, General Agent.
With Hawley & Co., cor. California and Battery sts., 18v3-3s
San Francisco.

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur, the worst consequence that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so the oil is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

State and County Rights for Sale. Agents Wanted.

The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

I. L. MERRELL,

Nos. 10 and 12 Third Street, San Francisco.

THE "JONES" PLOW.

Manufactured by the Naperville Agricultural Works, Naperville, Illinois.

First they are unlike other Plows—Because they completely pulverize the soil, and run perfectly true.

Because—They all have Adjustable Beams, and CAN BE USED BY EITHER TWO OR THREE HORSES.

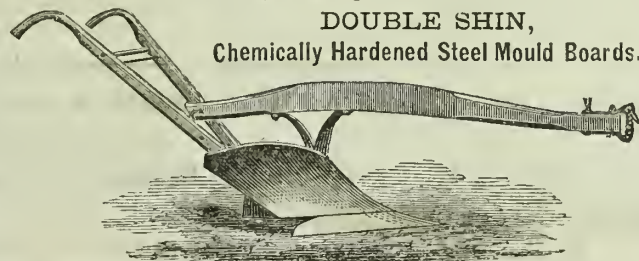
Because—THEY SCOUR WHERE ALL OTHERS FAIL.

Because—THEY DO TWO KINDS OF WORK, thus saving to the farmer ONE PLOW.

Because—They are the lightest draft plow made, and will not kill your horses. Because every plow is warranted and can be tried, and if it fails may be returned. Because they are honestly made, and will wear one third longer than the best quality of Lumber. They are HARDENED ALL THROUGH (not case-hardened, or merely hardened on the surface,) but by the use of CHEMICALS KNOWN ONLY TO OURSELVES, we refuse the steel and MAKE EVERY MOULD BOARD CLEAR THROUGH AS HARD AS FLINT.

The Jones Plow completely refutes the old notion that no plow can work equally well in stubble or sod. We warrant them to do it in every instance. No matter if every other plow manufacturer has failed to make such a plow. We have succeeded. Let true merit decide; if you have any doubt, TRY THEM—WITH YOUR FAVORITE, and keep the one you like best.

DOUBLE SHIN,
Chemically Hardened Steel Mould Boards.



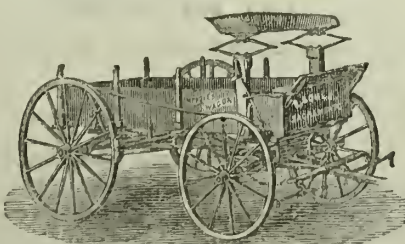
the common run of plows. Because they ARE VICTORIOUS OVER ALL OTHERS in the various plowing trials in which they have been used.

Only the best class of material is used in them—the finest grade of steel

TREADWELL & CO.,

Sole Agents for the Pacific Coast, San Francisco.

17y27-cow



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best Improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

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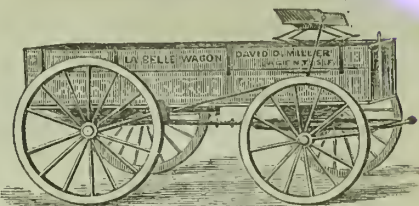
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Thimble-Skein Farm Wagons.



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Manufactured by FARNSWORTH, WOODWARD & CO.,
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PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.

3 in Thimble Skein..\$120	3 in Running Gear..\$90
3 1/2 " " " " 125	3 1/2 " " " " 95
3 3/4 " " " " 130	3 3/4 " " " " 100
4 " " " " 140	4 " " " " 110

Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

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STOCKTON, August 7th, 1872.
Messrs. DEWEY & Co.—I wrote to you last winter, stating to you my situation and condition, and asked you to send me the RURAL PRESS, and that I would pay you immediately after harvest. The next week, to our great joy, the paper came, and to ourselves we thanked you ten thousand times for your kindness and generosity. We now enclose the money to pay you according to promise. I want the MERCANTILE DIRECTOR, and if I rightly understand you, by paying my \$4 for the Press, I can get the DIRECTOR at half price. I will enclose you \$4.50, and if there is any misunderstanding about it, let me know and I will make everything satisfactory. If possible, send the back numbers. I am bound to take those two papers if I have to work by night to get the money to pay for them. With many thanks for your kindness in accommodating me, I remain truly yours,
D. E. RICE.

LIST OF PREMIUMS

ON WINE, BRANDY, GRAPES, ETC.,

As agreed upon by the Board of Directors of the

California Vine-Growers and Wine and Brandy Association.

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Best grape brandy, vintage 1871.....	\$25
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Best grape brandy, vintage 1869.....	25
Best grape brandy, vintage 1868.....	25
Best grape brandy, vintage 1867 or older.....	Diploma.

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Best white wine, vintage 1871.....	\$25
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Best white wine, vintage 1869.....	25
Best white wine, vintage 1868.....	25
Best white wine, vintage 1867 or older.....	Diploma.
Best red wine, vintage 1871.....	25
Best red wine, vintage 1870.....	25
Best red wine, vintage 1869.....	25
Best red wine, vintage 1868.....	25
Best red wine, vintage 1867 or older.....	Diploma.

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Best white wine, vintage 1870.....	25
Best white wine, vintage 1869.....	25
Best white wine, vintage 1868.....	25
Best white wine, vintage 1867 or older.....	Diploma.
Best red wine, vintage 1871.....	25
Best red wine, vintage 1870.....	25
Best red wine, vintage 1869.....	25
Best red wine, vintage 1868.....	25
Best red wine, vintage 1867 or older.....	Diploma.

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Best California port wine, vintage 1871.....	\$25
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Best California sparkling wine, vintage 1871.....	25
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Miscellaneous.

Best samples of grape syrup, not less than one gallon.....	\$20
Best sample of grape sugar, not less than five pounds.....	20
Best twenty-five pounds of raisins.....	50
Best still.....	50
Best grape crusher and separator.....	50
Best and cheapest tank, cask or butt for wine or brandy for storage.....	50

Grapes.

Best twelve varieties of the table grapes, not less than three bunches each.....	\$25
Best six varieties of table grapes, not less than three bunches each.....	20
Best three varieties of table grapes, not less than three bunches each.....	15
Best two varieties of table grapes, not less than three bunches each.....	10
Best one variety of table grapes, not less than three bunches each.....	10
Best twelve varieties of wine grapes, not less than three bunches each.....	20
Best six varieties of wine grapes, not less than three bunches each.....	20
Best three varieties of wine grapes, not less than three bunches each.....	15
Best two varieties of wine grapes, not less than three bunches each.....	10
Best one variety of wine grapes, not less than three bunches.....	10
Best and greatest variety of grapes, not less than three bunches each.....	60
Second best and greatest variety of grapes, not less than three bunches each.....	40

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SPARKLING RUBIES! Sabbath School Song Book. Price 35 cents. None who try it can help liking it.

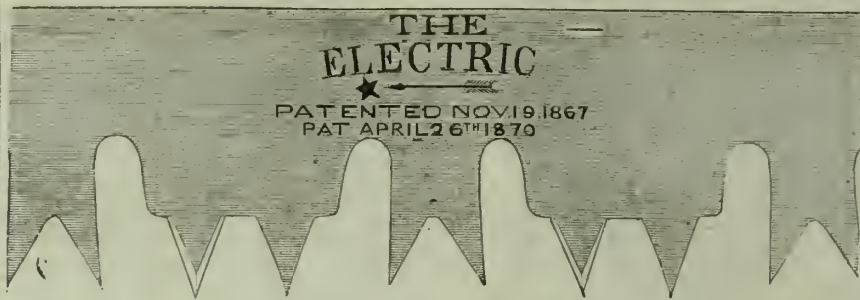
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Every Saw is warranted perfect in material, temper and workmanship. PERFECT SATISFACTION GUARANTEED.

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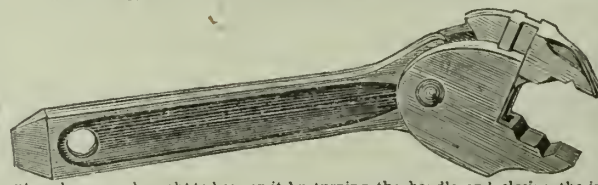
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LINFORTH, KELLOGG & CO., Agents.

PATENT CRAB WRENCH.

This Wrench will grip nuts of all sizes, without loss of time in adjusting. It will not slip, and will work where any other Wrench will apply.



Another important feature: The Wrench being composed of three pieces (i. e., each jaw is stamped A and B, the handle C, and each of these pieces is also numbered according to size of Wrench), any one of these pieces becoming useless from "wear and tear," a new piece can be substituted for a trifling expense, making the Wrench as good as new.

It can be used with one hand, as it will grip the nut as soon as jaw A comes in contact with the nut, and pressure brought to bear on it by turning the handle and closing the jaws.

We have four sizes—Nos. 2, 3, 4, 6. No. 2 will grip from a 1 1/4 inch nut down to No. 3 from a 1 1/2 inch; No. 4 from 2 inch; and No. 6 from 3 inch down. It is recommended for cheapness, strength, durability and its self-adjusting quality, which render it superior for quick work. Although a comparatively recent invention, it is now being used extensively in Pittsburg, Cleveland and other Western cities, where the engineers and machinists are enthusiastic in its praise.

Give it a trial, and it will speak for itself. Send for a price list. aug24 2t16p

LINFORTH, KELLOGG & CO., SOLE AGENTS.

BLAKE'S PATENT STEAM PUMP.

SALEM, Oregon, January 16th, 1872.
Messrs. TREADWELL & CO., San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump (20—12—24), our company purchased of you, we would say in all sincerity that the Pump has EXCEEDED OUR EXPECTATIONS. It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is SIMPLE, DURABLE, and PERFECT in its construction. We have found it entirely satisfactory, and just the Pump in every respect needed for our work.

Yours, respectfully,

W. F. BOOTHY, Pres't Salem Water Works.

All sizes, for Mining, Tank and other purposes, for sale at TREADWELL & CO.'S Machinery Depot, San Francisco. 8v25eow-lp

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The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

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As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

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Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other. 3v24-eowr

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HOADLEY'S
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S. P. THOMAS, Sacramento, Cal.

—OR—

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THIS DAY RECEIVED,

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Spanish Merino Bucks and

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VERMONT STOCK,

The Best Ever Imported to this State.

Call at Ninth and Market streets, or Morton House. San Francisco.

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CO-OPERATIVE MARBLE WORKS.

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21v2-1y

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FRESH GARDEN SEEDS.

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Grass and Clover Seeds.

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Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

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Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,

In quantities to suit purchasers.

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GEO. F. SILVESTER.

IMPROVE YOUR POULTRY!

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GOOD FOWLS THAN

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Successors to C. C. & R. H. Parks, Wankegan, Ill. Organized under the laws of the State of Illinois.

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SHORT-HORNED CATTLE

Thoroughbred and Trotting Horses, Cotswold

Sheep, Improved Berkshires, and

Pure-Bred Poultry in Great

varieties

Stock of all kinds for sale at reasonable prices. Send for Catalogue giving full description. Address

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Family Sewing Machine

IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium

At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.

Call on or address

WILLCOX & GIBBS S. M. CO.,

113 Post Street, S. F.

22v2-9m

N. GILMORE,

Importer and Breeder of

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GOATS

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PURE BLOOD

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ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all part of the State. For particulars address

5v3-tf

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El Dorado, El Dorado county, California.





Volume IV.]

SAN FRANCISCO, SATURDAY, AUGUST 31, 1872.

[Number 9.]

Rotation—Wheat, Oats, Sheep.

Our plowed fields are annually losing their fertility under a system of constant cropping with too much of one variety of grain. The immensity of acres devoted to wheat in California and the peculiarities of our climate, allowing no opportunity of rotating with corn or other hoed crops, to which manure can be applied, and the entire lack of a sufficient quantity of manure, even if we could use it, have given rise to a serious question as to what course can be adopted to keep up the fertility of our wheat fields.

At present we cannot manure with phosphates owing to their cost. We must therefore adopt some system of rotation, by which we can return to the land the proper amount of fertilizers. We have shown in previous numbers of the RURAL, that the straw of wheat cannot be plowed under with advantage because it cannot rot speedily enough for our purpose, and if it did, it does not contain all the elements of fertility desired.

New System of Rotation.

We have recently had an interesting conversation on this subject with Mr. T. L. Grigsby, whose farming operations are carried on in Napa valley, seven miles up, on the east side.

From him we learn that a system of rotation covering but three years has been adopted by him with the most favorable results. His plan is, first year, wheat. As sheep, at the rate of five to an acre of wheat, constitute a feature of his plan, they are turned upon the stubble immediately after being cleared of the wheat.

The second year the land is sown with wild oats for hay and the winter feeding of his sheep. Upon this stubble, sheep are also turned, which tread in sufficient seed for a volunteer crop of the same on the third year; or it may be resown with wild oats. During this third year the field is devoted exclusively to pasturage.

Good Effects of the System.

Here we have a rotation in which sheep play an important part, in being allowed to feed on two of the fields for a part of the year and on one, for the entire year. Sheep are the most effectual weed extirpators of any animal on the farm; no nook or corner that they will not find and no weed that doesn't get itself stripped of its leaves or eaten entire.

But the most important part that sheep play in farm economy is the converting of everything they eat into the best kind of manure, and what is of great importance again is, that they perfectly distribute it over every part of the fields on which they feed, and more minutely divided than from larger animals.

The field on the third year having been devoted to constant pasturage, is abundantly manured for the following crop which is wheat. Mr. Grigsby, believes that his land is annually improving under this system of rapid rotation, at the same time that his sheep keep down the weeds better than a year of fallow would do, and save the loss of the land on the year of fallow.

Wheat Straw for Hay.

On suggesting that wheat would produce more hay on the hay year than wild oats, Mr. G. met us with the argument that as all plants exhaust the soil of properties peculiar to themselves, so two seasons of wheat would exhaust the soil of its wheat-producing qualities more than to crop one of the two years with oats.

It was evident to us that Mr. G. had given the subject very careful consideration and thought, and we are not sure but he has hit upon just about the only kind of a rotation applicable not only to small farms, but to those that number their thousands of acres. It is a system of constant manuring with almost constant or annual cropping without impoverishing.

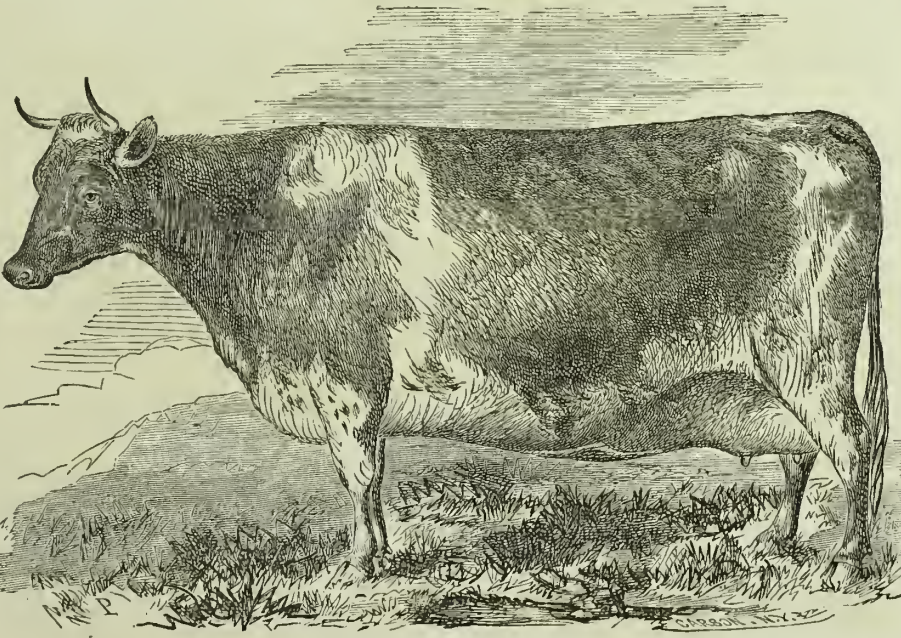
Ayrshire Cattle.

We herewith present an engraving of the famous Ayrshire cow, Daisy, the property of J. D. Patterson, Esq. We introduce her as a fair type of this breed of improved animals whose reputation as long ago as 1863 was so well established that a herd-book of Ayrshires was issued in that year under the auspices of the "Association of Breeders of thorough-bred neat stock,"—H. A. Dyer of Con. Secretary—in which are recorded the pedigrees of 79 males

country were made upwards of twenty years ago, but the animals were neither numerous nor generally in the hands of persons who took much pains to increase them. It was not, therefore, until a comparatively late day that the Ayrshires were much known here, or that specimens were sufficiently numerous to indicate the permanent establishment of the breed in this country.

It will be understood, from what has already been said, that the dairy is the leading object with the breeders of Ayrshire cattle. At the same time the important fact has not been overlooked, that to breed and perpetuate a profitable dairy stock regard must be had to hardiness and strength of constitution, and also to such fattening tendencies as will insure a profitable return from calves, fattened for veal, from steers, reared for beef, and from cows, which, having served their turn in the dairy, are at last dried of their milk and prepared for the shambles.

The importance of these properties is not sufficiently regarded by keepers of dairy stock in this country. Even if milk were the sole object, it would be impossible to preserve a breed



AYRSHIRE COW—"DAISY."

and 217 females, nearly all owned in New England.

Their History.

In the Agricultural Report of 1863 we find the following in relation to this valuable breed of animals:

The leading cattle breeders of Britain have of late years, for the most part, aimed to establish in their stock some particular property in a high degree, beef or milk, according to circumstances, being the leading object. Hence it has occurred that British cattle have latterly been classed under the heads of "beef breeds" and "milk breeds." Prominent among the latter is the Ayrshire breed, which originated in the county of Ayr, Scotland, and within the last fifty years has been disseminated over every part of that country where dairying is much practiced.

The breed has also been established in the north of Ireland, forming in several counties the leading stock. A great number of the cows are annually taken into various districts of England, while in several countries of continental Europe the breed has been introduced, and is propagated with care.

It has also been introduced into the United States and the British provinces of North America, and, at the present time, is probably more extensively kept as a dairy breed than any other in the world.

Importations of Ayrshire cattle into this

possessing superior qualities in this respect, without giving attention to those points of form which denote strength of constitution. It has been well observed by Magne that "in the breeding of dairy stock we should make choice only of animals possessing the two-fold character of general vigor and activity of the mammary system."

These principles have been followed to a considerable extent by the leading breeders of Ayrshires in Scotland. Hence they claim a high rank for the breed in reference to general usefulness. Aiton, in speaking of what the Ayrshire cow will do, says "she yields much milk, and that of an oily or butyaceous, or caseous nature, and after she has yielded very large quantities of milk for several years she shall be as valuable for beef, as any other breed of cows known; her fat shall be much more mixed through the flesh, and she shall fatten faster than any other."

Few trials have yet been made with the Ayrshires in reference to fattening in this country, as most of the males have been kept for bulls, and the females have seldom been turned for beef till too far advanced in years to breed. As they become more numerous, however, the males will be more frequently castrated, and their value for beef, and also for labor will be ascertained. Some breeders of the stock are now rearing steers, with the intention of working them in yoke. There is no reason why Ayrshire oxen should not be equal to any of their size for labor. They are about the size of Devons have clean, strong legs, well placed muscles, and are generally very quick walkers.

Wheat and Flour.

During the past month the wheat market has been pretty steady, averaging \$1.60 for milling wheat, and \$1.55 for shipping. The lowest price for shipping has been \$1.50, and for milling, \$1.55. On the 30th of July the market took a turn upward, and \$1.62½ was paid for good milling. But this rise was sustained for only two days, for on the 2d of August it was down again to \$1.60. It again rose to \$1.62½ on the 12th, and \$1.65 on the 14th; on the 19th of the present month the market became weaker, and on the 20th the highest shipping price was \$1.50. Subsequently the milling price came down to \$1.50 and \$1.55, at which latter figure it now remains. These fluctuations have been mainly caused by a sympathy with those of the Liverpool market, the causes of which may be attributed to the great number of contradictory reports as to the state of the crop in Europe and America.

On the 12th, when it was quoted at 12s. 4d., the reports as to the condition of the crop were decidedly unfavorable. It was represented that the crops in Southern Russia and Hungary, the granaries of Europe, were far below the average, on account of the continuance of cold and wet weather during the summer. At that time also, the wheat of the south and west had not begun to arrive in Chicago, where quotations were consequently high. Since, the Chicago market has come down with a crash, on account of the unexpectedly large receipts. It fell in one day, from \$1.70 to \$1.12, and hundreds of wealthy dealers were utterly ruined. This coupled with probably more encouraging reports from the continent of Europe has led to the fall in the Liverpool market, and the corresponding one here. Farmers in the interior are holding back, waiting for better prices; notwithstanding the receipts during the last month have been larger than they have ever been before; so have the exports. There is little doubt that prices will remain low for several months, until the great inpour for export has

passed away. Tonnage has risen to \$22.87½ to Liverpool, and \$23.12½ to Cork, and a small barque has been engaged for the latter place, at \$25. It is now stated that tonnage to Liverpool will command the latter figure, and, considering everything, it is not unlikely.

The receipts from the interior from the 20th of July to the 21st of August have been, 1,139,366 cents, and those from Oregon and coast ports during the same interval, 5,188 cents, while the exports, though unusually large, have not been more than two-thirds of this amount. But from this, even a considerable reduction must be made, as a large number have loaded at Oakland and Vallejo. The fact is, that the immense quantity available for export, 8,000,000 of cents, of which not more than one-seventh has been yet shipped, must render prices cheap and freight still dearer.

LECTURE ON PRESERVING FRUIT, ETC.—Dr. Ezra S. Carr will lecture at an adjourned meeting of the Oakland Farming Club, in the chemical lecture room of the State University, on Friday Eve., Aug. 30. A discussion will follow. Samples of a new style of California made packages for sealing and transporting fruit, lard and other kinds of food will be exhibited. The public are invited free to the meetings of this progressive institution.

THE HORTICULTURAL FAIR at the Floral Hall, on Stockton street, is daily thronged with visitors. It is a complete success.

CORRESPONDENCE.

Angora or Cashmere Wool.

There is considerable excitement just now in California on the subject of sheep and goat growing, more for the value of their wool than for mutton. Owing to the great necessity for woollens in all their variety throughout the world, there must always be a certain annual demand for a large quantity of the wool of sheep; but it does not necessarily follow that prices for the same will always rule high.

Farmers and others have seen the fallacy of holding on to wool for higher prices during the last four months, and many are now changing their minds in regard to greatly enlarging their present flocks of sheep. Others are making arrangements to engage largely in the growing of Angora or Cashmere goats, with the view of having a commodity in their fleece, more surely marketable and at a higher figure and larger profits than from sheep.

We would not discourage any one in the laudable desire of increasing the variety of sources from whence to derive a profit upon time and labor or capital employed, nor would we wish to do ought to check the present disposition to extend the growing of the Angora goat; but as faithful and reliable chroniclers of facts pertaining to the interest of the farmer, and as many look to the RURAL PRESS for such information, we feel it our duty to lay before them the following letter a few days since received.

EDITORS RURAL PRESS:—Your communication of the 26th inst. to Messrs. Davis & Foulke was handed to us, as their successors in the wool trade. We have never purchased the Cashmere wool, neither have our predecessors. Occasional lots have found their way to them on consignment and they, as well as ourselves have made more than ordinary efforts to find a market for the stock, but without any success worth recording. The fact is, no market exists in this country for this class of wool, and any investments made with a view to profit from the fleece are likely to be below par for some time to come.

Yours very truly,

FISS, BANES, ERBEN & Co.,
No. 24 South Front St.

Philadelphia, August 13, 1872.

The following we clip from the *American Agriculturist*, New York.

Cashmere Goats.

"A. F. L." Lebanon, Mo., sends a sample of Cashmere goat's hair, with a request to learn its value. We find there is no market in New York for this wool; the skins, with the fleece on, are bought in a small way, and used for trimming ladies' dresses.

It is not likely with the present considerable production that any regular market will be established for the wool, and we would not advise any investing in these animals. Our correspondent thinks his goats a nuisance; some others probably agree with him."

Now, though the prospect of an immediate demand for Cashmere wool at high prices, may not be as flattering as we could wish, still as the product is one of great beauty and excellence and manufactures from it are costly and far from common, we have no doubt but that the very fact of an accumulation of the wool to a large extent, will have a direct tendency to create a market, inasmuch as its very abundance must cause it to start on the market at a low rate.

Will some grower of Cashmere wool in California tell us to whom he has sold his wool and to what extent and what prices sales can be made? It is to be feared that under the present excitement for the possession of Cashmere, or more properly, Angora goats in California, that large numbers of low grade goats will be palmed off upon us as full bloods, from the unprofitable flocks of the Atlantic States.

The safest way for those wishing to commence in the business, is to procure their stock from resident California breeders, who can not only guarantee the purity of their stock but are here to be held responsible for what they sell.

Southern California.

EDITORS PRESS:—I cannot leave this beautiful country with the grateful verdure of its orange groves and almost tropical geniality of earth, air and sky, without a few more words with your readers. I confess a partiality for Southern California, bred and fostered these many weary years of wanderings up and down the earth in search of some terrestrial paradise.

Leaving these shores more than twenty years since—a valetudinarian, only hoping for a sepulchre in the native hills, where Atlantic's breath moved the evergreens; and again fleeing before her too-fierce blasts, only glad to return for a resting place among the Azalias and the Madroñas of the Pacific, it is natural that this foster-mother upon whose breast her child has so often reclined, should have attractions of no mean order.

But these flights of retrospection must give way in this utilitarian age, and I must get down to my allotted work, a work in which all should delight; that of finding out and recording anything which the edge of the sharp points and rugged ways which patient labor has to encounter on the road of life, may be smoothed and rendered more endurable.

Cheap Transportation.

Steam, lightning, and the most refractory elements have been subjected, and yet the field is wide for improvement. Narrow-gauge railways that shall carry freight at just sufficient cost to pay the running expenses, interest and wear, owned and operated by the producers or in their interest, would make an earthly elysium to bless less favored climes. Is not the prospect a pleasant one to contemplate if never realized?

The pastoral life in this lovely country may be monotonous, but it is without doubt profitable. But few of the present owners of flocks, that are now counted by thousands, invested any great amount of capital in the beginning; most of the shepherds, or those that are now in comfortable circumstances through the simple increase of their stock, started poor.

There are certain persons, however, who have been seated in the lap of fortune from the start; and who shrug their shoulders at any suggestion made by a poor correspondent as to improved methods of breeding or manipulation—but we can well afford to stand the sneers of these conceited and pampered brethren—who will yet recognize our merit and their error.

The Tobacco Application.

Speaking of shepherds—leads us to mention an improved method in use upon the estate of Mr. Burnett—who has some thirty thousand improved sheep of South-down breed, of dipping in tobacco. The yards and pens are so arranged on a slope, that a string of sheep are continually passing to and from the dipping vats.

A car is adjusted to run out over the vat and dump the sheep so that three men handle well and easily three thousand in ten hours. Mr. John Valance the managing foreman, stated that since he learned the temperature which was necessary to extract the strength from tobacco, without destroying or carrying off the nicotine (about 135° Fah.), he has no trouble in keeping the flocks healthy and free from scab.

Messrs. White & Denman have also shown considerable enterprise and liberality in their efforts to improve the flocks of California; the latter gentleman having just returned from the Vermont breeders with a flock of 160 of the best sheep that could be procured in that famous region for fine breeds. The prices paid, ranged from \$40 to \$200.

Birds of Prey.

Take the country as a whole, there is no question as to the superiority of the soil and climate of Southern California. The only fear is of speculative operations which are carried on by reckless gamblers who are always ready to imperil the best interests, for a chance gain, and do not hesitate at any misrepresentations to further their ends. A flock of these horned birds of prey have hovered over Southern California for the past few years—almost irretrievably damaging her best interests.

F. M. SHAW.

Los Angeles, Aug. 14, 1872.

A Successful Hunt.

EDITORS PRESS:—R. Long and M. Glore returned from a hunting tour on the 14th of August. They were absent four months

in the northern part of the State, as far north as Humboldt Co.

During their absence they killed one elk, one black bear, two brown bears and 142 deer. They had two riding horses and three pack mules. They left the bear skins in camp, their mules being too heavily laden with deer skins. These men hunt for the paltry sum they get for the skins.

One hundred and forty-two deer are a large number to kill from the 1st to the 14th of August—when the law allows the killing—and travel from Humboldt Co. to Vacaville with pack mules. There should be some way to enforce the law and prevent this wholesale slaughter of deer.

A FRIEND TO THE DEER, LAW AND ORDER.

August 19th, 1872.

"We censure" in the sentiment of the writer in his view of the matter.

Wines—Influence of Soils.

The following interesting letter was forwarded to I. N. Hoag, to be read before the Vine Growers' Association, at Sacramento, and sent to us for publication, if deemed of sufficient interest. We so consider it, and give it place in our columns.

DEAR SIR:—Your kind invitation to me to be present at the Vine Growers Association of the 25th inst. was received, and I regret it is not convenient for me to accept it. Much good must result from a mutual exchange of ideas.

As vine growers and wine makers we have much to learn. With the finest climate in the world our wines have yet failed to reach that high point of excellence attained by some European brands.

With such an extensive territory and great diversity of physical aspect, surely some localities can be found possessing the requisite chemical properties. Many of our vineyards have been planted without any regard to fitness of locality and for the reputation of the State had better never have been planted at all. We must ever bear in mind that we can create nothing—that the soil must possess in proper proportion the elements essential to produce excellence or it cannot be obtained—an excess may be as detrimental as a deficiency. While potash is essential to the growth of the vine, it enters into the juice in the condition of a carbonate, and when in excess, is destructive of the best properties of the wine.

Effects of Alkali.

The primary globules of essential oils await the generation of alcohol to be acted upon, but while alcohol will dissolve them and the acids, it will not act upon the carbonate of potassa, but the latter having a greater affinity for tartar than carbon, parts with its carbon and unites with the tartar and forms the tartrate of potass, which crystallizes on the sides of the casks, etc., thus depriving the wine of one of its best properties.

The presence of potassa also checks fermentation, and is the cause of so much of our wine persistently refusing to clarify itself.

There are other reasons why our success has not been complete; it is our province to investigate therein and provide a remedy; in no way can that investigation be better conducted than by each one freely and candidly relating his experience and discoveries.

Trusting that the association may faithfully fulfill its requirements, believe me truly yours, etc.,

E. SMITH.

Shingle Springs, El Dorado Co.

Vinegar from Melons.

EDS. PRESS: Will you please inform me, in the next issue of the Press, how to make "pure cider vinegar" out of water-melons, as spoken of in your small work on "Sugar Making;" also the time required, and oblige

o. c. w.

San José, Aug. 19, 1872.

Express the juice from the watermelon by any convenient method and strain it through coarse woolen cloth. Set the juice away to ferment as you would cider. When the vinous fermentation is complete, which will be in a few days, draw off the liquor into another cask two-thirds full, add a small quantity of the "mother of vinegar" and the acetous fermentation is rapidly accomplished, resulting in excellent vinegar; and in the space of six weeks from the melon.

It will make vinegar without the aid of "mother," but a longer time is required for the acetous fermentation to accomplish its purpose.

San Jose—Santa Cruz.

The *Chronicle* has a correspondent who writes of San José in this wise: This city is improving wonderfully. And no wonder. With its energetic people, its wealth, its vast resources, and its fine climate, it has all the elements of success. The crops are looking splendidly. The fogs have been rather more frequent than heretofore. There is no doubt, however, but that the immense crops will be harvested in due season. When we consider the price of seed, the high charge for sacks, and the enormous rent paid in some instances by small farmers, it is apparent that this most industrious part of our population have very little margin for profits. If there is a laborer who is worthy of his hire, it is the man who, persevering through two successive failures in crops, risks his labor and money the third time in trusting to the bounties of earth and clouds.

Hop Raising.

This industry is very profitable. The yield will be immense. I visited a plantation having under cultivation about fifty acres. The yield will be at least one hundred thousand pounds, which at ruling rates would realize \$60,000 for fifty acres. It is not expected that the business will run as low again as it has in previous years. It will take three hundred Chinamen six weeks to harvest the crop mentioned. In the Eastern States the picking is done by women and children. There is little doubt but that a sufficient number of women and children might be obtained in San Francisco to pick our hops. They will camp out, which cannot be done in the East. Thus, the money expended for picking, instead of finding its way to China, might be kept at home. This project might be experimented on with profit.

In Santa Cruz the corn almost reminds one of small pine trees. Thousand of acres of it are under cultivation. Watsonville also raises corn and squashes in great quantities. A large-sized railroad is growing on to one end of the town. The crops all through the Pajaro and Salinas valleys are looking better than I have ever seen them before.

A Prosperous Town.

Hollister is the liveliest small town in the State. The noise of hammer and saw may be heard in every direction, and the town is constantly filled with teams of every description. The business men are all active. As Hollister will for a long time be the terminus of the road in this valley, she will derive a great revenue from the San Benito and Tres Piños valley, the numerous quicksilver mines about her and the rich agricultural district surrounding the town. The yield of grain in this section will be extremely large. Gilroy is also improving rapidly. There is an abundance of game this season. Quail, hare and rabbits are plentiful. Deer are unusually tame; an occasional bear can be found by those who think they have lost any, but I haven't.

The Grain in Danger.

In several of the agricultural counties it is a question with the farmers what to do with their grain crop to preserve it from loss. They have neither the means of transportation nor houses in which to store it during the rainy season. It is said that the entire valley country between Marysville and Vallejo is filled with piles of grain, a great part of which is exposed to the danger mentioned. The Marysville *Standard* says the Sutter county farmers who could last year haul their grain to the railroad depots on the line of the road are now forced to deliver it at different landings on Feather river, haul it to Yuba City or to Marysville. There is but one steamer running on the Feather river in the grain trade, and the probabilities are that the farmers of Sutter, as well as along down the valley, will be caught by the rainy season and the grain destroyed. Some effort should be made by the extensive grain dealers of this city to avert the impending calamity. There are certainly enough idle vessels in this port, at different points on the Bay and Sacramento to reach all the grain along the navigable streams, and it is within the power of these men to furnish them. At points remote from rivers and railroads the farmers will have to do the best they can for the protection of their harvested crops.—*Call*, Aug. 24.

POULTRY NOTES.

Poultry Keeping for Women.

The *Poultry World* has the following correspondence that will interest the ladies who have an eye to the practical.

There are many women who, especially within the last half-dozen years, while the price of eggs has been so high, make money much faster by tending poultry than by sewing. It is an occupation especially suited to women, because it involves patience and constant attention to details, rather than strength. Then again the hardest thing for many men to learn, in handling either poultry or bees, is gentleness. How many times we have seen boys, and men with no more sense than boys, jerk hens roughly from their nests, enter the poultry-house abruptly and frighten the occupants till they rush in a fluttering mass into the farthest corner, and keep the poultry community in constant agitation and distress.

But all domestic animals appreciate the manners of women attendants when they are fortunate enough to be cared for by them. Now that there are women gardeners, and florists, who by commendable industry and business qualities have risen to eminence in those callings, and while one of the most successful if not the most successful bee-keepers in the whole country is a woman, we hope to see others give poultry more attention than it has heretofore received. Aside from profit, the keeping of fine poultry for fancy is an elegant pastime very popular with English ladies, and we see no reason why the fashion should not be adopted here.

DOMINIQUE FOWLS.—The *London Field* says of this variety, which it denominates American: "There are two or three useful and good breeds of poultry that are not well known in England. One of the oldest established, and certainly one of the most useful, is the Dominique. This breed more closely resembles our Cuckoo Dorking than any other English variety. It differs, however, in having only four toes—a great advantage by the way, in a practical point of view—and in the legs being yellow. Each feather is of a light gray, barred across with darker slaty blue bars or pencilings. The Dominique cocks are showy birds, with full saunders and hackles, and abundant, well matched sickle feathers. They should weigh from six to eight pounds when mature. As table fowls, they should necessarily be short legged, full chested and broad in the back. The ear lobe should be red, and the wattles and comb neat; the former of medium size. The merits of this breed will recommend them to persons residing in the country, as well worthy of promotion in the poultry yard, whether as makers of eggs, or of meat, as sitters, or nurses, they are invaluable.

CLEANLINESS IN THE POULTRY HOUSE.—The poultry house should often be cleaned, especially in summer. In the spring it must be thoroughly gone over in every part, for absolute cleanliness is one of the essentials to success in poultry keeping. Carbolic acid dissolved in water, should be sprinkled over the floors, and other wood-work of the house, and a little may be added to the whitewash that is used for whitening the partitions, ceilings, etc. The material for nests should be often changed, as they are most apt to get foul, and especially so if the poultry do not have entire liberty, since the more artificial the treatment, the greater care will be required in the manipulation. They must be regularly fed, with a variety of food, have plenty of pure water and sharp gravel, comfortable quarters, and good nesting places, if you expect to reap a harvest of eggs, and chickens, as the result of the care bestowed upon the poultry. The additional labor will return good dividends.—*Boston Journal of Chemistry.*

INFLUENCE OF FOOD ON POULTRY.—The influence of the food of poultry upon the quality and flavor of their flesh and eggs has not generally been taken into consideration; but it is now well ascertained that great care should be exercised in regard to this matter. In some instances it has been attempted to feed poultry on a large scale in France on horse-flesh, and, although they devour this substance very greedily, it has been found to give them a very unpleasant flavor. The best fattening material for chickens is said to be Indian corn-meal and milk; and certain large poultry establishments in France use this entirely, to the advantage both of the flesh and of the eggs.

THE DIAMOND FIELDS.—The *Tucson Citizen*, of the 15th, speaking of the *Bulletin's* article on the diamond discoveries and the location of the diamond field in the southern portion of the Territory, near the Sonora line, says: "In this, all are quite positive that journal is misinformed, and if the diamond stories are true in the main, we have many reasons for believing that the excitement is based upon stones found near, and probably in the northeastern part of Arizona. We will go slow, and watch developments, neither rushing any to go to or stay away from wherever they choose to believe the gems exist."

THE SWINE YARD.

The Economy of Hog Raising.

An exchange says:—"It is a fact established beyond contradiction, that hog raising does not pay if they cannot be brought to a killing weight of at least two hundred pounds within twelve months. Suppose a hog is kept two years and fed through two winters of five mouths each. Allow them only four ears of corn each, per day, would amount to twelve bushels of corn, besides fourteen months' pasturage. Add eight bushels more for fattening, makes a total of 20 bushels at one dollar—twenty dollars. At three months old the hog was worth three dollars, makes it cost twenty-three dollars. Suppose it weighs 230 pounds, every pound would cost ten cents to produce, not including the risk of losing perhaps twenty per cent., which would raise the cost to twelve cents per pound."

Fattening Hogs.

The natural climate of the hog is near the tropics; therefore the best time to fatten this animal is before the cold weather sets in.

A small lot of hogs may be kept on every farm with profit. Corn is most profitably fed to hogs when it is a little too hard for roasting ears; when in this stage they will often eat corn, cob, stocks and all. Hogs should have a spacious lot to feed in, and never be imprisoned in a pen; however, they will fatten faster in a close pen; those fattened on the ground with plenty of room, will exercise enough to throw off some of the disease producing matter, and are more fit for food. But look at the stupid gluttonous beast imprisoned in his pen, wallowing in his own filth; at every breath he inhales the foul emanations from his offal. An animal fattened under such unphysiological conditions must be diseased.

A swill barrel should not be tolerated on any farm; it is always in a state of fermentation; the strong sour smell indicates rotteness; swarms of maggot flies revel in such corruption; let your hogs have the slop before it ferments. The hog being more liable to disease than all other animals, and his flesh being the cause of more disease to the human family than all other causes, should be a consideration worth noticing in producing pork.

DRESSING COLORED HOGS.—A correspondent of the *Michigan Farmer* says: The principal objection to the Essex and Berkshire breed of hogs I find to be their color. Now, as Youatt justly observes, this is not even skin deep. The coloring matter will be found secreted between the true skin and the epidermis or outer skin. If care is taken in scalding black hogs, they can be dressed as white as any white hogs. It is a well-known principle that all black substances absorb heat. Hence, in dressing black hogs, the water should not be so hot as in scalding white ones. If this simple rule is observed there will be no difficulty in dressing black hogs. Instead of this being an objection, I regard it as an advantage, for the skin of black hogs will always be found to be smooth and glossy, free from cutaneous eruptions, and always clear.

PEAS FOR HOGS.—In an answer to a correspondent who asks what is the best grain to fatten pigs, the *Rural New Yorker* says: "The best feed—quality of pork and rapidity of fattening considered—we ever gave pigs was boiled peas and potatoes. Without looking up analysis to prove or disprove the relative fattening properties of the compound with other feed, we speak of practical and profitable results."

A CORRESPONDENT of an exchange cures the kidney worm in hogs by giving "one or two tablespoonfuls of sulphur daily, per hog, in his slop until relief is afforded."

LARGE BONE CAVE IN BAVARIA.—*Nature* describes a bone cave recently discovered near Regensburg in Bavaria. In this, wood ashes and pieces of coal, together with pieces of pottery, had accumulated to the height of about three feet, in the midst of which were sharp splinters of flint, a thick mass of broken and split bones, and the shattered skulls and jaw bones of a heterogeneous mass of animals of all kinds. In the lower layer no trace of man could be found, all the remains consisted of bones of animals, chiefly the cave bear, hyena and lion. These animals appear to have been the earliest possessors of the cave. But soon after this man must have inhabited the cave, for from this up to the newest layer, his presence is clearly shown, and the remains of his feasts and of his daily life are mingled with those of the animals. The most numerous remains consist of flints. Fragments of pottery were found and a block of granite, with one side rubbed smooth, which was evidently used as a millstone. The most conspicuous of the remains of animals hunted and eaten by the men are those of the cave bear. The bones of the elephant and the rhinoceros are fewer, but show conclusively that these animals were hunted by man. Remains of horses, oxen, cats and wolves, and the bones and scales of fish—large pike and carp—occur.

IT APPEARS that while the sugar cane contains nearly twice as much sugar as the beet root, in the process of extraction more sugar is obtained from the latter than the former. Millions of pounds of sugar are thrown away in Louisiana every year. The sugar exists in the cane in a crystallized form, and cannot be pressed out. It must be dissolved out by water.

MISCELLANEOUS.

Lithographing by Sun Light!

The climax of the photographic art appears to be as far in the future as ever. The latest progressive step consists in causing the rays of the sun to form a lithographic plate of any object presented, from which copies can be taken, as many and as readily as from the ordinary lithographic stone! The discoverer is Joseph Albert, of Munich, and the process has been successfully introduced into this country by Edward Bierstadt, a brother of the well known artist. Mr. B. recently gave an exhibition of the process in Boston. The manner in which the plate is produced is described as follows:—

An ordinary photographic negative of any object is first taken. Then a photographic negative of any picture is sent to this company, and they undertake to strike off thousands of accurate copies in a few days. A plate of glass about half an inch thick is covered with a solution of gelatine and bichromate of potash, which, when dry, is again covered with a similar appliance, so as to render it a fixture. The film or albuminous substance is then washed in cold water to take out the bichromate of potash. The negative is then placed upon the upper side of this prepared thick glass, and both exposed for an hour or two to the light (the time varying with the strength of the light) until the impression is perfect. Then you have to all intents and purposes a lithographic plate from which any number of copies can be taken.

By this method, copies from nature, or from engravings or paintings can be obtained as correct as the ordinary photograph, and far more faithful than by any ordinary process of drawing and engraving, and at a cost less than an ordinary lithograph.

The more elaborate the picture, or landscape, the longer the engraver takes to transfer it to stone, but Mr. Bierstadt does not consume a minute longer than the plainest of pictures or outlines require under this new and simple process. Merchants can have their houses of business represented on their paper wrappers, and the poorest can possess faithful copies of renowned artistic works.

The value of such discoveries to the masses is almost incalculable, and must necessarily do much toward establishing a correct taste in works of art in America, as the pictures are comparatively cheap.

Art in Metal Work.

We have often remonstrated against the incongruous character of our metal-work. Here there is a comparatively untrodden path of art. Cast and wrought iron work are extensively employed in building. These are as capable of artistic treatment as the brick or stone building with which they are incorporated. Generally, however, they are either covered up, or else made in the forms of stone architectural features, as though metal was something to be ashamed of; as though it had no properties that did not suggest life and beauty in artistic design, allowing the metal to appear, and making its use strength, and appearance forcible; marking and emphasizing it in the building; and, instead of hiding it, or making it appear like some other material, giving it a definite design and character of its own. Thus, by its force and contrast, it would very greatly add to the effect of the building where it was employed. There is no exception in the case. All kinds of purposes for which metal is used in buildings might be marked and emphasized by artistic treatment. How much less of sameness and tameness would there be if this were done! and how much greater would be the artistic feeling and force!—so very desirable. There is great scope here; and, until more is done in this department, there is something wanting here.

The employment of zinc for external cornices and canopies is coming into vogue. Setting aside the question of durability, why is it not possible to treat the material artistically as metal? What is the necessity of making it appear like stone? Even with a design resembling the treatment of stone, it looks far better with its glossy, natural color as metal, than when smeared and deadened with paint not at all in accordance with its nature.—*The Architect.*

OBTAINING WATER FROM OCEAN DEPTHS.—An apparatus for obtaining water from the depths of the ocean has been invented in Germany. An open vessel is lowered by means of rope and weights until the desired depth has been reached. Then an electric current is transmitted through an accompanying wire, which, by inducing another current in an electro-magnet in an apparatus attached to the vessel, releases springs which turn stop-cocks, and the water of the depth is enclosed. Several most interesting experiments for the determination of the amount of carbonic acid in deep-sea water have been made by means of this invention.

ENGLISH AND AMERICAN PLATE MILLS.—Mr. C. B. South, of Pittsburgh, Penn. who is now absent in England, writes to a friend that there are several large plate mills in England, but none that he has seen that will compare with those of the Sligo Iron Works, and Moorhead & Co's., of Pittsburgh, or Abott Works, Baltimore.

Intelligence in Monkeys.

Prof. Cope writes in the *Prac. Acad. Nat. Sci.* for April. I have a monkey, *cebus capucinus*, in my study who displays the usual traits of monkey ingenuity. He is an admirable catcher, seldom missing anything, from a large brush to a grain, using two hands or one. His cage door is fastened by two hooks, and these are kept in their places by nails driven in behind them. He generally finds means, sooner or later, to draw out the nails, unhook the hooks and get free. He then occupies himself in breaking up various objects and examining their interior appearances, no doubt in search of food. To prevent his escape I fastened him by a leather strap to the slats of his cage, but he soon untied the knot and then relieved himself of the strap by cutting and drawing out the threads which held the flap for the buckle. He was accustomed to catch his food with his hands, when thrown to him. Sometimes the pieces fell short three or four feet. One day he seized his strap and began to throw it at the food, retaining his hold of one end. He took pretty correct aim and finally drew the pieces to within reach of his hand. This performance he constantly repeats. Sometimes he loses his hold of the strap. If a poker is handed him, he uses that with some skill for the recovery of the strap. When this is drawn in he secures his food as before. Here is an act of intelligence which must have been originated by some monkey, since no lower or ancestral type of mammals possess the hands necessary for its accomplishment. Whether originated by Jack or some ancestor of the forest who used vines for the same purpose, cannot be readily ascertained.

After a punishment, the animal would only exert himself in this way when not watched; as soon as an eye was directed to him he would cease. In this he displayed distrust. He also usually exhibited the disposition to accumulate to be quite superior to hunger. Thus he always appropriated all the food within reach before beginning to eat. When different pieces were offered to him, he transferred the first to his hind feet to make room for more; then filled his mouth and hands, and concealed portions behind him. With a large piece in his hands, he would pick the hand of his master clean before using his own, which he was sure of.

Distribution of the Stars.

In a recent lecture at the Royal Institution, Mr. Proctor expressed the belief that the stars are not only not spread uniformly throughout space, but that not even the general approach to uniformity insisted upon in treatises on astronomy in reality prevails. On the other hand, there are definite reasons within which stars of many orders of magnitude are richly distributed, while around these regions are vast spaces in which either there are no stars or stars are very sparsely strewn. In favor of this view he adduces the remarkable circumstance that the southern hemisphere contains about a thousand more stars visible to the naked eye than the northern. This peculiarity is rendered more remarkable by the fact that there is a well-marked northerly rich region as well as a well-marked southern region of greater extent. In the British association Catalogue there are about 5,600 stars included within the classes visible to the naked eye. Yet when these stars are shown in a series of twelve maps, overlapping each other uniformly, and each covering a space equal to a tenth part of the heavens, instead of each map showing about 560 stars, it is found that the north polar map shows 700, the other five northern maps containing respectively, 400, 540, (a map crossed by the Milky Way,) 400, 370, and 550, (another Milky Way map); while the south polar map contains 1,130, and the other five southern maps contain 520, 890, 510, 590, and 570, the condensation in all these southern polar maps being markedly toward the south. Arguments were also drawn from the proper motions of the stars, the concurrence of colors, in certain stellar groups, the occurrence in nearly all cases of variable stars in the vicinity of star streams or star clusterings and the appearance of temporary stars always within the Milky Way, in support of the theory of unequal distribution.

INDIA RUBBER CARRIAGES.—It is said that a Connecticut company is putting up a factory for the building of carriages made entirely of India-rubber except in the axles and tires. A decided superiority is claimed for the material over wood.—Why cannot the same principle be applied to the construction of railroad cars? With such cars in case of a "smash up," there could be no splintering—the great cause of wounds and loss of life in such calamities.

CURIOUS HABIT OF A SNAKE.—Mr. Cope had a specimen of *Cyclophis aestivus*, which had a curious habit of projecting its head and two or three inches of its body above the ground, and holding them for hours rigidly in a fixed attitude. In this position it resembled very closely a sprout or shoot of some given succulent plant, and might readily be mistaken for such by small animals.—*Ibid.*

FARMERS IN COUNCIL.

Oakland Farming, Horticultural and Industrial Club.

Oakland, Sat. Eve., Aug. 23d.—President Carr in the chair. Messrs. A. F. Montandon and G. D. Jewett of Oakland, were elected members of the Club.

A Double Fruit—The Bee Moth.

Mrs. J. P. Moore exhibited a novel specimen of fruit; one half resembled plainly a peach and the other half a nectarine. The lady had found it in a basket of peaches which she had purchased.

Mr. Pryal said he had seen similar samples of double fruits from seedling peaches; that they were not so uncommon here as in older countries. The nectarine originated from the peach.

Mr. Phelps, of San Leandro, showed some honeycomb from which the honey had been extracted, and which was full of the moths, that make such ravages among bees. Mr. Phelps stated that his hives had been much troubled by moths, and that he had tried several methods of getting rid of them, all without avail. His wife placed out some comb from which the honey had been removed, so that the bees might take away the residuum, when the moths came round it and became entangled so they could not escape. Since then they had not been troubled by them, and he considered it a first rate method for getting rid of the bee moth.

Fruits Preserved by Air Exhaustion.

Mr. Phelps, of San Leandro, then exhibited samples of fruits to which this process had been applied, and illustrated his method. The fruit is placed in the bottle without being immersed in any liquid, the bottle is placed under the receiver, the cork inserted lightly and kept in place by a piston passing through the top of the receiver, the air is then exhausted, the piston is pressed down tightly on the cork, forcing it inside the bottle, which is then removed from the receiver—the cork being hermetically sealed by dipping in a solution of sealing wax, when the process is complete.

He had been able to keep blackberries, tomatoes, and grapes, this way. Some of the tomatoes were put up two years ago. Had tried plums and other fruits which turned sour after a while. Milk had kept for thirty days, before it soured. Grapes after being kept two or three months by the process had a taste resembling that of Champagne. He had tried the process on California wines and brandies, and its effect was to give them an appearance of age, and to make them taste like wines and brandies that had been kept for years. He had tried eggs but failed. He was of the opinion that the process was a failure for fruit preserving. Although retaining its natural appearance, it always becomes sour.

A discussion ensued on the subject, when several gentlemen asserted that fruit preservation by exhausting the air had been made a success in Europe and that patents had been taken out for it.

The next matter in order was the exhibition of the model of

Mr. Dawson's Straw Cutter,

Which has been before reported. After examining its operation, Mr. Dawson gave some

Experience in California Farming.

He said, dry seasons and burning the straw, as well as an exhaustive method of cultivation, were the reasons why the State had not a good reputation among farmers, and why they were poor. Under this system the land was made barren, and all that many men looked to was to take as much as they could out of the land. Three years ago he (Mr. Dawson) had bought 2,780 acres of land near Bantas. He only kept it ninety days till he could have sold it at \$4,000 advance. He leased 1,200 acres to a man from Napa, and 1,000 to another from Stockton. The Napa man was a scientific farmer. Said he, I can use my money to better advantage in leasing land than in buying it. With three crops I will have taken the cream off the land. He told the truth, which he had learned by experience. He sunk wells, made sheds, and put up mills. For two years that land was only covered with a thin coating of green, two inches long. It was a failure, and the farmer lost all he had. Mr. Dawson then referred to Scotland and Italy as examples of the results of good and bad cultivation. He said that his invention would be of little use on old lands, but that it would save five dollars per acre on new lands, and would preserve the fertility of the soil. The machine would cost only one hundred and eighty dollars.

In answer to a question Mr. Dawson stated that it would be no use where reapers were used, that it was intended to follow a header.

A member remarked that in five years more no headers would be used.

Mr. Pryal moved that when the machine was constructed that it be brought before this club or that at San José to be thoroughly tested.

It was moved that a committee be appointed to examine the working machine and report to the club hereafter. Carried.

Mr. Dawson stated that he would have a machine made to be presented to the State Fair.

Prof. Carr having called for the report of the

committee on the Farmers' Club State Convention, Mr. Hyatt presented the following:

The Committee to whom was referred the subject of considering the importance of co-operation among farmers to protect themselves against the depredations of those monopolists who are leaguering together and forming "rings" to cripple the enterprise and "bear" down the prices of farming products, and to consider the subject of a communication addressed to this Club by the Farmers' Club of Napa county, suggesting the propriety of holding a State Convention of representatives from the various Farmers' Clubs of the State, in aid of the cause under consideration, beg leave to

Report.

That the pressure of other imperative engagements has not allowed your Committee time to go into the investigation and discussion of the subject as fully as its importance seems to demand. Facts enough, however, present themselves at a glance, to demonstrate the urgent necessity of a league or association among farmers to prevent the Shylocks who are preying upon them from carrying off all the farmers' profits, and making them mere hewers of wood and drawers of water and delvers in the soil, to benefit a few heartless grain speculators. Let us look at the manner in which the grain market has been manipulated the present season in California. We are told that the prices here are governed by the prices of grain in Liverpool. How is this?

On the 2d day of August, instant, the Liverpool market for California wheat was quoted at 11s. 8d., and the same day, in San Francisco, at \$1.55 to \$1.60 per hundred pounds. On the 12th of August, instant, the Liverpool quotations were 12s. 4d.; and on the 13th, the next day, in San Francisco, the speculators paid only \$1.60 for "good shipping." Here, it will be seen, was an advance in the Liverpool market, from the 2d of August to the 13th, from 11s. 8d. to 12s. 4d., or over fifteen cents; and how did the San Francisco market respond? How much did the wheat buyers of San Francisco advance the prices? Not one cent.

Again, on the 21st of September of last year the Liverpool market was quoted at 12s. 8d., only 4d. more than on the 13th of August of this year, and wheat was then (in September) selling in the San Francisco market at \$2.70; while this August, with the Liverpool market at 12s. 4d. (only 4d. less), they pay but \$1.60 per cental—a difference between last year and this of \$1.10 against the California farmer, when the difference should be but 4d., or less than eight cents, making a clean shave of \$1.02 on every cental, or over sixty cents on every bushel. It seems that while these speculators pay out but \$5 more for freight, they pay \$22 per ton less this year than the last for wheat.

But we are told by these wheat sharps, these bread buccaneers, that the present low price of wheat in the California market is necessarily caused by the high price of freights, the increased charges for shipping, and because they are obliged to pay £4, or \$20 per ton to Liverpool. Is this true? Is this the legitimate cause of depressing the price of wheat? Let us prick this pretty bubble and see it collapse. Twenty dollars per ton is one cent per pound. Now, to offset for the high rates of freight now charged the farmer—to have made last year's profits compare with those of this year, the freight last year ought to have been forty cents a ton less than nothing. But what were the actual freights paid last autumn? We find it noted in the *Daily Bulletin* of November 15th, "grain to Liverpool direct, £2," and as high as £2 7s. 6d., or nearly \$12, (according to a recent number of the *Alta California*) was paid during that year. So that instead of the buyers being able to pay us \$2.70 per cental for wheat in San Francisco, by reason of its being carried to Liverpool for nothing; they were paying ten dollars a ton or over, or half a cent per pound; add which to the present price of wheat, \$1.60, and we have \$2.10 per cental as the present value of wheat in this market; and this is what the farmer ought now to receive, and would receive but for the disreputable "rings" formed to monopolize the carrying trade.

But do these Bread Buccaneers really pay £4, or \$20 per ton freight? It is well understood that the chief mogul of the buccaneers chartered a large number of ships more than he was prospectively in need of for legitimate purposes, at £2 to £3, and then pretended to re-charter them to his fellow-clansman of the "ring" at £4 per ton, or thereabouts. That's what makes this pretext of high freights, and not the real scarcity of ships. There are numbers of disengaged vessels in our harbor, every week, and more arriving daily. Wheat is now being shipped from Philadelphia to Liverpool, at \$6 per ton, and by steamer at that. Does this indicate a scarcity of shipping?

Here we find these remorseless speculators (if their re-charters are genuine,) making the snug sum of \$5 or more on every ton, or \$5,000 on each ship of 1,000 tons capacity, at the expense of the farmer, to say nothing of the advance the speculators get in buying wheat at \$1.60 and selling it at over \$3 per cental. No wonder, under these circumstances, that we should see such paragraphs as the following, which we clip from a recent San Francisco daily paper:

"It is a curious fact, and one which has been observed by not a few, that when wheat is most wanted in this market, up go the Liverpool quotations, and, encouraged by a healthier market, in come the supplies; but on their arrival down go the Liverpool quotations, and this market instantly responds. Those who

manipulate the wires must be in a very doubtful state regarding the wheat prospects by the uncertain and frequent changes made in the quotations."

Your Committee can here only allude to the petit larceny attempt to swindle the farmers by the wheat sack extortion.

And now what is to be done to counteract these plots against the interests of the farmers, and to enable the farmer to obtain a living price for his grain—the honest earnings of his hard labor, earned by the sweat of his brow, and by days of ceaseless toil and by nights of watchful care? Your committee are expected to suggest a remedy. The one proposed by the resolution of the Napa County Club, and endorsed by various agricultural associations of the kind in Sacramento, San José, San Joaquin and other places, to form Protective Unions by counties and districts, and to concentrate in a strong State Institution, meets the approval of your Committee, with some modifications perhaps; but we deem it now too late to perfect any organization that shall be effective the present season. But farmers have the power to make their efforts felt, and at once; and that is by holding on to their grain crop until a fair price shall be offered. Those in immediate want of money can get what advances they may need on their wheat, and sell it when it reaches a living price. Compel these ship-grabbers to pay heavy demurrage on their empty vessels for a few months, and it will bring them to terms.

Let those speculators who attempt to "corner" the farmer, beware that they do not find themselves "cornered," as in a late remarkable instance in Chicago, resulting so disastrously to the buccaneers.

We regret there should be any antagonism between the farmer and the produce dealer. It is not the fault of the farmers; they only seek what is right and just; they ask only a reasonable compensation for their labor and capital; they are willing to live and let live. They are willing to sell their products at rates that will allow a fair margin of profits for the honest dealer, but they are not satisfied to have all their profits and earnings carried off by the speculators. Free trade and farmers' rights are what we seek. We cannot consent to be made the victims of dishonest combinations and over-reaching avarice and monopolies. Between the farm laborer clamoring for increased wages, though far better paid in California than in any other country in the world, and the greedy middle-men and intriguing produce gamblers and grasping railroad monopolists and the insatiable tax-gatherer, the farmer who can come out even at the close of the year may well congratulate himself as a fortunate man. It is only by indefatigable industry, keen sagacity and untiring perseverance, that will enable him to do this. All other callings and industries have their co-operative associations for their protection and advancement. The farmer must have his or he cannot prosper nor attain those rewards of labor and industry that he has a right to claim.

Your Committee would conclude by recommending that five delegates be chosen by the Oakland Farming, Horticultural and Industrial Club, to meet representatives from like associations in other portions of the State, at Sacramento, on Monday evening, September, 22d, (during the State Fair), as suggested by the Sacramento Club, to consider the propriety of an effective organization throughout the State for their mutual protection and advantage.

Respectfully submitted,

T. HART HYATT, } Committee.
CHR. BAGGE,

Delegates to Farmers' Club State Convention.

On motion the report was adopted and a resolution passed to elect delegates to attend the Convention at Sacramento. On nomination, the following members were selected: Messrs. A. T. Dewey, Thos. H. Hyatt, Christian Bagge, A. D. Pryal, and Dr. E. S. Carr. Mrs. Carr was nominated, but declined on account of other engagements.

As the subject of fruit preservation had not been discussed fully, Dr. Carr, by request, consented to deliver a lecture on the subject of the preservation of food on Friday evening next, to which time the meeting was adjourned.

San Jose Farmers' Club and Protective Association.

[Reported for the RURAL PRESS.]

The Club met on Saturday, Aug. 24, at 1½ p. m. President Casey in the chair.

Delegates to State Club.

Messrs. W. H. Ware, L. F. Chipman and C. T. Seattle were elected delegates to attend the State Club at Sacramento on September 23.

Tax on Growing Crops.

Mr. Garrigus offered the following: *Resolved*, That the assessing and taxing of growing crops is unjust and unconstitutional, and we urge the concerted action of all the Farmers' Clubs in California, to protest against such assessment and tax, and take legal action against the enactment which requires such assessment.

Mr. Holloway favored the sentiment of the resolution, but thought it could be put in a little better form; perhaps some member of the club could write what we want; if not, let us get some outsider to put it in proper shape, for certainly we should act to some purpose in this matter.

Mr. Chipman thought the best thing that could be done, was to invite the other Clubs to unite with us in making up a test case and

if beat carry the matter before the higher courts.

Mr. Burgland thought we would only waste our time and money as the defect lay in the Constitution, so we had better let the matter rest till the Legislature meets and have the subject brought before that body for a remedy.

Mr. Chipman replied that the Constitution only requires equal and just taxation and as this is unequal and unjust we can beat it in the courts. On motion the resolution was referred to a committee consisting of Messrs C. T. Seattle, W. H. Ware and Holloway.

A Question of Privilege.

Mr. James McClellan rose to a question of privilege; the San José *Mercury* had objected to some of the ideas advanced by the Club. He desired the Secretary to read the article in question and his accompanying resolution. There being no objections the Secretary read from the San José *Mercury* as follows:

"The Farmers' Club took the right view of the protest against city licenses for vendors of farm produce—from a farmer's standpoint. But it seems to us that the inhabitants of the city have some rights which are worthy of respect. It is a notorious fact that during a great portion of the year, the San José public is compelled to rely on importation for their fruit and vegetables. It is also a well-established fact that if we depended on the farmers for these supplies, there would be much of the time that we would have to go without. The farmers, when fruit ripened, would bring it into market, but when it was gone, in order to supply us with either early or late produce, they would be compelled to bring it from abroad, thus becoming middlemen themselves. Our dealers now supply us with produce of all kinds at all times of the year. It is always where our people can find it without trouble, and the license tax is for their protection. If the farmers are robbed by the middlemen to the extent claimed, they can afford to pay the city tax when they sell their truck and still make money." We want a regular and full supply of produce for our markets and unless the farmer is willing to guarantee us this, he ought not to ask us to take away our protection from those who will.

The resolution after being amended by leaving out the clause which said the idea of the *Mercury* was "born of a slavish compliance with old customs" or something to that effect, reads as follows:

Resolved, That in the opinion of this Club, the remarks of the San José *Mercury*, of a late date, censuring the action of the Club, in regard to the repeal of the city ordinance requiring a license for the sale of fresh vegetables and other farm and dairy products, by the producers thereof, is unjust, to both producers and consumers.

Mr. Burgland favored the resolution. He said that in no other country under the sun was there such an outrageously oppressive law, nor could there even be found men to favor or recommend such a law. Mr. Cadwell rose to endorse what the last speaker said.

Mr. Holloway, Jr., said the idea of having middle men to grind money out of the poor, in everything, is outrageous, that even then a man serving on the jury had to pay a shave to get his money, when at the same time there was plenty in the County Treasury.

Mr. Chipman called the License Law illegal. He knows it can be beat in the courts; he has seen it tested. He knows that a man can sell what he himself produces, in any part of the United States, without a license. Mr. Holloway thinks the resolution

Truth Clear Through.

But he objected to the wording of it. The only thing he can see in the supporters of the law, is a desire to tax the surrounding farmers to enable the city to have produce at times when farmers can not furnish it.

The middlemen won't do the fair thing with our farmers. He saw a man the other day with a load of melons which he would gladly have retailed out at a bit each, but dare not for the unjust license law, while at the same time the middleman was selling the same quality at twenty-five cents each, and would not buy from the farmer except for a trifle.

Farmers about here let their produce rot on the ground because they are not allowed to sell except to middlemen who monopolize all the profits at the expense of both producer and consumer.

Unjust Censure.

Mr. Seattle was opposed to censuring people on account of their opinions. He thought we had better let the *Mercury* alone. Let us go ahead and work for what we think is right and just, and extend to others the right to do the same. He is opposed to meddling with the city license system. The city government must live and they have a right to raise funds; all he wanted was a right to sell his few pumpkins and other vegetables to the best advantage.

Mr. Holloway thought that what the city wanted was to get money out of the country farmers instead of taxing themselves to support their city government.

Mr. Lee opposed the resolution, for he thought the ideas of the *Mercury* about right.

Mr. Hobson thought the resolution none too strong as worded at first. He is opposed to the whole system of license. It can't be regulated by law, so it must be wrong.

On a vote being taken the resolution was adopted.

Question adopted for discussion at the next regular meeting, "Does the present mode of farming in this valley pay, if considered with reference to the value of land and rent? and if not, what is the remedy?"

Mr. Holloway occupied about ten minutes in discussing

Land Titles and Records.

He is opposed to the whole idea of surveying, deeding and recording land titles. He thought the plan had been devised to give the rich an opportunity to grab all the land. Land should be disposed of and held like personal property.

A stranger arose and said he considered the remarks very rambling and without sense, but if Mr. Holloway would appoint some time when he would discuss the subject sensibly, he would be happy to learn something. The Chair decided the speaker out of order as Mr. Holloway's remarks were not before the house for discussion.

Adjourned to meet as usual.

Sacramento Farmers' Club.

The regular meeting was held on Saturday, August 24th, President Baker presiding. Ten new members were elected.

The subject of steam plowing being called up, Mr. Alexander Campbell read a long and interesting address covering the whole ground of its cost, and of its economy over plowing with animals; for which able address—too long for our columns this week—a vote of thanks was tendered him.

Fruit Festival.

E. F. Aiken said that he noticed by the papers that at the meeting, one week ago, he had been appointed as one of a committee on a fruit festival. He also noticed that arrangements had already been made by some member or members of the committee to hold such festival on next Saturday at East Park. It seemed to him according to the minutes of the meeting of last Saturday, that the business of that committee was only to consider the propriety of holding such festival and the recommendation of a suitable place. If this was so it would seem that some members of the committee had exceeded their authority, and if the items in some of the papers were true, had placed the club in rather a ridiculous light.

The idea that a few farmers were going to bring from five to fifteen tons of fruit and place them on the tables to be devoured by the multitude that had been invited to attend the festival was simply ridiculous. While he was ready and willing to do his full share in getting up a good exhibition of fruit and perfectly willing to see it eaten and enjoyed by those present, he did not wish to be made the subject of ridicule by having such representations published.

Mr. Stewart said that the committee had not exceeded its authority as he understood it. It is true that they had made arrangements for a festival at East Park, and while they had authorized the publication of items in regard to what it was expected to be, they were not responsible for the extravagant statements referred to by Aiken; and while he did not expect that there would be five or fifteen tons of fruit on exhibition, he did expect a very creditable display, and he hoped the people of Sacramento would turn out to see and enjoy it, and especially had they extended a general invitation to the public and private schools of the city.

To show that there would be a good display, he would now report that the following named individuals and firms had agreed to contribute: W. S. Manlove, S. N. Baker, A. S. Greenlaw, J. Holland, A. P. Smith, J. Rutter, G. T. Rich, T. R. Stewart, Robert Williamson, J. H. Carrington, D. L. Williamson, E. F. Aiken, A. H. Cummings & Co., W. R. Strong & Co., J. R. Johnston & Co., R. Levy & Co., Pond & Jones, John C. Daly, L. Leibenbaum, and a number of others. That the City Railroad Company would pass all fruit over the cars free of cost.

J. R. Johnson here gave notice that he would receive at his store all the fruit that might be left with him and deliver it at the festival free.

G. T. Rich was added to the Committee of Arrangements, and the committee was vested with discretionary power in reference to the festival.

Committee on Classification.

The following members were appointed a committee to classify and name fruit on exhibition: Robert Williamson, A. H. Cummings, R. Levy, J. R. Johnston, A. S. Greenlaw, James Rutter, E. F. Aiken, W. S. Manlove, W. R. Strong and G. T. Rich.

Cincinnati Exposition.

Secretary Hoag called attention to the National Exhibition, to commence on the 4th of September, and suggested that it would be well if some of the members of the Club would send some samples of their fruit there for exhibition, especially since the State Agricultural Society would have a representative there to look after and see that they were properly displayed. He presumed that Wells, Fargo & Co. would carry small packages and deliver them free. James Rutter, J. H. Carrington, J. R. Johnston and W. R. Strong said they would send samples of fruit.

Skeleton Harvester Guards.

The Secretary exhibited to the Club samples of steel skeleton guards for reapers and mowers which he had received from Smith & Dixon, of Port Byron, New York, and which were very highly recommended. They can be fitted to any reaper or mower, and being hollow and their edges at the opening through which the knife plays being formed by being stamped in dies from plate steel of uniform thickness, are not liable to wear away as the cast or wrought

iron guards are. The proprietors had proposed to send free of charge a set of these guards to the President and Secretary of the Club, on condition that after a fair trial they should report as to merits. They will be ordered and tried.

New Seedling Peach.

E. F. Aiken presented the Club with a basket of a new and very fine seedling peach, and said he would like to have the Club test and name it. He said the peaches were grown on a tree on which he had for two years failed to get a bud to grow, because it stood on so dry land that the sap did not flow sufficiently when he budded it. The ground around it was so dry that his budded trees had not produced fruit of any size or quality. The Club resolved itself into a Committee of the Whole and each one tried a peach.

They christened the peach "Glen Garden Seedling No. 1," and adopted the following description: "Free stone; large to very large; form globose; fine-skinned; bright orange color, striped and splashed all over with bright crimson; texture very fine for a yellow peach; rich, juicy and sweet; an extraordinary peach and a valuable acquisition to our list of California peaches."

J. R. Johnston said he would exhibit at the festival next Saturday a very extraordinary seedling peach, grown on the place of Captain Kidder, of this city, and would give some interesting circumstances connected with its history.

Adjourned to East Park on the 31st instant, at 1 o'clock P. M.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

Transcript, Aug. 21: AT THE WHARF.—The "Cicero" has sailed from Oakland wharf for Liverpool laden down to the guards with wheat. "Offerton" also has a full belly of grain, and will leave at an early day. On Sunday the fine ship "Pride of the Port" arrived at the foot of long bridge, from Boston, with a miscellaneous cargo. Already she is loading with wheat for Liverpool, and will probably sail on Thursday of the present week. She will carry hence no less than 1,700 tons of wheat.

Yesterday the good ship "Fleetford" came into the berth just previously vacated at the foot of Oakland wharf by the barque "Offerton." The latter has just sailed for Liverpool with a full cargo of wheat. The "Fleetford" was built in Liverpool. She is of 1,104 tons burden. This is her fifth voyage to this port. She came last from Newcastle, N. S. W., with 1,460 tons of coal. She is now loading with wheat, and expects to sail with 1,750 tons aboard, on Tuesday of next week.

THE STAFF OF LIFE.—No less than 7,000 sacks of wheat were piled up at Oakland wharf yesterday afternoon.

CONTRA COSTA.

Gazette, Aug. 24: GRAIN BURNED.—About 11 o'clock Thursday forenoon some men engaged in pressing hay on the farm of Messrs. Kirkwood and Gay, near Clayton, discovered that a pile of lately threshed straw was on fire, in the field near by. Giving the alarm, they ran immediately to the spot, where they were soon joined by others, and with great exertion succeeded in extinguishing the fire; but not until it had extended to a straw covered pile of sacked wheat, of which about a ton was so badly burned as to be worthless. Another pile of sacked wheat, covered with straw, was with great difficulty saved, and had the fire got five minutes further start before discovery, none of the grain could have been saved. The origin of the fire is unknown, but it is supposed to have taken from matches, carelessly dropped by some of the threshers, and ignited by the sun, as Mr. Kirkwood passed the spot shortly before the fire was discovered, and can imagine no other way in which it could have occurred.

HURRY UP THE ENTRIES.—But one entry has yet been made in competition for the Agricultural Society's premiums for Farms, Orchards, Gardens and Vineyards. There ought to be a number of competitors for each of these premiums; but unless the entries are soon made there will not be time for the Visiting Committee to make their examinations before the Fair, which will open in two weeks from next Monday.

POINT OF TIMBER FARMERS' CLUB.—We learn from the *Antioch Ledger*, that a meeting was to have been held last Saturday at the Point of Timber School-house for the organization of a Farmers' Club.

FRESNO.

Expositor, Aug. 21: GOOD YIELD.—We learn that Captain Fisher and L. L. Witt, who live some seven miles below Millerton, on the San Joaquin river, sowed seven sacks of wheat which yielded 25,000 pounds of clear wheat; fifteen bushels of chicken-feed and two tons of hay. The seed was raised in the mountains last year, and threshed out by Indians, being perfectly free from all other kinds of seed. This land was plowed just as deep again as that of their neighbors, and yielded almost three times as much, thus proving that where the ground is plowed deep the grain yields more abundantly. It appears that they raised as much from fifteen acres as their neighbors did from forty. Would it not be well for our farmers to cultivate less land and work it more thoroughly. Some of our farmers seem to think that the more acres cultivated the more grain they will be able to harvest, and so they will, providing they cultivate the soil thorough-

ly, but not so, when the soil is worked, as in a majority of cases in this State—just scratched over. To successfully farm, you must plow deep.

MONTREY.

Democrat, Aug. 24: GRAIN STACKS BURNED.—Tuesday night, six grain stacks, belonging to Alexander Frazier, and standing in his field at the Laguna Seca, were set fire to; the work being evidently that of an incendiary, as they were distributed about the field several hundred yards apart. We hear that upon subsequent search fresh tracks of horses were found in the gulch next the field, across it, and around the sites of the stacks, and were thence followed to a certain house. It is to be hoped that the severest punishment may overtake the perpetrator of the scoundrelly act.

MARIPOSA.

Gazette, Aug. 23: "BIG JOE."—This is the name of a famous grizzly that roams at will in the mountains this side of the Yosemite Valley. His principal stamping ground appears to be a belt of country between Little Yosemite and Empire Camp. According to all accounts he is one of the largest of his species. Parties who have measured his track say it is fully eighteen inches in width. A number of men, who have made hunting grizzlies a business for several seasons, have seen the monster, but concluded they did not want him! In other words, they were "not for Joe." "Big [Joe]" is an immense devourer of huckleberries and choke cherries, hence an agricultural note of the above.—Ed.]

NEVADA.

Republican, Aug. 22: FIRST BEE TREE FOUND.—A few days ago, Jake Cross, in going to Lake Tahoe, saw a number of honey bees in the woods. As such insects are unknown, or at least a great rarity on the eastern slope of the Sierra Nevada, Mr. Cross mentioned the occurrence to his father, Isaac Cross, who is an old bee hunter. The old gentleman left for the locality on Monday with his bee hunting material, and in a short time succeeded in finding a large swarm of bees in a large fir tree about ninety feet from the ground. From appearances they were sufficient in number to make half a dozen ordinary swarms. This we understand is the first bee tree found in this section. These bees found by Mr. Cross are about half way between Truckee and Lake Tahoe, and must be about 7,000 feet above the sea level. There is an abundance of honey dew in this section, an article of food of which bees are fond.

SANTA BARBARA.

Press, Aug. 24: DON'T NEED IT.—Mr. H. G. Crane informs us that the orange tree does not need irrigation here, unless it was raised by irrigation. He has demonstrated the correctness of his views on his place in the upper part of town, near the Lincoln House, and does not speak of a theory only. Certainly there is nothing in the nature of the case which makes Mr. Crane's view seem unreasonable or doubtful, and his experiment is well worth examination.

WORKMEN NEEDED.—The improvements now going forward in Santa Barbara make but slow progress, owing to the scarcity of laborers and mechanics. Men have been obliged to telegraph to San Francisco for mechanics in order to get work done at all. Laborers are in especial demand. This indicates very plainly the extent and value of the new buildings now going up in this place.

SAN JOAQUIN.

Independent, Aug. 24: NEW WAREHOUSE.—R. H. Potter has commenced the erection of a mammoth warehouse on the south side of Mormon slough. This building will be of brick, rat and fire proof, 202½x202 feet and 15 feet high in the clear. There will be twelve openings in the building and two railroad tracks running through it; also two tramways leading from the building to the water, across a wharf 110 feet wide. A. M. Gray, of San Francisco, formerly of Stockton, is the contractor. The building will be completed by the 15th of October, and is of the capacity of 14,000 tons.

MORE ROOM.—Our new wharf accommodations double the facilities for loading and unloading grain and merchandise, but are still crowded, and will be more so in the future, as grain receipts increase. We should have at least 1,000 feet of additional wharf below the Eureka warehouse, but we presume our city fathers think they have done enough on wharf building for this year.

UNDER WAY.—Peters & Stewart's new warehouse, on the Levee, is being pushed forward very rapidly, and will be finished in the shortest time possible. It is of the capacity of 4,000 tons.

WHEAT.—Twenty-one car loads of wheat were brought to the Centre street depot this morning. It belongs to various farmers, and will mostly go into store.

SANTA CLARA COUNTY.

Mercury, Aug. 22: RARE TREES.—On Mrs. Hensley's beautiful grounds, in the northern part of the city, may be seen several fine specimens of the fragrant maguolia tree, some of which are from twenty to thirty feet in height. They thrive finely, blossoming throughout the summer. The blossoms are a pure white, and about the size of a dinner plate. One of them placed in a room is sufficient to fill the whole house with delightful fragrance. These beautiful tropical trees should be more generally cultivated by our citizens. Upon Mrs. Hensley's grounds may also be seen a fine hickory tree—known in the Atlantic States as "shagbark,"—said to be the only tree of the kind in the State.

Like most of the native forest trees of the East, transplanted in our soil, the leaves and nuts of this tree are twice the size of the Eastern shagbark. She has also several coffee trees which are growing finely, together with many other rare trees, plants and flowers, that are foreign to most of our ornamental grounds.

A SUGGESTION.—A friend suggests that there ought to be an alternate Committee appointed on the dinner question at our approaching Fair, for the reason that the regular Committee will probably "weaken" before they get around. The dinners, from their sameness, will naturally tire the Committee towards the last, and they will hanker for a change. In other words, they will be apt to lose their relish to an extent that may warp their judgments in the matter of giving the awards. We are not sure but that a better way would have been to have had all six dinners prepared at different hours of the same day, and that the Committee make their round of visits and do up the job at once, confining their investigations simply to tasting. But then it is probably too late now to change the programme.

A MECHANICAL CURIOSITY.—We saw at Stock's tin-shop Saturday the turbine wheel that drives the Los Gatos Flouring Mills—the wheel having been brought down for some little repairs. This wheel is only nine inches in diameter and four in thickness. It is of brass and weighs not more than eight or ten pounds; and yet, under two hundred feet of water pressure, it drives three sets of stones, grinding two hundred barrels of flour a-day. When in motion it makes 2,200 revolutions a minute. It looks like a mere child's toy, but its power is wonderful. It seems that the perfection of a water wheel has been reached in this invention.

SIERRA.

Messenger, Aug. 17: HARVEST HANDS.—The people of Sierra Valley are now in the full tide of harvesting, and rejoicing in the prospect of an excellent yield of grain. About the only drawback is the scarcity of hands. A large number of men could find employment for the summer, at \$60 per month and board, and even better prices are paid by some. A party of men are now in the valley with a header, cutting grain. If we mistake not this is the first season one of these machines has been employed there.

The hay crop is reported very good this season. We noted a few days since, one of the Price hay presses en route for that locality.

It is a little surprising that some of the enterprising dairymen of Sierra Valley do not establish a depot in Downieville, where fresh butter may always be obtained. It would certainly pay.

STANISLAUS.

Modesto News, Aug. 22: AGRICULTURAL SOCIETY MEETING.—The officers and directors of the Stanislaus County Agricultural Society held a meeting at the Ross House last Saturday. On motion the office of Chas. Beauchamp, A. C. Ayers and A. S. Fulkreth, as Directors, were declared vacant. J. D. Spencer tendered his resignation as Treasurer of the Society which was accepted, and J. J. McEwen elected to fill the vacancy. F. H. Ross, B. D. Garner and A. H. Davis were elected as Directors to fill vacancies. Geo. Schell and J. D. Spencer were elected honorary members. On motion it was decided that the next annual County Fair be held at Modesto, commencing on Tuesday, the 8th day of October, and continuing for four days. J. D. McKenna was elected Corresponding Secretary. The following named gentlemen were appointed a Committee to solicit subscriptions: F. H. Ross, B. D. Garner and A. H. Davis. The meeting adjourned until Saturday, the 24th inst. Over \$500 was subscribed by citizens before the adjournment.

TULARE.

Delta, Aug. 22: BIG BEET.—Mr. J. H. Murray, of Yokohl, has presented us with a big beet, the seed of which was sown last spring, and, though not fully grown, weighs a little over thirty pounds. The patch in which it grew and which could boast of others still larger, has not been cultivated or irrigated since planting. Some of the finer vegetable land in our county lies along the little coves that open and shut between the hills of Yokohl Valley.

ALFALFA.—Dr. Henrahan lately showed us a patch of alfalfa measuring about half an acre, we should judge, which had been cut three, and some of it four times this season, since it was sown in the spring. The yield is estimated at about five tons per acre to each cutting. The grass is given in a green state to hogs, which eat it readily and apparently flourish like the famous "green bay tree" we read about. One acre of such grass cut and fed without waste, would keep in the vicinity of two hundred hogs in fine condition.

BARLEY.—Two fields on Tule river have just been threshed, one of which yielded 40, and the other 50 bushels to the acre.

About the head of Yokohl Valley, in the vicinity of Dr. Henrahan's ranch, are to be seen the unmistakable evidence of ancient mining operations, the most distinct of which are ditches, one of these being traceable for two or three miles. Trees of full growth are standing in them, indicating their origin as being due to an earlier race than the Americans. Gold is found in the gulches by panning and there are quartz leads in the vicinity which bear gold, but have only been slightly prospected in the croppings. A few years' will perhaps develop interesting facts concerning this locality.

MONTANA.

Independent, August 17: GRAIN CROPS.—Persons traveling through the valleys of Montana

[Continued on page 140.]

FLORICULTURE.

Layering Roses.

Roses are propagated chiefly by cuttings, layers and beds. Roses grown as dwarfs or bushes are the kind that will layer advantageously. Loosen the soil about the plant, then choose a good shoot, strip off a few leaves from six inches to two feet from the point of the shoot, insert a sharp knife just behind an eye, on the upper side of the shoot, and pass it carefully upward, cutting about half through the stem, and from an inch to two inches in length. Open the soil, head down the shoot, and press it in; peg it down with a hair-pin, or a bit of wood, two or three inches beneath the soil, and cover it firmly. Each layer should be tied to a stake to prevent the wind from disturbing the roots. June, July, and August are the best for layering. If the weather is dry and hot, water frequently. Don't let the layers dry up. About October and November they will be large enough to take away. Cut them off within two inches of the root, and transplant them wherever they are desired. In the spring prune the stem down to three or four eyes, and they will bloom finely.

The Chinese method of layering is often more successful than any other. At the end of July, or beginning of August, they select a strong shoot of the same year's growth, tongue it, as described above, and put it in a small stone to keep the split open, and bind a handful of fresh, green moss around the tongue. This must be kept constantly wet, and the tiny roots will shoot forth into the moss so rapidly that in five or six weeks the layer can be removed from the parent-stalk. The roots can be planted without disturbing the moss, and fine plants are thus procured.

Cuttings of Roses.

Cuttings of the hardy kind of roses will strike easily in July and August. Hybrid Perpetual, Chinese, and Bourbon, with all the other kinds, will grow steadily if the cutting has, what gardeners term, a heel; that is, cut off close to the old wood. Three, four, or even six eyes can be left above ground. Plant them, it is recommended, in wet sand. A dozen cuttings can be set an inch apart, close to the pot; and the sand should not be allowed to dry at all. If covered with a "cloche," or hand-glass, a moist temperature will be kept up, and, in two or three weeks, they will commence to grow.

Arrangement of Flowers.

Of all the various mistakes made by persons in arranging flowers, the commonest is that of putting too many into a vase; and next to that, is the mistake of putting too great a variety of colors in one bouquet. Every flower in a group should be clearly distinguishable and determinable without pulling the nosegay to pieces; the calyx of a clove pink should never be hid by being plunged into the head of white phlox, however well the colors may look. Sweet peas never look so well in the hands as they do on the boughs over which they climb, because they cannot be carried without crowding them; but put them lightly into a vase with an equal number of mignonette; or, rather, ornament a vase half full of mignonette, with a few blooms of sweet peas, and you get a charming effect, because you follow the natural arrangement by avoiding crowding of the blooms, and putting them with the green foliage which they want to set them off. Few people are aware until they try it, how easy it is to spoil such a pleasing combination as this; a piece of calceolaria, scarlet geranium, or blue salvia, would ruin it effectually. Such decided colors as these require to be grouped in another vase, and should not even be placed on the same table with sweet peas. They also require a much larger preponderance of foliage than is wanted by flowers of more delicate colors. It is unquestionably difficult to resist the temptation of "just putting in" this or that flower, because "it is such a beauty;" a beauty it may be—and so may be an apricot—but it would be out of place in a basin of green pea soup! There is at least one proper place for every flower; then let every flower be in its proper place.—*London Gardener.*

GRAFTING GERANIUMS.—Many of the new Zonal Geraniums are wonderfully slow growers on their own roots, requiring two or three years to obtain a good, showy plant. Among the plant-leaved sorts there are plenty of strong, vigorous growers. I am using these for stocks upon which to graft more delicate kinds. Grafting Geraniums has been practiced but very little in this country, but I think that when our gardeners learn its value they will be extensively used for the slow growing but elegant Zonal varieties. Even for the purpose of obtaining a good supply of good strong cuttings, grafting the weaker sorts upon the stronger will be found of considerable value to the commercial florist.

ODORS OF PLANTS.—White flowers, as a general rule, are more odoriferous than plants of any other color. Next comes red, then blue, after which, in the same order, may be recorded violet, green, orange, brown and peach.

HORTICULTURE.

Fruit Drying.

It is not clear whether fruit can be dried in California more profitably by natural or artificial heat. A fruit-drying furnace lately invented by a Mr. Alden, received much praise in a late agricultural convention at Savannah, Georgia. This furnace was thirty feet high, and five feet square inside, and had an endless vertical chain running down in each corner. On these chains, at intervals of nine inches, were placed sieves or frames, each holding half a bushel of fruit to be dried. The chains descend nearly a foot in ten minutes, so that each frame would pass from the top to the bottom in three hours; and in that period the fruit is dried. A blast of air heated to 165° Fahrenheit is blown by steam into the bottom of the furnace, and as it passes upwards it becomes saturated with moisture and grows cooler. The fruit prepared in this manner is represented to be much superior in flavor to the common article. The current of air and the heat are no doubt very beneficial, but the steam engine puts the device beyond the reach of the ordinary farmer, and perhaps he could attain the same object by building a furnace or chimney of glass against the sunny side of his house, painted white. Such a chimney open above and below, on hot summer days would carry a strong draught, and would probably dry fruit much more rapidly than roofs or light board platforms, were the air currents have little chance to pass. If the current of air is not strong enough, a stove with a pipe running to the top of the furnace will furnish draft as well as heat.—*Alta.*

GRAFTING INTO GRAFTS.—Mr. Stephens Adams writes to the *German Town Telegraph* in relation to the influence between the stock and graft, thus: My Monster Pippin was grafted near the ground about thirty-five years ago; it soon began to bear superb fruit large and fair, excellent for cooking, but too tart to eat raw. About twenty years ago I sawed off five of the limbs and grafted with a sweet apple called the Ha! Boy. Soon the Monster Pippin grew milder and continued to grow milder until it has become a sweet apple, though the Ha! Boy is not so sweet as formerly.

Being dissatisfied with the fruit of my Jargonelle and Vicar of Winkfield, I a few years ago cut off most of the limbs and grafted both with Clapp's Favorite; they have commenced to bear and those of the Jargonelle are two or three weeks earlier than those on the Vicar, and some of the fruit from the Jargonelle tree rotted to the core, as the Jargonelle fruit was in the habit of doing.

INFLUENCE OF WARM, DRY SEASONS.—Warm dry seasons are peculiarly adapted to the growth and ripening of fruits of almost every description. This fact is instanced in the climate of California, where fruit grows to the greatest perfection. Eastern horticultural writers are suggesting that fruit growers there should learn an important lesson from this experience, and profit by it in thorough drainage of all lands set to fruit, or that are about to be set apart to this purpose.

FRUIT IN OREGON.—The *Willamette Farmer* of Oregon, says: "The fruit crop this season is light, many orchards hardly bearing enough for family use. In many localities the frost killed large apple trees; even town raspberries and blackberries are much injured."

TOUGH.—The *Santa Barbara Times* vouches for the truth of the following: A singular accident occurred one day last week, in which James M. Short came near losing his life. As Mr. Short was working on a side hill on his place, an immense watermelon, weighing 86 pounds, broke loose from the vine and came thundering down the hill in his direction. He endeavored to escape from its track, but was prevented by becoming entangled in the vines. On came the melon with fearful velocity, and striking Mr. Short, threw him to the earth and rolled over his prostrate body. By the most singular fortune he escaped with his life, and with only a severe injury to his legs.

BET SUGAR.—The *Sonoma Democrat* says that a Mr. Hixon, who resides near Santa Rosa, has been experimenting with beet sugar. He determined to experiment with the root himself, and test their saccharine quality. He cut up and put into a common boiler about 80 pound of beets, boiled them down and procured ten pounds of sugar, of excellent quality, a specimen of which may be seen at our office. It is, of course, in a crude state, but is well grained. Considering the rude manner in which it was reduced, we think the result remarkable, not only as to product but as to quality.

GIVE WORK RATHER THAN ALMS TO THE POOR. The former drives out indolence, the latter industry.

A New Empire.—Our West.

"Westward, the Star of Empire takes its Way."

It is usual in the infancy of cities, states, and nations, for their peoples to take hopeful views of the future, and to picture to themselves in bright colors, their coming wealth, power and glory. San Franciscans are not exempt from the pardonable pride, accordingly the literary world is flooded from time to time with enthusiastic prophecies of the future of their city—the Queen city of the Pacific Coast. Trade, and trade alone is to make us rich and great, and to make our name as well known throughout the lands of earth, as was Tyre and Carthage of old, or Venice and Genoa of more modern fame. The prevailing idea seems to have been that the westward flow of the human tide was arrested by the broad waters of the Pacific—"thus far shall those go and no further." It never seemed to occur to those seers that the future of that vast group of islands, the Indo-Chinese Archipelago was inextricably bound up with our own. There lies a seat of future empire,—our west. The human flow will not be arrested on this Pacific Coast, in a few years as in the past the cry will still be,—The West! the West! In a score of years, the thousand and one islands lying between China, India and Australia, will be full of American trading posts, the nuclei of

Vast and Mighty Cities.

Founded by San Francisco, and peopled by American citizens. Already the movement has begun. Honolulu is our first outpost, a large, flourishing and thoroughly American city. It already rules, and will continue to rule, the destinies of the Hawaiian Archipelago. Ere long the semblance of subjection to the native authority will be cast off, and the confederated islands peopled by a population in the main, Caucasian, will be known as the Hawaiian Republic. In China and Japan the settlements of the great trading nations, from the proximity of this city, must be filled by an American trading population to the exclusion of a European. Great cities will grow up beside Yokohama, Yeddo, Canton, Shanghai, etc., bearing the same relation to them that did Golata of the middle ages, the Genoese trading city to Constantinople. As civilization advances, the West recedes. First it was found at the Alleghanies, then the Mississippi made its bounds, the Rocky mountains next raised their snowy crests—an insurmountable barrier—there was the West, when lo they were scaled, and the explorer from the summits of their mighty passes, looking in imagination towards the Pacific, exclaimed, "There is the West!" And now the West becomes the East. The fertile and beautiful islands lying between the tropics and between two great oceans invite us onward. They have an estimated population of 23,000,000, as great as the whole of the Union thirty years back, a population far more enterprising than that of the Hawaiian Islands, and one that would want for more of the manufactured goods with which we could supply them. If an American city having one-third of the whole population of these islands has grown up there in twenty years, it is not outside of the bounds of probability that the population of the American trading settlements in the Indo-Chinese archipelago will bear the same proportion to their present population, that Honolulu does that of the Hawaiian group now. These settlements are certain to be made. We will not long remain content with lines of steamships to China and Japan, we must have them to Batavia and the Spice Islands.

Population and Settlement

Will follow. At first it will consist entirely of traders and their dependents, but afterwards an agricultural one will follow, such an one as that which has filled the Southern Gulf States and the West Indies. The greater part of these islands is still open to settlement. Java and Sumatra are the only ones having a population at all in proportion to their extent. Even then it is not more than one-half the density of that of New York, and only one-twelfth of the density of that of England. The largest and most fertile of the islands are as sparsely peopled as the western plains, and are occupied by wild and savage tribes who have not the remotest idea of the cultivation of the soil. Borneo, as large as the New England and Middle States, has only a thin fringe of mixed Malay and Chinese civilization on its coast, and an equally thin Dyak one in the interior. Papua, containing nearly half a million square miles, equal in extent to one-third the country east of the Mississippi, is thinly inhabited by a savage race, and is as much open to settlement as were the great prairies of the west half a century since.

The Natural Productions

Of these islands are the choicest on the face of the earth. Rice, sugar, spices, camphor, ivory, the sago, palm, coffee, beautiful and useful woods, gold, antimony, tea and pearls abound. In making settlements in these islands and in developing their resources, we will be providing new outlets for our commerce and population. Wheat does not grow

there, and wool cannot be grown, the traders and other settlers, therefore, will have to be supplied with breadstuffs and woolen goods from the Pacific coast forever. If thoroughly peopled, these islands would support ten times their present population, so that the work of development in them will go on for another half century. American settlement from the Pacific slope will develop them as English and Spanish settlement has developed America and Australia, and with similar results. English and Spanish colonies developed English and Spanish commerce. England's commercial importance began on the day the first colony was settled in Virginia, and progressed from that time till this hour, and has grown precisely as has grown the United States and the colonies of Australia. The history of all

Great Colonizing And Commercial Nations

Is precisely similar. Phœnicia first established trading stations, these grew to be great cities, Phœnician colonies occupied the country around them and became the nuclei of seats of empire. Greek trading stations gave birth to Greek colonization and Greek power, until the Greek cities abroad made those at home from which they sprung, pale before them in wealth, population and fame, as if they were mere villages. The history of the trading stations established in connection with San Francisco amongst the islands of the east and on the shores of China and Japan will be precisely similar. They will grow into great cities. Her rich men will develop the resources of the country surrounding them, and found American settlements close at hand, and this will go on till they will become as thoroughly American as New York or Pennsylvania. When that time comes we will be the grand centre towards which the commerce of a hundred mighty cities founded by us will tend, we will be the seat of a new commercial empire which shall cast all those that have ever flourished in the past far into the shade. The stream of population will flow westward still, till to the new colonies founded by us we shall seem as far east as does New York and Philadelphia to an inhabitant of the Pacific slope. Wealth, commerce, enterprise and population still find their way west. Westward ho!

Raisin Manufacture.

H. T. Barker, Pleasant Valley, Solano county, contemplates entering upon the manufacture of raisins quite extensively this season. He has experimented in the production of raisins for two years past, and is satisfied that he can put into market an article in no way inferior to the Malaga raisins. He will commence drying Muscat and Tokay, and expects to realize twenty cents per pound, as pains will be taken to box the fruit nicely instead of throwing it into market in old sacks, candy boxes and anything that will hold, as has been the custom very generally with others. It takes three pounds of grapes to give one pound of raisins, which is about equal to the best price obtained for any considerable lot of foreign grapes. As proof that his foreign grapes are of superior quality, it may be stated that he recently sold eight or ten tons of them at \$100 per ton. He is now having a drying house constructed of capacity to desiccate a ton of grapes at one time. The climate of Pleasant Valley is particularly favorable to the cultivation of fruit and the products of the vine. Mr. Barker having picked four crops of grapes from the same vines in one year. As one crop ripens another crop is coming forward and last year he picked grapes from his vines on Christmas day. Some of his vines from which the grapes have recently been picked are again in blossom. He will have this year about one hundred tons of grapes, mostly of foreign varieties, and has been shipping them to market for about a month.

CHICORY.—The firm of Schrieber & Howell, at Rontier's Station, on the Sacramento Valley Railroad, have about seventy acres planted in chicory, and expect to obtain fifteen or twenty tons to the acre. It was impossible to obtain the requisite quantity of seed as early in the season as was desirable, and hence several acres of plants were destroyed by a species of black bug, which settled upon them before they had obtained substantial growth. The works are quite large, comprising a drying platform, 100 by 50 feet in dimensions; two cast-iron roasters, operated by steam, and capable of roasting 500 pounds each at one time, and a full complement of grinding and other machinery.

STUBBLE PASTURE.—The value of stubble fields for pasturage during our rainless summer and fall months, is just beginning to be appreciated. Until the rains wash out the nutriment or rots it, the straw and leaves that scatter and fall upon the ground are remarkable hearty food for all kinds of stock. We have seen horses and milk cows not only hold their own, but improve in flesh, running on dry stubble that an Eastern farmer would only think fit to starve an animal on.

GOOD HEALTH.

How the Air Gives Health and How it Causes Sickness.

A Popular Lecture by Dr. Lender.

[Translated from the German for the Press]

[Although some of the propositions assumed in the following remarks have not yet been accepted by the scientific world, yet, as they are popular in tone, and decidedly progressive and suggestive in character, we have no doubt our readers will feel an interest in their perusal, and derive profit from the views therein set forth.]

It is an old-time experience that the open, unconfined air has a favorable influence on sick organisms—improves the appearance, makes the muscles firmer; it is also a general experience that staying constantly in enclosed spaces, and even by staying a considerable length of time in our best houses, paleness of countenance, weakness and impaired power of withstanding chilly atmosphere, are induced, and the health finally is seriously impaired.

We naturally ask how it is possible that a body, which appears always so much the same as the air inside and outside of our dwellings, can have so different, indeed directly opposite effects.

Different effects on our bodies can only be produced by different substances which it has taken up. Hence we infer that the air inside and outside our dwellings, although it may appear always the same, always without color, taste or smell, must nevertheless have a different composition in the two cases; and we rightly demand that science should, if possible, disclose to us this hidden difference.

The First Proposed Solution of the Riddle.

When in the last part of the preceding century, it was ascertained that the air is a mixture, that it consists of two gases, oxygen and nitrogen, that oxygen is the more important element which the nitrogen serves to dilute; when it was found further that drawing in the breath means merely being hungry for oxygen and satisfying this hunger according to the needs of the body; when it was found that a grown person needs for his existence far more than 1,000 quarts (about 48 cubic feet) of oxygen every 24 hours, and that we can do without oxygen hardly for moments without danger of dying from suffocation; then people at that time called oxygen the air of life.

From the knowledge of these facts people thought that they could conclude that the different effects of free and confined air were due most probably to the presence of much oxygen and of little nitrogen in the open air, and of little oxygen and of much nitrogen in confined air.

But the investigations of the air of the highest heights and of the deepest depths of the mountains, fields and forests on the one hand, and of enclosed spaces, crowded theaters, churches and halls on the other, gave a very different result from what was expected. Everywhere oxygen and nitrogen were found present in a certain fixed proportion. In all places, at all times, under all conditions, the examination showed one-fifth oxygen and four-fifths nitrogen.

The riddle of the opposite effects of fire and confined air was, therefore, not solved. That the solution was no easy one is plain from the fact that, notwithstanding the great advances in science, it is only very recently that the solution has been found.

A Wonderful Creature in the Air.

In the air there are minute beings, too small to be visible to the naked eye, which are called *vibriones*. These beings, as Pasteur has shown, are the only exciters of putrefaction. By putrefaction we mean that decomposition through which nitrogenous plant or animal substances are changed into poisonous bodies.

If a vessel is closed with thick layers of cotton batting, the essential and the accidental gases of the air—or the oxygen and nitrogen and also carbonic acid, ammonia, etc.—penetrate the batting, but all solid bodies, and even the minute *vibriones*, are excluded. The result of this closing up of the vessel by a substance which filters the air is that putrefaction of any object in the vessel is prevented. All the disgusting appearances of putrefaction and decay, which we see in the dead bodies of plants and animals, are caused entirely by these minutest of beings and not by the gases of the air. That these beings are organized creatures is shown by their capacity of multiplying.

The *vibriones*, like all beings of the smallest class, are capable of limitless growth in numbers and would soon fill the air to such an extent that all plant and animal life would be ended, were not in the great household of Nature a gas constantly produced which serves to confine the multiplication of the *vibriones* within certain limits.

Now the surface of the earth is the hatching-place of the *vibriones* and the air is the place of generation of that gas which may be called the deadly enemy of the *vibriones* because it destroys them whenever it meets them.

A Wonderful Gas in the Air.

Of what nature is this gas? It is an oxygen, but oxygen of a higher, nobler kind. The common oxygen, as we know, forms one-fifth of the whole atmosphere; the higher kind of oxygen can be present in the open air only in exceedingly small quantities (up to one-tenth thousandth) because in its contest with the ever-

flowing stream of *vibriones* it disappears as rapidly as it is made.

The oxygen of the higher form is produced in large amounts during thunder storms by the flashes of lightning passing through the air; it flows out of the green leaves of plants; it is caused by combustion; it occurs wherever there is evaporation, as in the neighborhood of springs, especially where salt fluids evaporate, as on the surface of the ocean.

This excited oxygen, then, appears as an oxygen loaded with electrical power, an oxygen concealing in itself the glow of the sun's ray. It bears the same relation to common oxygen as the diamond does to graphite and to coal; these last three bodies, like our oxygen varieties, consisting of one and the same element—carbon—and having so different valuable properties because they carry bound up in them warmth and electricity—or elasticity in a word—in different amounts.

What nearer properties are there which distinguish excited from common oxygen? The first is denser, one and a half times as heavy as the second; hence it sinks from the realms of the air to the surface of the earth, the domain of the *vibriones*. It has, farther, a distinct odor, (while common oxygen is odorless) which is somewhat similar to that of chlorine, and from this odor it derives its common name of *ozone*. Its third and most important property is that, at the temperature at which we live, it burns up all bodies except gold, platinum and water. This property is the weapon with which it destroys the *vibriones*.

That ozone has the strongest burning powers is easily understood from the manner of its generation. It carries to a certain extent into the realms of darkness, into the domains of the *vibriones*, the heat of the sun's ray, the consuming force of the lightning, through which it is formed out of common oxygen. It is likewise easily understood that it ceases to exist separately in the same measure that it gives out its inner force, and that it can be found in the air in the smaller amount the more *vibriones* rise from below, from the earth, to meet it.

Two Deadly Foes.

Vibriones and ozone cannot exist together, for the one is immediately destroyed by contact with the other. Where, therefore, *vibriones* are found in large numbers no ozone is present, and vice versa where the ozone is found continually the *vibriones* exist not at all or only in small numbers.

When ozone and *vibriones* contest with one another, that one always remains the victor which has entered the field with the most numbers. But the victory is dearly bought, for the loss of the one corresponds to an exactly similar loss of the other.

There is then on the earth an independent region of *vibriones*, in which these are the sole rulers and into which ozone enters only in small amounts or not at all, and an independent region of ozone into which the *vibriones* enter only in small numbers or not at all. Where these two regions meet, there a deadly contest is waged night and day, so that the boundaries are constantly shifting as one or the other of the two parties has the advantage.

The True Solution of the Riddle.

The solution of the riddle of the opposite effects of free and of confined air is then this: the free air is the realm of ozone, while on the other hand, even our best houses come under the sway of *vibriones* which here, as in all spaces under the earth, have the mastery.

In order to be able to understand how it is that the *vibriones* injure the material condition and the functions of our bodies, but that the ozone constitutes a healing element of the air; that the air of our dwellings works with the power of a poison only through the *vibriones*, while the free air has the effect of a medicine through the ozone; a few facts may be given here.

Common oxygen is entirely inadequate to destroy *vibriones* at the common temperature. We should be then completely defenseless against the *vibriones* as long as we remained in our houses, were it not that our bodies have the power to manufacture ozone out of common oxygen. Through the chemical processes which go on in our bodies, not only are warmth and motion generated, but also electrical currents are caused, and these last, as we have seen, give rise to the formation of ozone. But the power of manufacturing ozone decreases as we grow older, and this decrease is the essential cause of the final decay of our organs. Again, our bodies are built up not directly by our food, but by our food only after being subjected to the action of ozone. We have facts which force us to conclude that the building up of our bodies—at least of our nerve system—is due essentially to ozone; and that decay in old age, which occurs certainly despite the most nourishing food, is due to the deficiency in the supply of ozone.

In our dwellings every breath which we draw in carries many *vibriones* into our blood. To destroy these we use the ozone manufactured in our bodies. Thus our organs, especially the blood, muscles and nerves, are robbed of the ozone which they need so badly, and it can be easily understood how deficiency in building up our blood supply causes paleness and weakness. The worse our dwellings are, the more *vibriones* there are present and the more injurious is it to remain in the house. The ozone made in our bodies no longer suffices to destroy all the *vibriones*. These last increase in number and cause many forms of sickness according to the part of the body which they

may attack. In the worst cases this grows so bad that the most serious epidemics arise.

What these Facts Teach Us to Do.

The knowledge that the *vibriones* work with the force of a powerful poison, the ozone acts as a powerful remedy, gives three things to do:

1st. To shun the localities where are decomposition and putrefaction—the strongest realms of the *vibriones*—as much as possible, especially during epidemics.

2d. To see that our houses are properly ventilated, so that we may have in them a constant inflow of pure air.

3d. Until the problem of perfect ventilation is solved, to manufacture ozone in our houses. It is to be recommended, especially in times of prevailing sickness, to place in our rooms saucers filled with salt water, these to be continually warmed or, better, evaporated by some mechanical contrivance.

We can easily ascertain how much ozone exists in the atmosphere where we happen to be. Strips of paper saturated with a solution of iodide of potash in starch paste are hung up so as to be protected from the rain and from the direct action of the sun. If no ozone is present the paper retains its color; a very little causes a reddish hue, considerable ozone gives a beautiful blue, and large amounts color blackish blue. "Ozonometers" are to be purchased which show very exactly just how much ozone is present.

We have seen how open air and confined air have different effects, how in nature, as in morals, there is ever going on a contest between an evil and a good spirit. Whether or no it will be possible that the doctors should be able to replace many of their prescriptions which often, as is well known, are poisons—it is not now the place to say. But one proposition cannot be too firmly remembered by the people, and that is this:

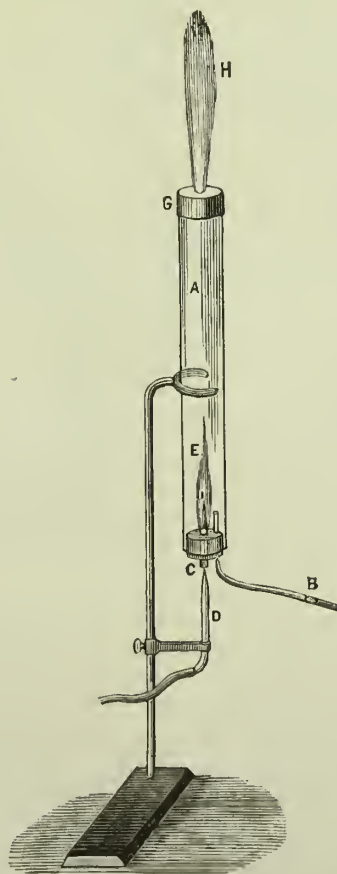
Every breath in our dwellings begins to poison and to weaken our bodies; every breath in the pure, free air begins of cast-out the poison and to strengthen us.—N. A. Z.

USEFUL INFORMATION.

An Interesting Experiment.

We transfer from the *American Artizan* the following illustration, which shows the reciprocal relation between bodies which burn and bodies which support combustion.

Referring to the accompanying figure. A glass cylinder, A, about 18 inches long and 3 1/2



wide, is fitted with a cork, through which pass two tubes, one of which, C, about 3/4 of an inch wide and 3 inches long, is placed in the center of the cork, forming a perfectly free communication between the interior of the cylinder and the exterior air. The other tube, B, serves as a coal-gas supply when connected with any gas-tap. A cap, G, with a hole in the center, is placed on the mouth of the cylinder.

Now, if a supply of coal-gas be allowed to issue from the tube, the gas will soon fill the cylinder, and the excess may be ignited at the top, as shown at H. The upward passage of the gas will occasion a certain amount of upward draught, which will draw in a small quantity of air through the tube, C. On carefully passing a lighted taper up this tube, this air may be kindled, and will continue to burn as an ordinary flame about four inches in length.

E. The upper, exterior flame is thus coal-gas burning in air, the lower, interior flame, air burning in coal-gas.

But the experiment may be pushed still further. The interior of the flame, E, is hollow, and contains a quantity of unconsumed air; so, if a small, fine tube, with a small flame of coal-gas burning from its tip, be thrust up the tube, C, it will continue to burn in the flame, E, as shown at I. If pushed beyond the flame, E, the flame, I is at once extinguished, no oxygen being present in the cylinder, A, to maintain the combustion.

This experiment thus illustrates the reciprocity existing between those bodies that burn and those other bodies that support their burning, and it also forms an illustration of the fact that all ordinary flames are hollow, as if we consider, as we may do, that the interior of the cylinder, A, is simply a continuation of the hollow portion of the flame, H, we have three flames, each one burning in the hollow cone of another.

How to File a Saw.

The grand secret of putting any saw in the best possible cutting order consists in filing the teeth at a given angle to cut rapidly and of a uniform length, so that the points will all touch a straight-edged rule without showing a variation of a hundredth part of an inch. Besides this, there should be just enough set in the teeth to cut a kerf narrow as it can be made, and at the same time allow the blade to work freely without pinching. On the contrary, the kerf must not be so wide as to permit the blade to rattle when in motion. The very points of the teeth do the cutting. If one tooth is the twentieth of an inch longer than two or three on each side of it, the long tooth will be required to do so much more cutting than it should, that the sawing cannot be well done. Hence, the saw goes jumping along, working hard and cutting slowly. If one tooth is longer than those on either side of it, the short ones do not cut, although the points may be sharp. When putting a cross-cut saw in order, it will pay well to dress the points with an old file, and afterwards sharpen with a fine whetstone. Much mechanical skill is requisite to put a saw in prime order. One careless thrust with a file will shorten the point of a tooth so much that it will be utterly useless, so far as cutting is concerned. The teeth should be set with much care, and the filing should be done with great accuracy. If the teeth are uneven at the points, a large flat file should be secured to a block of wood in such a manner that the very points only may be joined, so that the cutting edge of the same may be on a complete line, or circle. Every tooth should cut a little as the saw is worked. The teeth of a hand-saw for all sorts of work, should be filed fleaming, or at an angle on the front edge, while the back edges may be filed fleaming, or square across the blade. The best way to file a circular saw for cutting wood across the grain is to dress every fifth tooth square across, and about one-twentieth of an inch shorter than the others, which should be filed fleaming at an angle of about 40°.—*Industrial Monthly*.

HOW TREES ARE KILLED BY LIGHTNING.—All who have examined a tree which has been destroyed by a "thunderbolt," will have noticed not only how the layers of the wood have been shattered and separated into strips, as if full of "wind shakes," but also the dryness, hardness, and brittleness of the wood as though it had been through the process of curing in the kiln. This is attributed to the instantaneous reduction of the sap—the moisture within the wood—into steam. When this moisture is abundant, as in May or early June, the amount and force of the stem not only bursts and separates the layers and fibers, but rends the trunk in pieces or throws off a portion of it, down a line of greatest power or of least resistance. And when the amount of steam thus suddenly generated is less owing to the drier condition of the stem from continual evaporation and leaf exhalation, there may be no external trace of the lightning stroke; yet the leaves will wither after a few days, showing that the stem has been rendered incapable of conveying supplies, and the tree will partially or entirely die. Still lighter discharges may be conducted down the moist stem, without any lesion or hurt.

TOOL HANDLES.—A matter of much utility to mechanics, would be instruction in the best methods of forming tool handles. Turners too often make the handles of gouges, chisels, augers, etc., exceedingly pretty to look at, yet a practical mechanic would presume to pare off the elaborated mouldings with which the handles were decorated, and excuse his presumption by saying they were, until so pared, all but useless in the hands of a tradesman, as they hurt his fingers, and he could not see his work over the flanges of the mouldings. It is quite a common fault with inexperienced turners to amuse themselves with making handles which a working carpenter would not accept.—*Cabinet Maker*.

GREASE FOR GAS FITTINGS.—Dissolve one pound India rubber (not vulcanized rubber) in two pounds neat foot oil; the oil being carefully heated. Add one pound beeswax, mix when warm; let the mixture cool, and you will obtain the best grease for lubrication of gas stop-cocks, valves, etc. This grease has both valuable qualities of preserving the metal from gas corrosion, and of having a very prolonged influence.



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SAN FRANCISCO:

Saturday, August 31, 1872.

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STEAM PLOWING.—We have received an interesting letter from Alex. Campbell, on the working of Fowler's steam plow, in England and elsewhere.

We heartily approve of this system or any other that can be made available by the farmer of ordinary means; large farmers and large landholders can take care of themselves.

The subject of steam plowing can be exhausted and without any practical accomplishment, as well by saying too much, as too little, on the subject.

We would be pleased to receive short articles on this, or any other subject connected with progress in agriculture.

SEEDLING FIG.—W. Cantelow, of Oakdale, has sent us a specimen of a California seedling fig, which on tasting we pronounce rich and luscious. Another year's trial will be very likely to establish for it a high reputation.

With the fig came also a box of grapes. The grapes couldn't speak, and yet they told a story of skillful culture and a genial climate. We think of Cantelow every time we taste them.

MUSCAT GRAPES.—Stanislaus has become famous as a wheat-producing county; but not in wheat alone does she excel, for the Pentland Bros. of Knights Ferry, have this year grown a cluster of Muscat grapes so large the county couldn't well contain it safely any longer, so they sent it to the office of the RURAL PRESS. May their clusters never be less.

ON FILE.—W. B. San José; "H. W.," Fruit Vale; Farm House Chat; Letter from Los Angeles about silkworms—no signature; "M. A. F.," Solano Co.; "S. M. M.," Petaluma.

Editorial Notes at the Fairs.

For two reasons we have been anticipating a succession of interesting and valuable exhibitions, at the fairs of the several County, District and State Societies, this fall. First, because the last legislature very wisely appropriated sufficient money to these societies to enable them to offer liberal premiums for the exhibition of the several products of the farm and work shop, thereby stimulating all the industrial classes to greater exertion. And second, because the season has been prosperous, the crops have been good, and the laborer, in whatever calling, has found a plenty of work at good and remunerative prices.

These circumstances have placed everybody on good terms with themselves and with everybody else. The managers of the several counties have thus been encouraged and have made every preparation, and put forth every exertion necessary to success. If we may judge any thing by the opening of the Fair of the Horticultural Association in this city and the Stock show of the Bay District Agricultural Association on their grounds at Agricultural Park on the Cliff road our anticipations will be fully realized.

The former association has been encouraged to buy and fit up a hall for their exhibitions at an expense of \$25,000 and a most magnificent one they have. The exhibition now being held there of flowers, plants and fruit, is, so far as the two former articles are concerned, one fully worthy of the city and State in which it is made. Indeed we doubt if another city in the Union could make an exhibition embracing a greater number of varieties of plants and flowers—the representatives of so many countries and climes as are now to be seen at the Horticultural exhibition in this city.

Horticultural and Floral Fair.

No one who has any taste for flowers—for the natural beauties of the world, for the "poetry of nature," should fail to visit this exhibition. No farmer in the State who would have his home made beautiful, his family cheerful and contented, should fail to go himself and take his wife and daughters to this grand collection of plants and flowers. Here may be studied, not only the flowers themselves, but the art of artistic arrangement and combination to produce a pleasing effect. Here lessons in landscape gardening may be taken and studied by an examination of the miniature gardens on exhibition.

The crowds of people that daily and nightly throng this place show how highly it is appreciated and how widely spread will be the favorable lessons it is calculated to inculcate. The exhibition of fruit is not so good. The samples are fine, but there are few of them. In this, however, we were not disappointed. It was hardly to be expected that much fruit would be sent for exhibition here, when it would necessarily have to be renewed once or twice during the continuance of the fair, or allowed to remain in a decaying condition.

At the State Fair, however, we shall be disappointed if the fruit growers do not show an exhibition worthy of the State and worthy of that important and rapidly increasing industry.

But we must turn our attention to the

Stock Show.

We spent Tuesday among the cattle, horses, sheep and swine and their owners, and we will right here mention the strongest impression which that day's work and observations have left on our minds. It will be remembered that this Association was originally organized and is still kept up more particularly to develop by severe test, on the track, the speed of horses—to afford an opportunity for the pleasures and sports of the turf.

The show of cattle was an after consideration and was only added to make the fairs of the association conform more to the requirements of public opinion and a change of stock interests. To show how rapidly this public opinion and this interest has changed in this State within the past few years we will call attention to the

Grand Parade

We witnessed there on Tuesday, and what it consisted of. When all the large stock on exhibition were called out and sent marching around the half-mile track, it was a sight that would have pleased the most sturdy breeder of thoroughbred cattle of England.

The parade consisted of eighty head of horned

cattle, fifty-seven head of horses to halter, five double teams, nine buggies and sulkies, five horses under saddle and nineteen knights mounted and grotesquely caparisoned. The sheep, hogs and chickens of course were not shown on the track.

In this magnificent exhibition of horned cattle, the grand old Durham stock stands foremost, both in number and quality. The Devons are next in number and beauty of appearance. There are also fine specimens of the Alderneys, Ayrshires and Jerseys.

At the Stalls.

After the parade, with thousands of others attracted by the appearance of the cattle, we repaired to the stalls to examine them more closely and learn more about them. As you enter the yard, in the first stall on the left, stands at the head of a herd of seventeen Col. Younger's famous bull "Glenco." In the first stall on the right and directly opposite is J. B. Redmond's equally famous bull "Lollo Rooth."

These are both magnificent animals and would do credit to a stock exhibition in any country. We can scarcely refrain from comments on the cattle as we saw them, but our crowded columns forbid, and we are obliged to content ourselves with a very brief mention of them, assuring our readers however, that before the fairs are over we will give a more extended and justly deserved notice of all.

Colonel Younger exhibits "Comet" a 2 year dark red bull, of great promise, weighing 1,900 pounds. Also "Tempest," a dark red yearling, and four bull calves "Red Oak," "Planet," "Gold-Dust," and "Moonlight."

Then comes his two favorite cows, "Sprightly" and "Lady of the Lake." To be appreciated these cows should be seen. They are 4 years old and weigh respectively 1,700 and 1,710 pounds. "Glenrose" and "Norma" represent respectively his three and two-year old cows. "Jenny" and "Maid of Wood Lawn" yearlings. Heifer calves "Rosette" "Lady Booth" "Jem" and "Forest Queen."

The above are the representatives of the Colonel's herd of 58 head of Durhams.

Mr. Redman shows a six year old red cow, "Noveta Queen" and a yearling, "Queen 1st" weighing 1,102 pounds—and as three and two year old cows, "Bertha 28th" and "Bertha 29th," also "Damsel" a five year old, and two calves "Victor" and "Prime Minister." Mr. R. has 47 head of Durham stock on his place. W. S. Overhiser of San Joaquin showed ten head.

At the head of his list stands a red two-year old bull "3d Grand Turk of Oak Home," and a year old "4th Grand Turk of Oak Home." Then comes "Rosette 2d," "Rosette 3d," "Tulip 6th," "Tulip 8th" and "Rosette 5th," aged respectively, 5, 4, 3, 2, and 1 years. Then "Flora Temple 6th," 18 months, and Duchess "De Argente," 1 year, and a bull calf "9th Grand Turk of Oak Home." These are the representatives of Mr. Overhiser's herd of 32 head of Durhams.

Chas. Clark, of Santa Clara, shows a fine 3-year-old bull "Lincoln" and six head of graded cattle, which he claims are really thoroughbred, but because the rules of the Association require "pedigree," which he is not prepared to show from the herd-book, he enters them as graded. They show blood.

Page Bros. of Sonoma, show 3 head of Durhams: a 3-year-old bull "Sultan," a 4-year-old cow "Lady Jane" and a calf "Colata."

Robt. Ashburner, of Marin, shows 18 head of Durhams: "White Prince," "Mark Anthony," "Red Rose" and 15 others, but as their names and ages, even are not on the stalls, we can give no particulars.

Seneca Daniels, of Sonoma, shows 14 head of Devons, and J. R. Rose, of same county, shows 7 head of the same breed of stock. You may talk to Daniels or Rose from now to doomsday and you can't make them believe that there is any better cattle in the world, for our own peculiar climate, than the Devons. There are many others who think the same way. Experience ought to make good judges and Daniels and Rose are noted for shrewd business sagacity.

A. Maillard, of Marin, shows 4 head of Alderneys, fine samples of this breed of cattle.

F. D. Atherton, of San Mateo, shows 6 head of Ayrshires, and Thos. H. Selby, of this city, 1 head; good representatives of their kind.

P. L. Weaver, of Napa, shows 4 head of the famous dairy cattle the Jerseys, as a representation of a herd of 21.

Sheep.

Robert Beck, of Sacramento, shows 10 head—

5 rams and 5 ewes—representatives of his flock of 75 head imported this year from the famous Silesian flock of Wm. Chamberlain of Red Hook, New York.

Page Bros. show 17 head, 6 rams and 10 ewes, of the French merino.

Smith & Overhiser show 34 head, all Spanish merino.

Peter Saxe shows 2 rams, 8 ewes and 4 lambs of the Cotswold sheep.

Saxe & Jewett, show 33 head of Spanish merinos just imported from Vermont.

Swine.

Peter Saxe shows 2 Chester Whites, 11 Berkshires and 2 Essex, just imported.

Oakland Plazas and Parks.

Recently before the Oakland Farmers' Club, Mr. Pryal called attention to the dry and God-forsaken appearance of the two plazas, situated in the midst of our neighboring and beautiful city "on the right side of the bay." He mentioned that the grounds might be utilized and improved at the same time by local nurserymen, and gave the accompanying remarks of general interest. Are there not other places in California that have neglected public grounds?

"I have been in Europe and have seen the parks and pleasure grounds there and the cottage with the flower plats and embowered in roses, which sometimes makes a whole district resemble a little paradise. Here, our rich people think of nothing but the almighty dollar. This is all wrong and must be changed. When I came to California twenty years ago, people did not care for these things, and I could find no employment as gardener. I went into the country, took up forty acres, followed my profession, and am now well satisfied with my possessions. We must have a public park where our people can assemble, and where men can bring their families and enjoy themselves."

"At Leamington, in the center of England, there was a poor boy named Jefferson, employed by an apothecary to sweep out his shop. The apothecary saw there was something in him, and he taught him to read and write. This boy afterwards became the celebrated Dr. Jefferson to whom the University of Oxford refused a diploma, until he became physician to the king, when they granted him the decree of A. B. Leamington then was without parks or gardens of any kind, but Dr. Jefferson determined to do something towards beautifying his native town.

He offered the town Commissioners thirty acres for a public garden if they would buy thirty more. This they did, when he made a grant of sixty additional acres, and now Leamington boasts the finest public parks and pleasure grounds in England. Dr. Merrill, in Oakland, should follow the example of Dr. Jefferson, if he wishes his name to be handed down to posterity. There was, for instance, Lake Merritt in which there was an island, and which might be made a most delightful spot, if there was a bridge constructed from the mainland to the island, and another from the island to the opposite shore. I hope that the doctor or some other rich man will act on my suggestions in Oakland."

Law of Horses.

We have received from A. L. Bancroft, San Francisco, a "Practical Treatise on the Law of Horses," by Robert Clarke & Co., Publishers, Cincinnati, Ohio. It is just the book that all persons interested in horse property ought to have.

It is a book of 245 pages; its nine chapters are divided into 479 sections, containing direct references to nearly a thousand cases in which the law relating to warranty, contracts and frauds in the bargain and sale of horses is fully discussed and settled; with rules relating to unsoundness and vice in horses.

The responsibility of proprietors of livery, auction and sale stables, veterinary surgeons and farriers, inn-keepers, horse breakers and trainers having the charge of horses, is a feature of the work deserving of careful attention.

It is a cheap and valuable book at the publisher's price, \$3.50.

SALES OF CHOICE STOCK.—Among the buyers thus far of fine stock brought to California by Messrs. Saxe and Jewett, are H. A. Rawson of Red Bluffs; A. P. Mose and Bro., Santa Rosa Island; Godchaux and Blackburn, Passo de Robles; Wm. Hill, Esq., of Sonoma; Hon. John Boggs, Colusa; and several parties at Los Angeles; Wm. Angle of Mendocino. Some 160 head have already been sold, which demonstrates that the stock is well appreciated.

KALSOMINE WHITEWASH.—In answer to an inquiry by C. M. in regard to this wash, we say that, we copied the article from an exchange "The Manufacturer," as we found it.

Louis Agassiz.

Louis John Rudolph Agassiz, whose portrait accompanies this sketch, may justly be considered one of the most remarkable men of the age. No man of any time has devoted his energies more untiringly to the study of science than has Professor Agassiz; and certainly no living man has contributed more to the solution of the various problems of natural science. His life has been one of most intense and persevering labor, self-denying throughout, and it is neither adulation or extravagance to place his name at the very pinnacle of scientific fame.

His portrait, while it indicates a man of great mental and physical power, intense tenacity and keen observation, exhibits at the same time a countenance of much benignance and repose. His expression is friendly, inviting and full of meekness. His forehead is strongly indicative of intelligence, while the whole contour gives evidence of robust health and a superabundance of vitality.

Such an organization is well calculated to enable a man to take and maintain a front rank among men, to urge on and sustain its possessor in such a life-work as that in which the subject of this sketch has been engaged, and which he still, at the advanced age of sixty-five, pursues with all the ardor and mental, if not physical, energy of a man in the prime of life and vigor. He has been aptly described as a man of no high-pressure engine or race-horse stamp, but rather one who may be compared to a mammoth low-pressure engine, capable of exerting a tremendous influence in a steady and most effective manner.

Prof. Agassiz, though a native of Switzerland, is of French descent, his family having been among the expatriated Huguenots. His father was a protestant clergyman, as have been his lineal ancestors for six generations back. Young Louis was early taught the precepts of a Christian life, and the great truths thus instilled into his youthful mind have grown with his growth and deepened into convictions no less firm than have the great principles of scientific truth which he has evolved from his life-long studies of nature.

The Professor is no progressionist, but is the upholder of the doctrine of successive creations, advancing in improved orders of organized beings on the earth. He denies that species insensibly pass from a subordinate to higher, but that each has had its appointed period and separate creation. This, he holds, is taught by the book of nature as well as by the revealed Word, and herein he claims and says we have "the most palpable demonstration of the existence of a personal God, author of all things and maker of the universe. This, at least, is what I read in the works of creation."

At the very early age of ten years, Agassiz evinced a decided taste and ability for the prosecution of scientific researches, and never seemed happier than when climbing the steep acclivities of his mountain home in search of something new in the way of fern, flower, or fossil. In later years, when a promising and lucrative business was held out to him, he still chose to continue his researches, with often but a single sou in his pocket, "a sum so little," he said, "when my hunger was so big." But he could not give up his cherished love of the half effaced sigus of the unknown language which he insisted God had written upon the rocks, that men should trace out, with all the care, perseverance and love with which a child would follow the footsteps of a father loved and

about fishes tell us anything about this fossil without seeing it." The young man stepped promptly to the blackboard and drew a figure, which, when the fossil was unwrapped, proved to be its perfect representation. The old grey-headed scientists, by whom he was surrounded, thereupon promptly recognized the ruddy cheeked youth as one of their equals, and from that time to the day of his death, Sir Roderick was one of his warmest and most zealous friends.

One of the first works undertaken by Agassiz, was the ichthyological portion of the great work of Martius on the natural history of Brazil. The manner this work was performed placed him at once in the foremost rank of naturalists. In this work he gave to the world a new classification of fishes to which he has ever since remained steadfast. We have no space to refer, even by title, to all his numerous, valuable scientific works. The one per-



PROF. LOUIS AGASSIZ.

lost. Forseeing the probable future of their boy, the parents, with a most commendable judgment, sent him at the age of eleven to the Gymnasium at Vienna, with the view of first laying a proper physical foundation as the true basis for a sound mind. We have not the space to follow him in the various steps of educational progress which prepared him so well for the high position which he has occupied in the world of science. Passing over the fact that while yet a youth he made the acquaintance and won the friendship and admiration of such men as Humboldt, Cuvier, Oker, Martius, Schelling, Dollinger, etc., we will merely refer to his first introduction to the scientists of England.

Having found his way to London, alone and without introduction, he sought out Sir Roderick Murchison. The great naturalist noting his beardless chin, asked: "Well, sir, what do you know?" "A little about fish," replied the young man with hesitation. Sir Roderick invited him that evening to the meeting of the Royal Society, at which, to test his knowledge, he took up a covered package containing a fossil fish, stated the exact condition and geological position in which it was found, and asked, "Can our young friend, who knows something

about fishes tell us anything about this fossil without seeing it." The young man stepped promptly to the blackboard and drew a figure, which, when the fossil was unwrapped, proved to be its perfect representation. The old grey-headed scientists, by whom he was surrounded, thereupon promptly recognized the ruddy cheeked youth as one of their equals, and from that time to the day of his death, Sir Roderick was one of his warmest and most zealous friends.

The results of his expedition to Brazil with a scientific staff in 1865-66 are well-known. In addition to his scientific report of that expedition he also, in connection with his wife, who accompanied him, wrote and published a work on that country, abounding with charming sketches of Brazilian life and scenery.

The expedition in which he is now engaged and in which he is also accompanied by his wife, promises to be one of equal if not greater importance to the cause of science than any in which he has been before engaged. Ere these lines meet the eye of the reader it may be that he will have arrived in this city, where he will receive a most cordial welcome.

As may well be supposed from what has been said, Agassiz' method of teaching is very clear and simple, and he possesses a happy faculty of at once establishing a cordial and mutual attachment and sympathy between himself and pupils, who seem at once to enter into and catch up the interest and spirit of their master.

Alfalfa and Clover.

It is very generally conceded that alfalfa will take the first rank among our forage plants, producing a larger quantity per acre than any other of the cultivated clovers or grasses, and making a fair quality of hay. Its wonderful productiveness coupled with its power of continuing green and succulent whilst all other forage plants are withered and dried from lack of rain for four or five months of summer, will make it a favorite feed with the California stock grower, summer and winter.

Its habit of sending its roots down to moisture in any soil in which it gets a hold, renders its cultivation a success upon lands so high and dry that most of our cultivated grasses and even

the favorite red clover of the Eastern States would be completely dried out. But the red clover makes a better green food for any animal, than alfalfa and a better hay; it is the next most productive of our forage plants to alfalfa, and on suitable soils will be found the most profitable of all.

Clover for Swine.

Red clover has been found to be an excellent food for swine old and young; no other food is necessary, so long as it remains green; six nearly full grown hogs can be kept in a thriving and growing condition, or four can be made fat on one acre of clover, and hogs thus fed are found in a better condition and healthier than when fed upon any kind of grain.

They expand into larger and better formed animals and are in better "heart" and condition to be put upon fattening food in autumn than fed constantly upon any kind of grain and the quality of the pork is better than when running entirely upon the wild grasses and weeds of such moist lands as they may have access to.

Here is where our delta islands with their perpetually moist and fertile soils sown to clover show their superiority as feeding grounds for swine, in connection with outside ranges upon adjoining interior unimproved lands. Sow the borders of these hog ranges with red clover and the inducement to hogs to come up to them for an occasional "square meal" of it, will do much towards preventing them from becoming too wild for convenient management, whilst the effect upon their thrift will be evident during the whole season.

ST. GEORGE PEACH.—EDS. PRESS Mowing noticed so many of plague-stricken peaches in your markets, I take the liberty to send you a sample of my St. Georges, and I hope your "devil" will have some chance to be exorcised by them. Very truly yours,

J. STRENTZEL.

Alhambra, Aug. 26th.

With the kindest regards to Dr. J. S. for his good wishes toward our "devil" and us, but we are obliged to say, however, that with the aid of our "devil," St. George has been utterly devoured. "Very Superior!"



My Ship.

"How many watchers in life there be
For the ship that never comes over the sea."
But mine came in with the autumn wind,
Bearing the treasure I'd sought to find—
Sought from the early spring till now,
With weary feet and aching brow—
Sought with anxious toil and pain,
Looking eagerly over the main
To catch a glimpse of the snowy sail,
Borne by Fortune's favoring gale.

Bravely my loved ones wrought at my side;
No ship for us came over the tide,
And some went down in the dashing wave,
And some were left the storm to brave.
Sadly we toiled and struggled awhile,
Waiting for Fortune's fickle smile;
Till summer was past, and the autumn gale
Began to fill the wished-for sail.
Our ship was coming then, we knew,
As we saw it plow the waters blue;
'Tis autumn's breeze the sail that fills,
And her glory lies on the western hills.

But with sounds of welcome gladness
Mingles an undertone of sadness:
Had it only come in the early time
When the hopes of youth were in their prime,
When the loved and lost were with us yet!
—Mar not the Present with vain regret;
Let the Past keep its sorrow, its pain and tears,
There's a promise of peace for the coming years.
And our hearts kept time with the ocean's swell,
Which seemed to murmur, "It is well!"

How to Rest the Minds of Children.

The problem how to rest the mind is full of importance in its application to children. Our school system as at present constituted is attended with many evils. The children are kept still too long. They are expected to study six hours or more in a day, when grown men find it difficult to do as much, though fully interested in the subject of their study and gifted with mature minds. It is believed that the ultimate education of youth would be as efficient both to the individuals themselves and society, if the children did not begin so young or study more than half as long.

A bright little girl with a pale face and undefinable pains all over her body presents herself to the physician for treatment. She has been at school since she was six years old, and she is now eleven. Her mother informs him that she has been little inclined to take any exercise for two or three years past, though previously robust and healthy. She cannot go out to play after coming home from school, because she is tired or has lessons to get. Every little while she has a short illness. She is fond of study, is flattered by her teacher and makes good progress in her lessons. Such a child should leave school at once, and remain away until she is well, notwithstanding the protest of the teacher that she knows more about the child than the doctor does, and it is a shame to take away her best scholar. Not only are weak and delicate children made invalids by this excessive confinement, but those who are strong suffer a loss of stamina.

Now the great difficulty in reducing the number of hours of school is that the parents are unwilling to have it done. They want the children out of the way. For this reason they send them to school at the earliest possible age, and wish them to remain there as many hours in the day as possible. Calisthenics and walking exercises are now quite generally introduced into school rooms, and every effort is made on the part of the teachers to secure the good health of the pupils. It is the public who need to be aroused to the importance of this subject.

If, then, it be true that a greater length of time is spent in the schools than is required for mental discipline, could not the surplus time be better utilized in attempts to keep the children alive? If three hours a day will secure the good results that are now accomplished by six, the three hours thus gained might well be devoted to some manual employment that will at the same time give the children exercise and teach them useful trades. At all events, it would show them what manual labor is, and would make them feel that it is honorable.

—Hearth and Home.

Suffrage for the Working Woman.

When women are cursed with their granted prayer, the hardest lot will fall to those whose lot is hardest now. It is the working woman for whom all is asked; but it is the working woman on whom the sword will be turned. She is the unfriended or the insufficiently befriended. Working women are chiefly those whose male relatives are unable or unwilling to support them. "The loving and beloved wife," the "petted and caressed daughter" of the strong and successful man will be scarcely conscious of any change. In her well-guarded home it matters little to her whether she is loved by law or grace. But the unguarded woman must fight her fight with the same real and relative disability as now; but with an assumed, a legal equality, which precludes privilege, though it cannot disarm fate. While she has no vote, no defined power, her position is a constant appeal to chivalry, a constant rebuke to brutality. When she has seized the suffrage, her brutal employer and the not too gentle by-standers will not fail to say: "Now you have got your long-sought equality, make the most of it. Ask no favors, and look out for yourself." Alas! but women are women still. Change thy laws, thy state is all the same. Good men will be good, but the bad and selfish will have no cloak for their sin. With women somewhat deferred to, with greed somewhat held in leash by shame, the life of the weak women is hard enough. Is it likely to be easier when she has dismissed the advantages while retaining the disadvantages of sex, challenged her foes to combat, and dulled the swords of her defenders.—Gail Hamilton

LEARNING AND LIFE.—When Dr. Woolsey delivered his farewell address on his retirement from the Presidency of Yale College, he uttered one sentence full of deep significance. He was invoking all good things for the institution he loves so well, and these were part of his closing words: "May its faculties keep in the van of their sciences, teach with a loving spirit and feel that life is more and higher than learning."

The italics are our own, because we regard the spirit of the words as worthy the deepest emphasis. Learning is truly valuable only as it makes better the life; only as it enlarges and enriches living. Sometimes it falls far short of this. Not seldom it does narrow down, seemingly belittling men. We have said aforesaid, and we would repeat it earnestly, that what is desired is not so much the scholar in the man, as the man in the scholar. Better little scholarship and a large manhood, broad and generous, than much scholarship and a manhood dwarfed, narrow, ineffective. We have known manly men, noble, helpful to all their kind, for whom the schools had done little. The world needs more such, and the scholarship.

DISCONTENT.—Some people are never content with their lot, let what will happen. Clouds and darkness are over their heads, alike whether it rain or shine. To them every incident is an accident or calamity. Even when they have their own way, they like it no better than your way, and, indeed, consider their most voluntary acts as matters of compulsion. We saw a striking illustration the other day of the infirmity we speak of, in the conduct of a child about three years old. He was crying because his mother had shut the parlor door. "Poor thing," said a neighbor, compassionately, "you have shut the child out." "It's all the same to him," said the mother; "he would cry if I called him in and then shut the door. It's a peculiarity of that boy, that if he is left rather suddenly on either side of a door, he considers himself shut out, and rebels accordingly." There are older children who take the same view of things.

ALL FOR HOME.—Seldom do we see a greater truth more beautifully expressed than this from the N. Y. Nation: "Refined homes are the end of civilization. All the work of the world—railroading, navigating, digging, delving, manufacturing, inventing, teaching, writing, fighting, are done, first of all to secure each family to the quiet of its own hearth, and secondly, to surround as many as possible with grace and culture and beauty. The work of all nations for five thousand years is represented in the difference between a wigwam and a lady's parlor."

If we would have powerful minds we must think.

Benefits of Female Society.

It is better for you, says Thackeray, to pass an evening in a lady's drawing room, even though the conversation is slow, and you know the girl's songs by heart, than in a club, tavern or in the pit of a theatre. All amusements of youth to which virtuous women are not admitted, rely on it, are deleterious in their nature. All men who avoid female society have dull perceptions, and are stupid, or have gross tastes, and revolt against what is pure. Your club swaggers, who are sucking the butt of billiard cues all night, call female society insipid. Poetry is insipid to a yokel; beauty has no charms for a blind man; music does not please a poor beast who does not know one tune from another; I protest I can sit for a whole night talking to a well regulated, kindly woman about her girl coming out, or her boy at Eaton, and liking the evening's entertainment. One great benefit a man may derive from a woman's society is that he is bound to be respectful to them. The habit is of great good to your moral man, depend upon it. Our education makes us the most eminently selfish men in the world. We fight for ourselves, we push and yawn for ourselves, we light our pipes, and say we won't go out; we prefer ourselves and our ease; the greatest good that comes to a man from a woman's society is, that he has to think of somebody but himself—somebody to whom he is bound to be constantly attentive and respectful.

ETIQUETTE FOR YOUNG CHILDREN.—Do not attempt to teach your children all the rules of table etiquette, and then command them to live up to them. It is a cruel task for any young child to keep still. He was never made to sit like a ramrod, straight and stiff, but wants to eat and wriggle—and eat and move—and eat and chat—and eat and laugh; thus rendering it utterly impossible for him to eat too fast, and do all those things he so much likes to do when unrestrained.

Suppose an accident occurs at the table, and a tumbler is broken, or a spoonful of sauce goes anywhere but to the child's mouth; suppose the table-cloth and his napkins are soiled, it is of no consequence when put in comparison with injured digestive organs; and a rapidly-swallowed dinner is sure to hurt the digestion, to weaken the process; and, if followed up for a time, will surely make a case of dyspepsia. Eating was designed by Him who gave us appetites, to be a season of enjoyment.

THE HUSBAND.—Ladies sometimes do not value their husbands as they ought. They not unfrequently learn the value of a good husband for the first time by the loss of him. Yet the husband is the very roof-tree of the house, the corner-stone of the edifice, the keystone of the arch called home. He is the bread-winner of the family, the defence, and its glory, the beginning and the ending of the golden chain of life which surrounds it, its consoler, its law-giver and its king. And yet we see how frail that life is on which so much depends! How frail is the life of a husband and father! When he is taken away, who shall fill his place! When he is ill, what gloomy clouds hover over the house! When he is dead, what darkness, weeping, agony! Then poverty, like the murderous assassin, breaks in at the windows; starvation, like a famishing wolf, howls at the door. Widowhood is too often an associate of sackcloth and ashes. Orphanhood, too, means desolation and woe.

HAPPINESS AN ESSENTIAL TO BEAUTY.—Do not think you can make a girl lovely, if you do not make her happy. There is not one restraint you put on a good girl's nature—there is not one shock you give to her instincts of affection or effort—which will not be indelibly written on her features with a hardness which is all the more painful because it takes away the brightness from the eyes of innocence, and the charm from the brow of virtue. The perfect loveliness of a woman's countenance can only consist in that majestic peace which is founded in the memory of happy and useful years—full of sweet records; and from the joining of this with that yet more majestic childishness, which is still full of change and promise, opening always—modest at once, and bright with hope of better things to be won, and to be bestowed. There is no old age where is still that promise—it is eternal youth.—Ruskin.

YOUNG FOLKS' COLUMN.

Our Chatter Box.

They call me "Little Chatter-box;"
My name is little May—
I have to talk so much, because
I have so much to say.

And oh! I have so many friends!
So many! and you see
I can't help loving them, because
They every one love me.

I love papa and my mamma;
I love my sisters, too;
And if you are very, very good,
I guess that I'll love you.

But I love God the best of all;
He keeps me all the night,
And when the morning comes again,
He wakes me with the light.

I think it is so nice to live!
And yet if I should die,
The Lord would send his angels down
To take me to the sky.

The Spider's Bridge.

In the last issue of the PRESS we gave a description, with pictorial a view of a singular bridge made by some Indians in British Columbia. To-day we propose to describe in the "Young Folks' Column," another kind of bridge made by a spider, and which any of our young friends can probably see repeated by observing how it was brought about by a correspondent of *Hearth and Home*, which account we give below:

One chilly day I was left home alone, and after I tired of reading Robinson Crusoe, I caught a spider and brought him into the house to play with. Funny kind of a playmate, wasn't it? Well, I took a wash basin and fastened up a stick in it like a liberty pole or a vessel's mast, and then poured in water enough to turn the mast into an island for my spider, whom I named Crusoe, and put on the mast. As soon as he was fairly cast away he anxiously commenced running round to find the road to the mainland. He'd scamper down the mast to the water, stick out a foot, get it wet, shake it, run round the stick and try the other side, and then run back up to the top again. Pretty soon it became a serious matter with Mr. Robinson, and he sat down to think it over.

As in a moment he acted as if he wanted to shout for a boat, and was afraid he was going to be hungry, and I put a little molasses on the stick. A fly came, but Crusoe wasn't hungry for flies just then. He was homesick for his web in the corner of the woodshed. He went slowly down the pole to the water touched it all round, shaking his feet like pussy when she wets her stockings in the grass, and suddenly a thought appeared to strike him. Up he went like a rocket to the top and commenced playing circus. He held one foot in the air, then another, and turned round two or three times. He got excited and nearly stood on his head, before I found out what he knew, and that was this: that the draft of air would carry a line ashore on which he could escape from his desert island. He pushed out a web that went floating in the air, until it caught on a table. Then he hauled on the rope until it was tight, struck it several times to see if it was strong enough to hold him, and walked ashore. I thought he had earned his liberty, so I put him back in his woodshed again.

Geographical Puzzle.

For breakfast take a cape of Massachusetts and let it soak all night; then shred up fine and cook in a river of Montana. This and some harbors of New Jersey will be the principal warm dishes. Some may like with these a river of Vermont, sliced very thin and well seasoned. It will be necessary to go to a mountain in Washington Territory for an indispensable article of food, and five-eighths of a little city in Wisconsin, well stewed, without scorching, will be sufficient in the way of fruit. Such a breakfast may be very cheerful if every one politely gets upon a cape of North Carolina to see that each is well helped and cared for.

A LITTLE six year old boy was asked by his teacher to write a composition on the subject of water, and the following is the production: "Water is good to drink, to swim in, and to skate on when frozen. When I was a little baby the nurse used to bathe me every morning in water. I have been told that the Injuns don't wash themselves but once in ten years. I wish I was an Injun!"

DOMESTIC ECONOMY.

Hints About Baking.

The most difficult of the young housewife's duties is that of baking. Food prepared in the best manner, may be ruined by a fire which is either too hot, or too slow, during any part of the process.

There are countless recipes for the preparation of food, but very little instruction as to the manner of baking it. Each one must learn by experience, and there are more provoking failures in that direction than any other; and some, although they learn the facts, never learn the whys and wherefores of success.

I used to think that to bake anything well, the oven must be as hot as it could be without burning the article to be baked, all the time it was baking. This is not the case with anything except crackers and cookies.

For biscuits, the oven should be equally hot when they are put in, but should begin to cool a little before they are taken out; this makes them very light, but one has to watch to keep them from being scorched; eight minutes are enough to bake them; if baked with such a fire as that required for bread they are heavy.

For gems made of Graham flour and water, or for corn bread, the oven should be very hot, but the fire should have been built sometime before they were put in, and begin to go down by the time they are light; for if the oven remains as hot as was necessary to make them rise, they will burn before they are thoroughly cooked through.

Bread requires a much slower fire, but it should be even and steady from first to last.

Cake requires a still slower fire than bread, but it must not be too slow or the cake will not be thoroughly cooked through, and will fall when taken from the oven. If the fire is too hot at first, it will crust over before it is light, and burst through the crust and rise rough and homely. If the cake is large, some nails or other bits of iron should be placed under it, and a paper spread over it, else it will scorch before it is cooked through. Any kind of bread or pastry mixed with water requires a hotter fire than if mixed with milk.

Fruit pies require a hotter fire than bread, but steady from first to last; if too hot at first the crust will cook before the fruit does; if too slow, towards the last the crust will dry up before the fruit is done; if too hot, toward the last the fruit will stew out before the crust is done. Pumpkin pies require a fire as hot as can be without burning the crust.

Custards require a slow fire, else they will boil and whey out before they are done. But puddings require a hot fire, particularly Indian pudding, for they are all the better for being wheyed out.

In baking meat pies always leave a hole in the top crust, else a poisonous gas will collect in it.

For baking meats the fire should never be hot enough to burn the grease; pork and chickens should require a hotter fire than beef.

We talk about hot, quick and slow ovens, but it takes a very long experience to enable one to tell by the feeling, or in any other practical manner, just how hot an oven is, until we see its effect on the articles cooked, and then it is too late; and it is impossible to communicate to any one else the precise temperature which is represented by our ideas of hot, quick, etc.

It is a matter of guess-work after all. In fact our whole system of cooking is more or less a patched up system of guess-work. We have rules and recipes for rich cakes and puddings, but bread of all varieties, pies, butter, etc., are made by guess. And even in those recipes which we have, the ingredients are measured in all manner of vessels, and no two persons understand alike the terms which designate the quantities.

One of our friends has a stove with glass oven doors. Why could not a thermometer also be attached to them?

I hope to see the time when cooking shall become an exact science; when we shall not only measure the heat of our ovens with thermometers, and know the precise temperature of which they should be for each variety baked therein; but shall also know the temperature at which our yeast and bread-sponge and cream should be kept; when we shall prepare all articles of food by correct recipes, and measure all ingredients in exact and standard measures, which shall be alike all over the country, so that mistakes can only occur when we fail to follow the rules.—*Mr. R. B. Hastings in Prairie Farmer.*

Vegetable Beefsteak.

This fungus (*Fistulina hepatica*), which resembles a great red tongue protruding from tree stems, when once known can never be mistaken for any other species. When young it is a dull, pale, purplish red, but becomes more red, and passes through brown to black as it decays; the under side is cream color, with minute red points occasionally, becoming yellowish-red as it grows. It generally confines itself to old (and often prostrate) oaks; but in Epping Forest, near London, it is not uncommon on the beech, and it has been observed on the chestnut, walnut, willow and other trees.

Although such a large fungus, frequently

weighing from four to six pounds, its growth is very rapid, soon appearing and again disappearing on ancient trunks in the autumn. When cut, broken, or bruised, it distills a copious red juice like beef gravy. "When grilled," says Dr. Badham, "it is scarcely to be distinguished from broiled meat;" and Berkeley describes it as "one of the best things he ever ate, when prepared by a skillful cook." There is a very slight acid flavor in the fungus when cooked which adds considerable piquancy to the dish; it is extremely tender, succulent, and resembles tender steak or tongue in a remarkable manner; the juice it distills being in taste and appearance like gravy from an excellent broiled rump steak. Of course it should be gathered when quite young, fresh, and clean, and at once prepared for the table in the following manner: Wash and dry, cut into inch slices half an inch wide, soak in scalding water for five minutes, and stew with butter and herbs; yolk of egg may then be added, and serve hot; or simply stew with a good steak, adding a scallion and parsley, salt, and pepper.

Correct Way to Sweep a Carpet.

There are three ways to sweep a carpet—one right and two wrong ways. One wrong way is to hold the broom nearly in front of the operator, with the handle inclined backward toward him, then press down a forward thrust is given, and thus heave the heavier dirt half-way cross the room, while the light particles are sent whirling around, covering, as it settles, every article of furniture. Another wrong way to sweep a carpet is to move the broom forward with a heavy, drawing stroke, by which the material to be removed is pressed into the carpet rather than worked gently along on the surface. If either of these wrong ways is adopted, the broom will wear out the carpet more than it is worn by the occupants of the dwelling. When a sweeper collects a dust-pan half-full of the nap of the carpet every time it is swept, a new one will soon be required. The right way to sweep is to incline the handle a little forward, then give a light drawing stroke, allowing the broom to scarcely touch the carpet. Not one-half the weight of the broom should be allowed to press on the carpet, as the dirt is moved forward. Let the dirt be moved and rolled along lightly. If a generous quantity of tea-grounds, small bits of wet paper, or clean and wet saw-dust can be spread over the carpet before the sweeping is commenced, all the fine dirt will adhere to the wet materials. A little smart woman who is a terror to dirt will frequently hurl it about the room as if it were impelled by a whirlwind, and when the task is ended her dust-pan will contain scarcely enough to pay for sweeping. But by using a good broom having a long, elastic brush, touching the carpet lightly, it will scarcely require the strength of a child to sweep a large parlor in a few minutes. Scarcely one house-keeper in fifty understands how to sweep a carpet correctly.—*Moore's Rural.*

APPLE PORK PIE.—Core, peel, and quarter some fine juicy baking-apples. Make a nice paste with fresh butter and sifted flour, and line with it the bottom and sides of a deep dish. Put in the apples, and strew among them sufficient brown sugar to make them very sweet. If you can obtain a fresh lemon, pare off very thin the yellow rind, and squeeze the juice to flavor the apples. Prepare some fresh pork steaks, cut thin, and divested of all the fat except a little at the edge; removing the bone. Cover the apples with a layer of meat, and pour in a tea-cup of sweet cider. The contents of the pie should be heaped up in the center. Have ready a nice lid of paste, and cover the pie with it, closing and crimping the edge. In the center of the lid cut a cross-slit. Put it into a hot oven and bake it well. This is a farm-house dish, and very good; try it.

GREEN TOMATO SAUCE.—One peck of green tomatoes, slice thin, twelve large onions sliced, pack in a jar alternately with a little salt, let remain one night; next morning pour off the brine, mix the following. One box of mustard, one ounce of ginger, one of black pepper, one half ounce of allspice and cloves and three pounds of sugar; cover with the best cider vinegar, simmer slowly until the tomatoes look clear.

TO MAKE POP CORN BALLS.—While popping your corn put some syrup on the stove, the nicer the better, and boil it down quite thick. Put your corn, while hot, in a dishpan, or any large vessel convenient, pour the syrup over it and stir it well with a spoon. It only needs enough to make the corn stick together. Butter your fingers and make up the balls quickly any size you wish. Lay on a plate until cool, and they are nice.

COOKING EGGS.—This is said to be a hygienic method. Put them into boiling water sufficient to cover them, and let them remain ten or fifteen minutes; keep the water nearly up to the boiling point, but do not let them reach that point. Fresh eggs will cook sooner than the old ones. By this process the yolks will be well cooked, while the white does not become tough and hard to digest.

TABLE MATS.—Straw table mats may be cleaned by washing them in washing-soda water. Lay them out in the sun, and when nearly dry press them between cloths or paper.

Graham Bread.

A correspondent enquires of the *American Agriculturist* how to make good Graham bread, to which another correspondent replies as follows: "It is never made successfully after the usual recipes for bread of fine flour. To all who have thoroughly tried the Graham Gems, I think that form of Graham bread is most acceptable. The method of making these is very simple. The essentials are patty pans, buttered and well heated, and a hot oven. Nothing else but the meal and water. Inexperienced persons will probably make the batter too stiff, and it may take them some time to learn that the gems seem lighter and sweeter if made salt. I am no vegetarian, and use salt daily in my food, but I think it a mere superstition and gastronomic mistake to put salt into some forms of bread.

[Our inquirer may have no patty-pans (the iron clusters are best), or she may wish especially to learn how to make Graham bread with yeast.]

In an august number of "Hearth and Home" for 1871, "Mrs. Hammond" gave a recipe, which is the best I have found. She always sifts Graham flour, to make it light, but mixes the bran again thoroughly with the flour. This is an improvement, certainly. For one quart of flour thus prepared, use half a cup of good yeast and a little more than half a pint of warm water. Stir it well together at night, and set in a warm place. In the morning add more flour, but not too much to stir with a spoon—for Graham bread should not be kneaded. Stir it well, pour it into the pan, and let it rise an hour. Some prefer to steam Graham loaves, as well as those of corn-meal, before baking. This prevents the formation of thick hard crust so dreaded by poor teeth. Many suppose that molasses is essential to good Graham bread, but some of the best cooks do not use it.

Dairy Products Versus Beef for Food.

Mr. X. A. Willard, in his address before the last annual meeting of the Vermont Dairymen's Association, urged in favor of the superior economy of cheese and milk for food, as compared with beef. A good cow in twelve years would produce 4,500 pounds of cheese, while three good steers, four years old, would not usually give more than 1,000 pounds of beef each. The aggregate ages would be of course twelve years—the product, 3,000 pounds of beef against 4,500 pounds of cheese. In addition, the beef for food would be diminished considerably by the weight of the bones, while the cheese, in nutritive value, he estimated at twice the value of beef.

As to milk, he quoted from O. C. Wiggin, milk inspector of Providence, who says he estimates that sirloin steak (loss of bone included) is as dear at 35 cents per pound as milk at 24 cents per quart; round steak at 20 cents as dear as milk at 14 cents; and eggs at 30 cents as dear as milk at 20 cents a quart. Analysis showed that good milk has 86 per cent. of water, and round steak 75 per cent., fatted beef 60 per cent., and eggs 68 per cent. "Relatively, then, milk at 10 cents, or even at 12 cents, is the cheapest animal food that can be used."

Mr. Wiggin also said, if the money expended for veal and pork were expended for milk, he did not doubt but that it would be an advantage both to the stomach and the pocket.

Practical Receipts.

CHOCOLATE CREAM CUSTARDS.—Set on to boil a quart of new milk. Mix with half a cup of cold milk, 2 oz. of grated sweet chocolate, pour some of the boiling milk to it, and then pour back into the pan of boiling milk, stirring all the time. When heated through, and just before coming to the boiling point, add the yolks of six eggs, which have been beaten with a cup of powdered white-sugar. When these are blended, add three whites beaten with a little extract of vanilla, reserving the three other whites for frosting. This is enough for ten cups.

PUMPKIN PIES.—The following new method for making pumpkin pies is recommended by one of our exchanges: Pare the pumpkin, then grate it, and add sugar and ginger to taste, and milk enough to make it of the proper consistency. Then line your pie-tins with crust, and put in your pumpkin and bake in the ordinary way.

APPLE CREAM.—Boil twelve apples in water till soft, take off the peel, and press the pulp through a hair sieve, upon half a pound of pounded sugar; whip two eggs, add them to the apples, and beat altogether till it becomes very stiff and looks quite white. Serve it heaped up on a dish.

BAKED CORN.—Take six ears of field corn, or twelve ears of sugar corn. Cut the grain partly off and scrape the rest; add one tablespoonful of butter, a tablespoonful of sugar and a teaspoonful of salt. Rub these well together and add a pint of new milk. Bake in a dish that you can set on the table without disturbing it.

BAKED TOMATOES.—This simple and delicious dish is made by cutting some ripe tomatoes in half, putting them in a buttered dish with some bread crumbs, butter, pepper and salt, and baking till slightly browned on the top.

HOME AND FARM.

Co-operative Farming.

There are a great many extensive landholders in California who have not the time or the capabilities to attend to the development of their land interests. Some are confined to the city by other pursuits, and some again lack the practical knowledge necessary to the profitable conduct of this business. The practice therefore of co-operative farming, or in other words the entering into a contract between the owner and the occupier of the land, apart from a fixed rate of rent, is becoming more common every year. And so excellent have the results of this system proved to the operator therein that it bids fair in numerous cases to supercede the ordinary cash payment rentals.

In the sheep farming districts of Southern California large tracks are frequently let to wool growers, who, for the use of the land, return a fixed percentage of the profits of the wool and the increase of the stock. The landlord finds that his part of the arrangement swells to a considerable extent at the end of a few years, and, in fact, puts him in possession of a sufficient quantity of live stock to commence the business on an independent basis, while the producer is not clogged by the necessity of paying a monthly or yearly stipulated sum. Then this rule allows of a more generous expenditure in fencing, improvements, etc., than if the other method were in practice. In Marin county this co-operative dairying is carried on extensively, many settlers holding their land on these terms of a share of the increase and produce.

ESSENTIALS IN THE IMPROVEMENT OF STOCK.—At a recent farmers' discussion in Scotland, the following points were taken up, as the leading essentials in securing the improvement of stock: "1, pure blood; 2, high strain of blood; 3, a sound constitution, free of hereditary disease; 4, substance, symmetry and quality; 5, a docile temper." One of the speakers gave the following good advice—since, as he said, it is most important for any farmer that he should proceed as rapidly, and at as little outlay as possible:

"As it is the general recognized maxim that the exterior form partake more of the conformation of the sire than of the dam, and as one sire will, to some extent, improve the whole of each year's stock, while a female gives but one superior beast, I would say procure superior males at whatever cost; and should they be too expensive for the size of the farm, let two or three farmers join in the purchase and keep one animal."

TOILING WIFE.—A farmer's wife on a large farm, with six or eight children of all ages, from nineteen to two years of age, has without help, a toilsome life of it—a life of hard labor. She is generally the first one up in the morning and to bed the last at night, toiling incessantly from early dawn till late in the evening. There is baby to attend, to get to sleep. The mother and wife, on a large farm, with a large family, most of whom a greater portion of the year go to school, has a laborious life of it—much more than the husband and father. No wonder so many of them are broken down in health at forty years of age—literally worn out with toil. What wonderment then that so many of the best of wives are peevish and cross. What they pass through is enough to sour the disposition of an angel.—*Exchange.*

CLOVER FOR SWINE.—Ohio agriculturists state that they have derived great advantage from pasturing their hogs on clover during the summer. A very intelligent farmer sums up the advantages in brief as follows: "An acre of ground in clover will pasture five hogs four months, and it will take the corn from half an acre to feed them the same time." The cultivation of the corn he counts equal to the rest of the other half acre. He further claims that hogs pastured on clover are in a far better condition than if fed on corn, as they are better framed, healthier, and eat better, and also states that the land is enriched by the clover pasturing.

Success in the cultivation of any crop, like the practice of any trade, requires a minute knowledge of all the details, which can only be gained by experience.

[Continued from page 133.]

within the past month have universally remarked that they "never saw such fine crops before." There is not a cultivated farm in the whole Territory that does not promise an abundant yield, except those fields visited by grasshoppers, crickets or cut-worms, and these cases are very rare.

The harvest has already begun in many localities and will be completed the first week in September. The great drawback is the scarcity of harvest hands. Nearly all the laboring men in the country being engaged in mining. Fortunately for the farmers the weather has been cool and the grain ripens slowly. Were it otherwise much would be lost in the field.

The past two years has demonstrated to the satisfaction of all that Montana can be relied upon as a grain-producing country. At one time it was a question of doubt whether it was a good grain country or not, but these doubts are dispelled and at no distant day this Territory will be noted for the superiority of its flour. The soil and climate is also well adapted to the culture of oats, barley and rye.

HAY.—There is an immense quantity of hay being put up in this valley at the present time. Haying has, however, been seriously delayed on account of the tardy arrival of mowers and rakes. There will be no scarcity of feed the coming winter. In this matter stockmen are doing right. They may not need a pound of the hay they are putting up, but in case of a hard winter it will be very useful and if not needed will keep over if carefully stacked.

THE UPPER VALLEY.—CROPS, MILLS AND MINES.—Farmers are busy haying, and the crop of grass is equally as large as at any preceding year. Mr. L. Strickland, on Race Track, has a fine patch of corn, planted as an experiment, which promises to mature during the season, notwithstanding it was planted late. The stalks are from five to six feet in height and, judging from its general appearance, we have no hesitancy in saying that corn will prove to be a profitable crop to farmers in the valley. A number of new farms have been taken up and improved during the year, and never in any country have we seen finer crops of wheat, oats, barley and potatoes, than are to be seen everywhere in the valley.

OREGON.

AGRICULTURAL WORKS.—Farmer, Aug. 24: We are pleased to see the progress making by Mr. Myers in his magnificent undertaking. The other day he received a large lot of machinery from the east, valued at \$10,000. He will soon have his immense building under roof and in readiness to receive the machinery. A race is being dug to supply the works with water power, and a large turbine wheel is ready at Portland to be placed in position as soon as the place is prepared for it. It is the expectation that the works will commence active operations early in November, and it is intended to have two hundred mowers and reapers finished to supply the next summer's trade. Mr. Myers intends, eventually, to make everything the farmer requires.

HOPS IN W. T.—A correspondent of the Olympia Transcript, writing from Puyallup valley, W. T., says this valley is the hop-yard of the Territory, there being much attention paid to the culture. Mr. Meeker thinks he will have 14,000 pounds this season, while his neighbors have fine crops also.

PEACHES.—This office has received "specimen copies" of the Early Crawford peaches, sent by Mrs. L. L. Buckingham, raised on the premises of her son Allen Buckingham, Esq., on the hill south of the bridge. These peaches are not only of delicious flavor but of very large size and beautiful appearance. One of them will measure seven inches in circumference. It is not often that freestone peaches do well in this vicinity, but Mrs. Buckingham has had good success on the lot referred to for several years in succession.

The Malva Tree.

We have two communications on the subject of the malva, making inquiry as to young trees, seeds, etc. To L. S. P., of Virginia City, Montana, we reply that it would hardly be advisable to send so long a distance, for young trees, when they grow so readily and rapidly from seeds.

Seeds planted in the spring, will grow into trees from five to seven feet high, strong and bushy, in a single season, in fact there are few plants that grow faster. The seeds can be obtained of our advertising seedsmen at fifty cents an ounce; larger quantities at lower rates.

G. Hunziker, Summit, Pike Co., Miss., says: "I cultivate here, the Mexican Chayote; have you got it in your section? I think it would flourish well in the gardens of Oakland. I can furnish seed next fall, if wanted."

Perhaps some of our subscribers would send him fresh Malva seed in exchange for his Chayote—which is a Mexican fruit.

TURNIPS.—We have received from David Landreth & Son, Philadelphia, a pamphlet entitled "What we know about turnips." In it they tell us what they know, and on a careful perusal we are inclined to think, what they don't know, can hardly be worth knowing.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Aug. 29.
FLOUR.—The interior and local demand is reported good, with a good inquiry for export. We quote prices as follows:
Superfine, \$4.12 1/2 @ 4.25; extra, in sacks, of 196 lbs. \$4.75 @ \$5.25; Oregon brands, \$4.75 @ \$5.25 in sacks of 196 lbs.

WHEAT.—The market has been active at unchanged rates since our last review. 314,000 centals were shipped during the week, or about two ship-loads per day. Ten ships were cleared this week and 250 tons went by Panama steamer; 26 vessels are under engagement still. Sales aggregate 50,000 sacks fair to choice, at \$1.45 @ \$1.50. The range for shipping grades is \$1.50, and choice milling, \$1.50 @ 1.55 per 100 pounds.

The latest Liverpool market quotations come through at 12s. per cental.

BAILEY.—Market steady. Demand good and receipts light. Sales embrace 10,000 sacks, at \$1.07 1/2 @ 1.15 for new. The range at close is, new bay 1.10 @ 1.15; old brewing is jobbing at \$1.90 @ \$2.00.

OATS.—Market is steady. New are quotable at \$1.60 @ 1.80; old, \$1.80 @ 1.90.

CORN.—Yellow is quotable at \$1.60 @ 1.65, and there is no white in market.

CORN MEAL.—Is quotable at \$2.00 @ \$2.75 per 100 lbs.

BUCKWHEAT.—Is quiet at \$1.75 @ \$2.00 per 100 lbs.

RYE.—Is quiet at \$1.90 @ 1.95 per 100 lbs.

STRAW.—Quotable at \$6 @ 7.25 per ton for cargo lots.

BRAN.—Has advanced to \$18 per ton from the mill.

MIDDLINGS.—For feed, are \$23.00 @ \$25.00 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been pretty free during the week. Sales of poor wheat at \$10.50; good clover \$11.00; ordinary wild oat \$10.50 @ \$12.00; good wild oat and wheat mixed \$15. Choice wheat is on demand at \$16 per ton. Quotable at close at \$8 @ \$16.00 per ton.

HONEY.—In the comb is selling at 10 @ 15; do. strained, 12 1/2 @ 15c. per lb.

POTATOES.—There has been a pretty fair demand this week, and very free supplies. Sales of Mission at \$1.25 @ 1.50; Peachblow \$1.55 @ 1.65; Halfmoon Bay \$1.60 @ 1.70 per 100 lbs.; Carolina, \$1.00 @ 1.25 per 100 lbs.

WOOL.—The market continues dull. Sales of 80,000 lbs. at 11 @ 18c. mostly Fall; Spring is neglected and nominal at 20 @ 35c. for burry and light clean. The range of prices is nominally 25 @ 30c. for clean, and 18 @ 25c. for burry, 33 for extra choice.

TALLOW.—Good quality of Cal. 8 @ 8 1/2 c.

SEEDS.—Flax 3c.; Canary, 4 1/2 @ 5c. Mustard, 4 @ 5c. per lb.

PROVISIONS.—California Bacon 12 1/2 @ 14c per lb.; Oregon, 13 1/2 @ 14c. Eastern do. 12 @ 13 for clear and 14 @ 15 for sugar-cured. Breakfast; Cal. Hams 13 @ 14; Eastern do, 16 @ 18c; California Smoked Beef, 13 1/2 @ 14c. per lb.

BEANS.—The following are jobbing rates: Pea \$3.75 @ 4.00; small White \$3.75 @ 4.00; Small Butter \$3.25; large \$3.75.

NUTS.—California Almonds, 8 @ 10c. for hard and 18 @ 25 for soft shell; Peanuts, 6c Pecan, 15c per lb.; Hickory, 12c; Brazil, 15c; Chili Walnuts, 15c; French Almonds, 25 @ 30c.; Princess Almonds, 35 @ 40c.; Cocoanuts, \$7.00 per 100.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 7 @ 8 1/2 c. do. 2d quality 6 1/2 @ 7 c.; do. 3d do. 3 @ 5c.

VEAL.—Quotable at 7 @ 10c.

LAMB.—8 @ 9c.

MUTTON.—Quiet at 6c. per lb.

PORK.—Undressed grain-fed is quotable at 5 1/2 @ 6 1/2 c. dressed, grain-fed, 8 @ 9c. per lb.

POULTRY.—Live Turkeys, 25c. per lb.; dressed, 27c. per lb.; Hens \$9.00 @ 9.50; Roosters, \$5.00 @ 7.50 per dozen; Spring Chickens, \$3.75 @ 4.00; Ducks, tame, \$7.00 @ \$8.00 per doz.; Geese, \$12 @ 15 per dozen.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 32 1/2 @ 37 1/2 c. New firkin is quotable at 20 @ 27 1/2 c., pickled, 32 1/2 @ 35c.; Eastern firkin 18 @ 27 1/2 c.

CHEESE.—New California, 11 @ 13 1/2 c.; Eastern at 13 @ 14 1/2 c. per lb.

EGGS.—California fresh, are 55 @ 57 1/2 c., Eastern, 27 1/2 @ 32 1/2 c. per doz.

LARD.—California 12 1/2 @ 13; Oregon, none in market. Eastern in cases 14 @ 14 1/2 c.; do in tins 11 1/2 @ 12c.; in kegs, 12 @ 13c. per lb.

HIDES.—Sales for the week embrace 1,480 Cal. dry at 17 @ 18c., and 1,390 salted at 8 1/2 @ 9.

FRUIT MARKET.

Tahiti Oranges, M	40	@	15	Pineapples, Choice	1 50	@	2 00
Limes, M	10	@	12	Pineapples, Common	50	@	1 00
Anjou Lemons, M	—	@	12	Figs	7	@	8
Sicily do., M	—	@	19	Crab Apples, lo.	2	@	3
Bananas, bunch	50	@	2 50	Strawberries, chest	4 00	@	6 00
Pineapples, doz	60	@	7 00	Blackberries	7	@	8
Apples, Fat g., box	25	@	1 50	Raspberries, B.	12 1/2	@	15
Apples, Cook g., b	50	@	75	Cantaloupes, doz	75	@	1 25
Pears, Bartlett, box	25	@	1 50	Watermelons, doz	60	@	1 25
Pears, Seckels, .	25	@	50	Grapes, Mission	2	@	3
Pears, Cooking	50	@	1 00	Chasselas	2 1/2	@	3
Peaches, Choice	25	@	1 00	Black Malvoisie	4	@	6
Peaches, Common	75	@	1 00	Rose of Peru	4	@	6
Apricots, M	5	@	7	Black Hawthorn	4	@	6
Nectarines, box	1 25	@	50	Black Prince	4	@	6
German Prunes	5	@	6	Muscad of Alfr	4	@	6
Hungarian Prunes	4	@	6	Flame Tokay	6	@	8
Quinces, box	1 00	@	25				

DRIED FRUIT.			
Apples, M	20	@	25
Pears, M	10	@	15
Peaches, M	9	@	10
Apricots, M	5	@	10
Plums, M	5	@	10

VEGETABLES.			
Cabbage, M	2 1/2	@	3
Garlic, M	2 1/2	@	3
Onions, M	2 1/2	@	3
Tomatoes, M	2 1/2	@	3
Green Peas	2	@	3
Sweet Peas	2	@	3
Green Corn	10	@	15
Marrowfat Squash	10	@	15
Perrowat	10	@	15
Cucumbers, box	30	@	75

GENERAL MERCHANDISE.
AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING.—Prices are as follows: Standard Wheat bags are jobbing at 19 @ 19 1/2 c.; Flour sacks 9 1/2 @ 9 3/4 c. for qrs. and 13 1/2 @ 14 c. for hls. Standard Gunnies are jobbing at 20 @ 21 c.; Wool 72 1/2 @ 80c. Barley sacks 17 1/2 @ 19, Hessians, 40-inch goods, 12 1/2 c. per yard.

BUILDING AND FENCING MATERIALS.—The demand for lumber in the interior is good and the export trade is light owing to scarcity of tonnage. Dealers pay for cargoes of Oregon as follows: Rough \$16 @ 17; do surfaced at \$27 @ 28; Spruce \$17 @ 18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32 1/2; refuse do. \$21 1/2. Wholesale rates for various descriptions are as follows: Laths at \$2.50 @ 2.75; Shingles \$2.50 @ 2.75. Sugar Pine \$35 @ 40; Cedar \$27 1/2 @ 37 1/2. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The new scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Pugot Sound Pine—	
Rough, M	25 00
Flooring and Stepping, M	37 50
Flooring, narrow	40 00
Flooring, second quality, M	30 00
Laths, M	3 50
Furring, M lineal foot	1 c
Redwood—	
Rough, M	25 00
Rough refuse, M	20 00
Rough Pickets, M	18 00
Rough Pickets, pointed, M	20 00
Fancy Pickets, M	30 00
Siding, M	7 50
Tongued and Grooved, surfaced, M	40 00
Do do refuse M	27 50
Half-inch surfaced, M	40 00
Rustic M	42 50
Battens M lineal foot	1 c
Shingles M	3 50
Sugar Pine is jobbing at \$50 @ 60 for clear and \$35 @ 45 for second quality.	

COFFEE.—Costa Rica 20 1/2 c.; Guatemala 18c. Java 23c; Manilla, 18 1/2 c.; Rio 19 1/2 @ 20; Ground Coffee in cases 30c.; Chicory, 12 1/2 c.

SPICES.—Allspice 14 @ 15c. Cloves 16 @ 17c. Cassia 35 @ 36c. Nutmegs \$1.00 @ \$1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00 @ 1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod in bundles at 4 1/2 c. @ 5 1/2 c., Salmon in bbls. \$5.00 @ 6.00, h/d do, \$3.50 @ 4.50; Case Salmon, \$2.75 for 2 1/2-lb. cans, \$2.50 for 2-lb. cans, and \$1.87 1/2 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Pugot Sound Smoked Herring, 60 @ 85c per box; Mackerel, No. 1 hf bbls, \$7.00 @ 9.00; extra, \$9.50 @ 10.00; in kits No. 1 \$1.75 @ 2.00; do No. 2, \$1.50 @ 1.62 1/2.

NAILS.—Quotable at \$6 25 @ 9.00 for assorted sizes.

PAPER.—California Straw Wrapping, sells at \$1.40, Eastern \$1.50 @ 1.75 per ream. Manilla 12 1/2 @ 13 1/2 for California made, and 15c. for Eastern made.

PAINTS.—Standard White Lead 10 @ 12 1/2 c.; Whitening, 2c.; Chalk 2 1/2 c.; Paris White 3c.; Ochre, 3 1/2 c.; Venetian Red, 3c.; Red lead, 11 1/2 c.; Litharge, 11c. per lb.

RICE.—Sales of China No. 1 at 6 1/2 @ 6 3/4 c. and No. 2 at 6 @ 6 1/2 c. per lb; Siam, quotable at 5 1/2 @ 6 1/2 c. in mats; Hawaiian, 10 @ 10 1/2 c. per lb.

SUGAR.—We quote Cal. Cube at 13 1/2 c.; Circle A Crushed, 13c. and Granulated 12 1/2 c.; Golden C, 11c; Extra Golden C, 11 1/2 c.; Hawaiian 8 @ 11c. as extremes per lb.

SYRUP.—Prices may be given as follows: 47 1/2 c. in bbls, 50c in hf bbls, and 55c in kegs.

SALT.—California Bay sells at \$6 @ \$14; Carmen Island, in bulk, \$14 @ 15; Fine Liverpool, \$23.50 per ton; coarse, \$18 @ 19.

SOAP.—The prices for local brands are 5 @ 10c. and Castile, 12 @ 12 1/2 c. per lb.

TEA.—We quote as follows for bulk descriptions: Amoy—Common to fair, 30 @ 45c.; superior to fine, 55 @ 65c.; extra fine, 75 @ 85c. Foochow—Common to fair, 35 @ 45c.; superior to fine, 50 @ 60c.; extra fine, 75c. Souchong and Congou—Common to fair, 35 @ 45c.; superior to fine, 50 @ 60c.; extra fine, 75c. Japans—Common to fair, 30 @ 35c.; superior to fine, 40 @ 45c.; extra fine to finest, 55 @ 75c. per lb.

IN TOWN.—Mr. L. P. McCarty, corresponding agent of the SCIENTIFIC PRESS and PACIFIC RURAL PRESS, two first-class illustrated Pacific Coast weeklies, arrived in town yesterday. He will remain here a few days canvassing for the journals he represents as correspondent and agent. Mr. McCarty has visited most of the prominent mining districts east of here, and the result of his observations has been published in the SCIENTIFIC PRESS in several interesting and instructive communications from Schell Creek, Pioche, Eureka and other towns that he has visited. He proposes furnishing for that journal an elaborate description of the mines of this district, and as his communications are very extensively copied by all the scientific and mining journals, we shall watch with considerable interest for his letter from this place, and we trust that our citizens will render him all the assistance in their power both by subscribing liberally for the journals he represents and by furnishing him information concerning our mines and other matters of general interest.—Reese River Reville, August 19th.

Imperishable!

If it be proper to apply this term to any perfume, then that perfume is MURRAY & LANMAN'S FLORIDA WATER, for in it we have the nearest approach to an everlasting fragrance. Of any perfume yet produced, the germents sprinkled with it exhale for many days a delicate and sweet aroma.

San Francisco Retail Market Rates.

THURSDAY NOON, August 29, 1872.

MISCELLANEOUS.			
Butter, Cal. fr. M	40	@	45
do Oregon, M	—	@	45
Honey, M	18	@	28
Cheese, M	20	@	50
Eggs, per doz.	45	@	50
Lard, M	18	@	50
Sugar, cr. 7 1/2 lb. M	10	@	12
Brown, do, M	12	@	12
Sugar, Map. M	30	@	30
Plums, dried, M	15	@	30
Peaches, dried, M	20	@	30
Wool Sacks, new	7 1/2	@	75
Second-hand do	8 1/2	@	85
Wheat-sks, 22 1/2	15 1/2	@	15 1/2

PRODUCE, ETC.			
Flour, ex. M	6 1/2	@	6 25
Superfine, do, M	6 1/2	@	6 25
Corn Meal, 100 lb. M	3 50	@	3 50
Wheat, 100 lb. M	2 40	@	2 40
Oats, 100 lb. M	1 60	@	1 60

FRUITS, VEGETABLES, ETC.			
Apples, M	10	@	15
Pine Apples, M	10	@	15
Bananas, M	50	@	100
Cantaloupes	10	@	10
Watermelons	15	@	20
Cal. Walnuts	10	@	20
Cranberries, M	10	@	15
Strawberries, M	8	@	15
Raspberries	10	@	25
Cranberries, O. 1 lb	25	@	25
Gooseberries	—	@	—
Cherries, M	—	@	—
Oranges, doz.	50	@	75
Lemons, doz.	1 00	@	1 50
Limes, per 100	2 00	@	2 00
Figs, fresh, M	10	@	15
Asparagus, wh.	10	@	15
Artichokes, doz.	50	@	75
Beets, M	25	@	25
Potatoes, New M	2	@	2
Potatoes, sweet	2	@	2
Broccoli, doz.	1 00	@	2 00
Califlower, 1	1 00	@	1 00
Cabbage, doz.	1 00	@	1 00
Carrots, doz.	15	@	25

POULTRY, GAME, FISH, MEATS, ETC.			
Chickens, M	30	@	35
Turkeys, M	30	@	35
Ducks, wild, M	1 00	@	1 00
Tam. do, M	1 00	@	1 00
Teal, doz.	1 25	@	1 25
Geese, wild, pair	20	@	20
Tame, pair	30	@	30
Hens, each	75	@	75
Snipe, doz.	—	@	—
English, doz.	—	@	—
Quails, doz.	—	@	—
Pigeons, dom. doz	60	@	60
Wild, do	2 00	@	2 00
Hares, each	40	@	50
Rabbits, tame	25	@	75
Wild, do	1 50	@	2 50
Beef, tend, lb	18	@	22
Corned, M	10	@	12
Smoked, M	15	@	18
Pork, rh. etc.	10	@	15
Chops, M	15	@	15
Veal, M	15	@	15
Cutlet, M	20	@	20
Mutton chops	12	@	15
Leg, M	15	@	18
Lamb, M	12	@	15
Tongues, beef	15	@	15
Tongues, pig	15	@	15
Bacon, Cal. M	18	@	20
Oregon, do	16	@	18
Hams, Cal. M	16	@	18
Hams, Cross	18	@	25

POULTRY, GAME, FISH, MEATS, ETC.					
Chickens, spice	30	@ 100	Choice D field	—	@ 25
ducks, wild, per doz.	75	@ 35	Whittaker's	—	@ 25
ducks, wild, per doz.	75	@ 35	Johnson's	—	@ 25
Geese, doz.	100	@ 40	Flounder, per doz.	—	@ 25
Geese, doz.	100	@ 40	Salmon, per doz.	—	@ 25
ese, wild, par.	75	@ 35	Smoked, new.	8	@ 10
ese, wild, par.	75	@ 35	Pickled, per doz.	8	@ 10
ese, wild, par.	75	@ 35	Rock Cod, per doz.	8	@ 10
ese, wild, par.	75	@ 35	Perch, a water, doz.	—	@ 12
ese, wild, par.	75	@ 35	Fresh water, doz.	—	@ 15
ese, wild, par.	75	@ 35	Lake Big Trout	—	@ 25
ese, wild, par.	75	@ 35	Small do.	12	@ 15
ese, wild, par.	75	@ 35	Silver Smelts.	15	@ 25
ese, wild, par.	75	@ 35	Soles, per doz.	25	@ 25
ese, wild, par.	75	@ 35	Herring, fresh.	—	@ 100
ese, wild, par.	75	@ 35	Smoked, per doz.	25	@ 25
ese, wild, par.	75	@ 35	Tomcod, per doz.	25	@ 25
ese, wild, par.	75	@ 35	Perampin, per doz.	25	@ 25
ese, wild, par.	75	@ 35	Mackerel, p.k.ea.	—	@ 25
ese, wild, par.	75	@ 35	Sea Bass, per doz.	—	@ 25
ese, wild, par.	75	@ 35	Halibut, per doz.	—	@ 50
ese, wild, par.	75	@ 35	Sturgeon, per doz.	4	@ 5
ese, wild, par.	75	@ 35	Oysters, per 100.	1	@ 25
ese, wild, par.	75	@ 35	Crabs, per doz.	30	@ 25
ese, wild, par.	75	@ 35	Furbot, per doz.	30	@ 25
ese, wild, par.	75	@ 35	Crabs, per doz.	30	@ 25
ese, wild, par.	75	@ 35	Soft Shell.	1	@ 30
ese, wild, par.	75	@ 35	Shrimps.	1	@ 30
ese, wild, par.	75	@ 35	Prawns.	40	@ 50
ese, wild, par.	75	@ 35	Sardines.	8	@ 25

* Per lb. † Per dozen. ‡ Per Gallon.

Sold Again !

COLUSA, August 21, 1872.
Messrs. WIESTER & Co., San Francisco: I was at your place in June making inquiries respecting a Wire and Picket Fence. You offered me the right to build that fence on my land for twenty dollars, or the right for the whole county for two hundred dollars. I failed to tell you that a part of my land I own jointly with S. H. Baker. If you will sell Mr. Baker and myself the right to make that fence on our land, we will send you a check on the Bank of California for twenty dollars.
Very respectfully yours, M. A. BRITTON.
This fence is the cheapest and best made in California. For description and illustrated circular send to WIESTER & Co., 17 New Montgomery street, S. F.

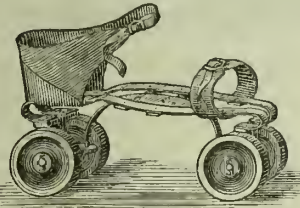
THROUGH the length and breadth of the land the celebrated SILVER-TIPPED Boots and Shoes are sold by the million, for parents know they last twice as long as without Tips. Try them. For sale by all dealers. *

For Coughs and Throat Disorders, use "Brown's BRONCHIAL TROCHES," having proved their efficiency by a test of many years.

Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plates. 4 Catalogues, 20c. F. K. PHENIX, Bloomington Nursery, Ill. 2v4-17t

The C-Spring Roller Skate.

PATENTED 1871.



Rights and Skates for Sale.

This superior Skate is now beginning to attract the attention of Rink Owners, it being the only Cramping Skate now before the public (except the Plympton Skate) that can run without infringing a former patent.
THIS SKATE IS POSITIVELY NO INFRINGEMENT Of anybody's patent. It is made in the most substantial and workmanlike manner, and possesses the following points of merit: Beauty, Elasticity, Ease of Movement, Strength, Lightness, and does not injure the skating floor as much as the ordinary skate.
Every pair Warranted to be just what it is represented. Parties intending to
START A RINK,
Should examine and test this Skate. Sample pairs sent C. O. D. on application.
In ordering samples, state the number of hoot or shoe worn, and whether for lady or gentleman.
For City, County or Rink Rights, call on or address
WIESTER & CO.,
No. 17 New Montgomery street (under Grand Hotel), 9v4wbpm SAN FRANCISCO.

ASK FOR WRIGHT'S Condition powders FOR HORSES & CATTLE

HEIKES NURSERIES.

DAYTON, O., July 29th, 1872.
TO NURSEYMEN AND DEALERS:
Gentlemen—It gives me pleasure to be able to inform you that the prosperity of this establishment has been such as to warrant me in offering my goods, hereafter, at wholesale only. Confident that this will place us in relations of greater mutual advantage than heretofore, I remain, soliciting your continued patronage and favor,
Very truly,
W. F. HEIKES.
P. S. Catalogues Free. No. 1, Descriptive; No. 2, Nurserymen's; No. 3, Dealers'.

MACEDON NURSERIES.

I will send, post paid, warranted to arrive in good order:
1 year Plum and Pear Trees, Roses and Shrubs, \$25 per C.
1 year Apple, Peach and Orange Quince, \$15 per C.
Raspberry and Blackberry Plants, 6 varieties, \$2 per C.
Strawberry Plants, 10 varieties, \$1 per C; \$3 to \$4 per M, by express; Giant Asparagus and Honey Locust Hedge, \$1 per C, \$3 to \$4 per M, by express. Larger quantities and older trees proportionately low.
Send for Catalogue. J. B. JONES, 9v4-3m Macedon, Wayne Co., N. Y.

CAMELLIA JAPONICA.

R. B. PARSONS & CO., Flushing, near New York, offer a large stock of Healthy, well grown Plants, which have been proved to do well in California. Also of Azaleas, Rare Evergreens and the Best Trees and Shrubs.
Long experience in sending to the Pacific Coast enables them to pack Plants in the best manner.
For Catalogues address as above. au31-2t

BULBS, HYACINTH, named, 25c. each; \$3 per doz.; unnamed, 15c. each; \$1.50 per doz.; 7 for \$1. TULIPS, named, 10c. each; \$1 per doz.; unnamed, 5c. each; 50c. per doz. GLADIOLUS, \$1 per doz. Post paid.
SARAH H. MARTIN, Marblehead, Mass. au31-1t

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.
WIESTER & CO., 3v4-3m 17 New Montgomery street, S. F.

THE GIANT POWDER COMPANY

Are now manufacturing besides the famous regular
GIANT POWDER, A NO. 2 GIANT POWDER,
Somewhat slower in its Explosion, which we recommend for
BANK BLASTING, COAL MINES,
AND FOR ALL SUCH WORK WHERE THE ROCK IS NOT VERY HARD
It is fully as safe as the other and evolves neither smoke nor noxious fumes when exploded.
Price. 50 Cents per Pound.

The sales of both grades increase very fast, which is the best proof of their superiority over other explosives.
BANDMANN, NIELSEN & CO.,
General Agents, No. 210 Front Street.
20v22-3m16p

LIST OF PREMIUMS

ON WINE, BRANDY, GRAPES, ETC.,

As agreed upon by the Board of Directors of the

California Vine-Growers and Wine and Brandy Association.

Brandy.	
Best grape brandy, vintage 1871.....	\$25
Best white wine, vintage 1870.....	25
Best white wine, vintage 1869.....	25
Best white wine, vintage 1868.....	25
Best white wine, vintage 1867 or older.....	Diploma.
Best red wine, vintage 1871.....	25
Best red wine, vintage 1869.....	25
Best red wine, vintage 1868.....	25
Best red wine, vintage 1867 or older.....	Diploma.
Dry Wines.	
Best white wine, vintage 1871.....	\$25
Best white wine, vintage 1870.....	25
Best white wine, vintage 1869.....	25
Best white wine, vintage 1868.....	25
Best white wine, vintage 1867 or older.....	Diploma.
Best red wine, vintage 1871.....	25
Best red wine, vintage 1869.....	25
Best red wine, vintage 1868.....	25
Best red wine, vintage 1867 or older.....	Diploma.
Sweet Wines.	
Best white wine, vintage 1871.....	\$25
Best white wine, vintage 1870.....	25
Best white wine, vintage 1869.....	25
Best white wine, vintage 1868.....	25
Best white wine, vintage 1867 or older.....	Diploma.
Best red wine, vintage 1871.....	25
Best red wine, vintage 1869.....	25
Best red wine, vintage 1868.....	25
Best red wine, vintage 1867 or older.....	Diploma.
Special Wines.	
Best California port wine, vintage 1871.....	\$25
Best California port wine, vintage 1870.....	25
Best Cal. port wine, vintage 1869 or older.....	Diploma.
Best California sherry wine, vintage 1871.....	25
Best California sherry wine, vintage 1870.....	25
Best Cal. sherry wine, vintage 1869, or older.....	Diploma.
Best California sparkling wine, vintage 1871.....	25
Best California sparkling wine, vintage 1870.....	25
Best California sparkling wine, vintage 1869 or older.....	Diploma.
Best California Angelica wine, vintage 1871.....	25
Best California Angelica wine, vintage 1870.....	25
Best California Angelica wine, vintage 1869 or older.....	Diploma.
Miscellaneous.	
Best samples of grape syrup, not less than one gallon.....	\$20
Best sample of grape sugar, not less than five pounds.....	20
Best twenty-five pounds of raisins.....	50
Best still.....	50
Best grape crusher and separator.....	50
Best and cheapest tank, cask or butt for wine or brandy for storage.....	50
Grapes.	
Best twelve varieties of the table grapes, not less than three bunches each.....	\$25
Best six varieties of table grapes, not less than three bunches each.....	20
Best three varieties of table grapes, not less than three bunches each.....	15
Best two varieties of table grapes, not less than three bunches each.....	10
Best one variety of table grapes, not less than three bunches each.....	20
Best twelve varieties of wine grapes, not less than three bunches each.....	25
Best six varieties of wine grapes, not less than three bunches each.....	20
Best three varieties of wine grapes, not less than three bunches each.....	15
Best two varieties of wine grapes, not less than three bunches each.....	10
Best one variety of wine grapes, not less than three bunches.....	20
Best variety of raisin grapes.....	10
Best and greatest variety of grapes, not less than three bunches each.....	60
Second best and greatest variety of grapes, not less than three bunches each.....	40

MOTHERS, WHY DO YOU NEGLECT TO BUY	
SILVER-TIPPED SHOES	
For your dear little children? They never wear through at the toe.	
English and American Hardware!	
A Large, Fresh Stock just received. The old friends of the house especially, as well as our later patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promptly.	
TREADWELL & CO., San Francisco.	
3v2v5-cowbp	
M. WALTHALL and S. T. NYE	
Give Exclusive Attention to	
Land Matters in the Local and General Land Office,	
Mining Applications, Procuring Patents, and Contests before the Office, etc., etc.	
Buy and Sell Agricultural College Serip and Land Warrants.	
Office in Odd Fellows' Building, near the Land Office, Stockton, Cal. Refer to Hon. S. A. Booker, Judge of the Fifth District Court, Stockton. 9v5-3m	
WE WILL CHANGE THE ADDRESS of any subscriber who requests it, if the present address is stated.	

Pacific Saw Manufacturing Co.,

17 and 19 Fremont Street, San Francisco.
REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted.
15v3-3m

TOYS.

The Dewey Toy Engine—Patent Secured.

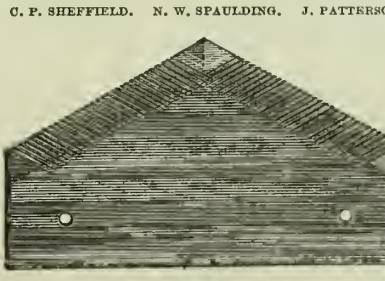
NOVELTY COMBINED WITH AMUSEMENT AND INSTRUCTION. Most Ingenious Toy of the Nineteenth Century. A Genuine Steam Working Engine, a Model of its Style, Complete and Perfect in all its Parts. Adapted to the wants of the Student, School-Room, and Parlor. This is not a humbug, but a genuine Steam Engine, with Boiler, Cylinder, Piston, Fly-wheel, Safety and Throttle Valve, and a Grooved Pulley for imparting motion to other Toys. This Engine is designed for something more than temporary amusement, as it will afford the means of amusement for the old as well as the young, and prove to be a source of pleasure and profit to all. EXPLOSION IMPOSSIBLE. Send for descriptive circular. WIESTER & CO., 17 New Montgomery street, San Francisco.

The Celebrated Whitewater Wagons
Thimble Skein AND IRON AXLE
Sole Agents TREADWELL & Co.

PRICES:
Thimble Skein, 3 inch, \$100; 3 1/4 inch, \$105; 3 1/2 inch, \$110; 3 3/4 inch, \$115; 4 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yoke and stay chains.
Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.
We invite the attention of buyers to the superior workmanship and finish of the justly celebrated Wagons. They are known throughout the West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective, it will be replaced without charge." We claim by actual test a SAVING OF FIFTEEN PER CENT. in DRAFT over any other Wagon offered for sale. This case of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves.
Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the best Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturers of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.
We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Rack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the SPRING SEAT 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running-gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY SEASONED HICKORY.
If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

TREADWELL & CO.,
San Francisco,
General Agents for the Pacific States.
2v4tf
C. P. SHEFFIELD. N. W. SPAULDING. J. PATTERSON.
11v3-tf

Pacific Saw Manufacturing Co.,



17 and 19 Fremont Street, San Francisco.
REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted.
15v3-3m

TOYS.

The Dewey Toy Engine—Patent Secured.

NOVELTY COMBINED WITH AMUSEMENT AND INSTRUCTION. Most Ingenious Toy of the Nineteenth Century. A Genuine Steam Working Engine, a Model of its Style, Complete and Perfect in all its Parts. Adapted to the wants of the Student, School-Room, and Parlor. This is not a humbug, but a genuine Steam Engine, with Boiler, Cylinder, Piston, Fly-wheel, Safety and Throttle Valve, and a Grooved Pulley for imparting motion to other Toys. This Engine is designed for something more than temporary amusement, as it will afford the means of amusement for the old as well as the young, and prove to be a source of pleasure and profit to all. EXPLOSION IMPOSSIBLE. Send for descriptive circular. WIESTER & CO., 17 New Montgomery street, San Francisco.

STATE FAIR FOR 1872,

AT SACRAMENTO,
COMMENCING

On Thursday - - - the 19th,

AND CLOSING

On Friday, - - the 27th of September.

\$40,000

To be Distributed in Cash Premiums !

Exhibition to be divided into seven departments, and the SOCIETY'S GOLD MEDAL awarded to the most meritorious exhibition in each department.

THE LARGEST STOCK SHOW
Ever had on the Pacific Coast.

THE MOST ATTRACTIVE SPEED PROGRAMME
Ever offered in the Union.

The First Annual Exhibition of the California Wine Growers' Association to be held at the same time and place.

A GRAND PLOWING MATCH
To come off on the grounds.

A GRAND REGATTA ON THE RIVER,
In which eight or ten boats will participate.

A public sale of Thoroughbred Stock at the Park each day of the Fair.

The Central Pacific Company's railroads and steamers will carry all articles to and from the Fair FREE OF CHARGE.

Wells, Fargo & Co.'s Express will deliver all packages FREE not weighing over 20 pounds.

Applications for Stalls at the Park and space at the Pavilion should be made to ROBERT BECK, Recording Secretary, at once.

Memberships, \$5. Single Admission, 50 cents.

C. F. REED, President.

ROBERT BECK, Secretary. 6v4 td

TANK MAKING.

The undersigned having adopted TANK MAKING as their specialty, are now prepared to manufacture Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood

FOR THE SPECIAL PURPOSE OF MAKING

LARGE WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.
1,000 to 2,000 gallons, bound with 5 hoops 1 1/4 x 1/2 and 1 hoop 1 3/4 x 3-16.
2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2 hoop 2 x 3-16.
4,500 to 7,500 gallons, bound with 5 hoops 2 1/4 x 1/2 and 2 hoop 2 1/2 x 3-16.
7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 1/2 and 2 hoops 2 1/2 x 3-16.
15,000 to 20,000 gallons, bound with 8 hoops 3x1/2 and 3 hoops 3x3-16.

PRICE, - - - From 1 1/4 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.
ALL WINE TANKS made of SPLIT lumber 2 1/2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.
REDWOOD CASKS (split lumber,) with oak middle piece and gate, from 7 to 9 c. per gallon.
OAK CASKS (full stock,) from 12 1/2 to 15 c. per gallon.
Send for Price List.
For further particulars address.

M. FULDA & SONS,
Cor. Commercial and Drum Streets, S. F. 5v4-6t

GUAVA AND MANGO SEEDS.

Just received, a fresh supply of SWEET, STRAWBERRY, and SOUR GUAVA; MANGO; MANGOSTEEN; fine PALMS. Also a fine collection of Seeds of RARE SANDWICH ISLAND PLANTS; AUSTRALIAN BLUE GUM TREE SEED, and five other sorts; a general assortment of SEEDS, RARE PLANTS, BULBS, etc. At the Old Stand. Catalogues, per mail, free. E. E. MOORE, 425 Washington street, San Francisco, Ca 5v4-4t

7v4-4m F. DEWING & CO.,
542 California street, San Francisco.

To Inventors in the Pacific States.

The best, speediest, and surest method for you to obtain patents, file caveats, or transact any other important business with the Patent Office at Washington, or with foreign countries, is through the agency of DEWEY & CO., PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS, SAN FRANCISCO, an able, responsible, and long-established firm, and the principal agents on this side of the continent. They refer to the thousands of inventors who have patronized them, and to all prominent business men of the Pacific Coast, who are more or less familiar with their reputation as straightforward journalists and patent solicitors and counsellors. We not only more readily apprehend the points and secure much more fully and quickly the patents for our home inventors, but with the influence of our carefully read and extensively circulated journals, we are enabled to illustrate the intrinsic merits of their patents, and secure a due reward to the inventor, besides serving the public who are more ready to give a fair trial, and adopt a good thing, upon the recommendation of honest and intelligent publishers.

To Obtain a Patent,

A well-constructed model is generally first needed, if the invention can well be thus illustrated. It must not exceed 12 inches in length or height. When practicable, a smaller model is even more desirable. Paint or engrave the name of the article, and the name of the inventor, and his address upon it.

Send the model (by express or other reliable conveyance), plainly addressed, to "DEWEY & CO., MINING AND SCIENTIFIC PRESS OFFICE, SAN FRANCISCO." At the same time, send a full description, embodying all the ideas and claims of the inventor respecting the improvement describing the various parts and their operations.

Also send \$15 currency, amount of first fee of the Government. The case will be placed on our regular file, the drawings executed, and the documents made up, and soon sent to the inventor for signing.

As soon as signed and returned to us with the fees then due us, it will be sent straightway to the Patent Office at Washington.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separated ingredients, sufficient to make the experiment (unless they are of a common and well-known character), and also of the manufactured article itself, must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case, the applicant has only to send us an exact description, and what is desirable to claim.

For designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances for design patents two photographs, with the negative, answer well instead of drawings.

We do not require the personal attendance of the inventor, unless the invention is one of great complication. Usually the business can be well done by correspondence.

For filing a caveat, which affords the inventor protection for one year, we only require a rough sketch, and a clear description of the invention.

It will cost inventors less to have their business thoroughly and speedily done through our agency than to patronize less able and responsible agents.

For further information, send a stamp for our illustrated circular, containing a digest of PATENT LAWS, 112 illustrated mechanical movements, and HINTS and INSTRUCTIONS regarding the RIGHTS and PRIVILEGES of inventors and patentees, which will be furnished post paid. Also a copy of NEW PATENT LAW of 1870.

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Any person who will take the trouble to examine this Lamp carefully, will see that it WILL NOT EXPLODE.

The flame is as white and brilliant as coal gas, and produces neither Smoke nor Smell. No CHIMNEY is REQUIRED.

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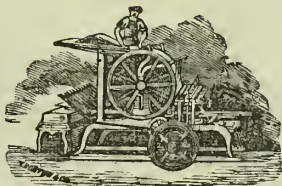
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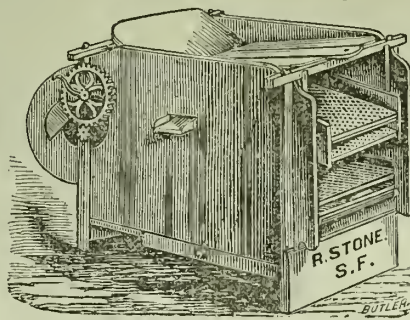
"Live and Let Live,"

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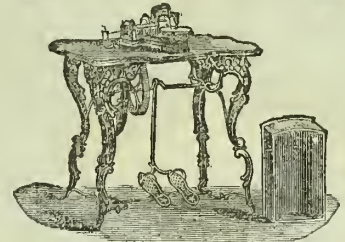
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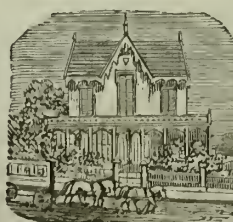
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Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses. Illustrated Circular for style of frames sent to any address free.

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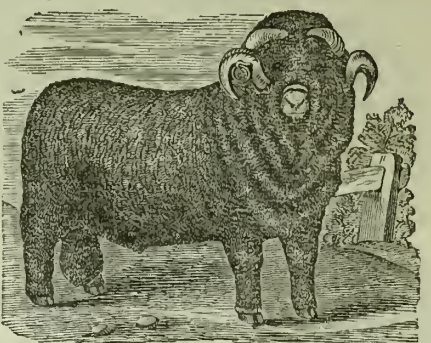


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All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

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The state of this new field of agriculture, so different from all others; the new and improved methods of farming necessary here; and the absence of any published record of farming and rural experience on this coast, form a combination of circumstances which render a really good journal of greater importance to farmers here than are similar issues to farmers in any other part of the world.

The PACIFIC RURAL PRESS has been heartily received and well patronized, and its liberal success enables us to improve and enrich its columns from month to month.

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Bound to Take those Two Papers, Etc.

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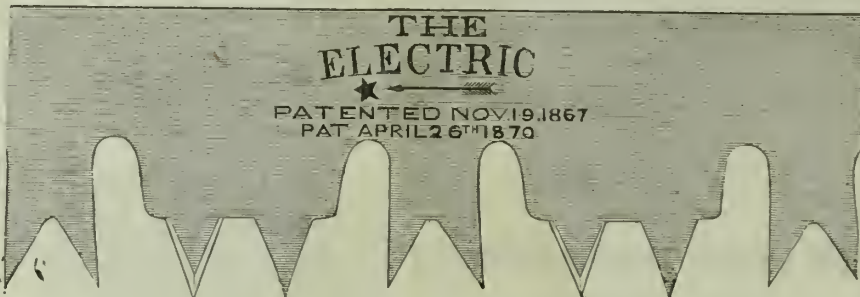
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Is the universally approved Saw of the times—one that, on a practical test, gives entire satisfaction. It is easy running, quick, keen cutting, strong and simple in construction, easily filed, retains its set long, and will stand more hard pushing work without the teeth being thrown out of line; you can run it longer, and do more work with less filing, less labor, less vexation, and less time, than any other Saw in the world. With it you can cut a cord of wood in fifteen minutes, and without hard blowing. It has no frail, fancy-shaped, narrow teeth that, when you crowd your work, are thrown out of set and line.

The ELECTRIC will be found reliable under all circumstances. It is all that is desired by practical workmen, and cannot be surpassed. Since its introduction, the superior qualities that have been developed by its practical use have caused Lumbermen and others to add another name to "ELECTRIC," and now insist on calling it the "ELECTRIC OLD RELIABLE." Those who have bought and used them, could they not procure another, would not sell them for ten times the amount they paid for them. It is folly and a waste of time for Lumbermen to take in the forest any other Cross-Cut Saw than the "ELECTRIC."

This Saw is A-1, in point of manufacture, cutting, speed, durability, strength and simplicity of construction, being easily kept in order and retaining its set longer than any other Patent Saw made.

The above design shows our "PATENT ELECTRIC CROSS-CUT SAW." This peculiar arrangement of chisel and scoring teeth with clearing slots, for a Cross-Cut Saw, is the only one that gives ease in running and speed in cutting, and at the same time combines such stability and strength to each section that, with the severest work, they cannot be thrown out of line nor the set soon lost. These Saws have been put to the severest test, and have in every case met with the highest approval.

The List Price is \$1.00 per foot, from which we are prepared to make a liberal discount to dealers, making it really the most profitable Saw for them to sell now on the market. We warrant them to be all we represent, and we will take back or exchange any Saw having a flaw or defect of any kind.

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PATENT CRAB WRENCH.

This Wrench will grip nuts of all sizes, without loss of time in adjusting. It will not slip, and will work where any other Wrench will apply.



Another important feature: The Wrench being composed of three pieces (A, B, and C), each jaw is stamped A and B, the handle C, and each of these pieces is also numbered according to size of Wrench, any one of those pieces becoming useless from wear and tear, a new piece can be substituted for a trifling expense, making the Wrench as good as new.

It can be used with one hand, as it will grip the nut as soon as jaw A comes in contact with the nut, and pressure brought to bear on it by turning the handle and closing the jaws. We have four sizes—Nos. 2, 3, 4, 6. No. 2 will grip from a 1/4 inch nut down; No. 3 from a 1/2 inch; No. 4 from 2 inch; and No. 6 from 3 inch down. It is recommended for cheapness, strength, durability and its self-adjusting quality, which render it superior for quick work. Although a comparatively recent invention, it is now being used extensively in Pittsburg, Cleveland and other Western cities, where the engineers and machinists are enthusiastic in its praise. Give it a trial, and it will speak for itself. Send for a price list. aug 21 2t16p

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Yours, etc.,

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Trees, Plants, Roots, Etc.,

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100 Barrels Guano for Sale,

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Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

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22v2-9m

N. GILMORE,

Importer and Breeder of

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GOATS

—OF—

PURE BLOOD

—AND—

ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all part of the State. For particulars address

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El Dorado, El Dorado county, California.

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SOMETHING NEW.

We have for sale the Right to the Pacific Coast for a new and useful invention that is needed in every family. It is easily manufactured and requires but a small amount of capital to commence with. A number of orders have already been taken, which will be turned over to any party who may purchase the patent.

Samples can be seen at our office, or descriptive circulars will be sent to any address on application.

WIESTER & CO.,

17 New Montgomery Street, San Francisco.



PURCHASERS please say advertised in Pacific Rural Press.



Volume IV.]

SAN FRANCISCO, SATURDAY, SEPTEMBER, 7, 1872.

[Number 10.]

Ransome's Patent Stone.

The creation of a new branch of national industry in the production of a durable stone applicable to engineering, architectural and manufacturing uses; the toilsome and laborious thought, and the cost and perseverance which have been involved in perfecting the production; as also the important economic results likely to accrue from this invention, have been considered sufficiently important topics to furnish prolific themes for writers in the most eminent of the journals devoted to engineering, architectural and general science, as also in professional and other papers.

Nature of the Material.

This remarkable material, which is essentially different from any other which has yet been submitted to the public, and which can be produced in blocks or forms of any dimensions, is suitable not only for the construction of solid masonry, but also for the manufacture of the most elaborate and delicate architectural embellishments.

It is a hard, durable, and beautiful sandstone, which so closely resembles the best descriptions of our natural stones that it is not easy to distinguish between them.

It can be produced of various colors. The stone is composed of clean silicious sand, or other suitable substance, firmly aggregated into a solid and hard mass by the means of silicate of lime, or of other insoluble silicates.

Process of Manufacture.

The process of manufacture is simple, although based upon the most scientific principles. The sand silica, or other mineral substance is intimately mixed with its proper proportion of a solution of silicate of soda. This is effected in an ordinary pug mill, and the mixture which is thus rendered of a plastic consistence, is either pressed or rammed into blocks or moulds, or it can be rolled into slabs or forms, as may be desired, and is afterward saturated with a solution of calcium, when a double decomposition of the two solutions employed (viz: of the silicate of soda and the calcium) immediately takes place.

The silica combines with the calcium, and at once forms an insoluble silicate of lime, firmly enveloping together all the particles of sand, or other minerals of which the stone is composed, whilst at the same time the chlorine combines with the soda, and forms chloride of sodium or common salt, which is removed by subsequent washing.

Cost of Production.

The cost of production for mouldings or other ornamental work is much less than that at which natural stone can be procured. The principal item of expense in such work is the preparation of the moulds; but when a repetition of the same articles to any extent is required, or when they are made out of our stock moulds, the proportionate cost of the mold chargeable upon such article would be inappreciable.

The Ransome Stone, while exhibiting the characteristics and appearances of the best natural free stone, is more durable, and can be

produced of any desired tone of color. It can be moulded into any form, or made in masses of any dimensions.

It requires no artificial drying or burning.

tion, the Ransome stone will fitly take its place. **Building Purposes.**

It is admirably adapted to the construction of steps, tiles and landings; cornices, balustrades,

der edging; balustrades, terrace steps; sun-dials; flower boxes for lawn or window, tree pots, gateways, copings, etc.

The accompanying engraving is a truthful illustration of one of the many beautiful designs of fountains manufactured by the Pacific Stone Company, holding the Ransome patent for the Pacific Coast. Office, No. 10, Bush street, San Francisco.

Wheat Growing.

The wheat crop of California this year, very nearly astonished the world, not only for its immensity but the absolute perfectness of its growth and maturity. No where else in the Union is there such a perfect immunity from rain during the season of maturity and harvesting of the grain as here, and nowhere else is there that constant yield of unequalled product, except in the matter of quantity per acre.

On all new lands we can match the world in quantity, but a few years of constant culture soon reduces the maximum yield from 50 and 60 bushels per acre, to 15 and 20 bushels, and in some instances to less than this. There is no denying the fact that the "every-year-to-wheat" system is rapidly impoverishing our best wheat lands. Farmers everywhere are seeing this, and more than ever before are they looking round for some remedy or preventive.

Remedies Proposed.

Some favor letting the land rest without fallowing, with no return of fertilizers but such as the land receives from animals at pasturage. Others advocate the naked fallow, and yet others the plowing in of green crops, and following a certain fixed rotation extending through three or more years.

It has already become a matter of immense importance, and our most scientific men and farmers are exercising their best thoughts on this subject, with especial reference to the substitution of some system that shall arrest the now too rapid deterioration of our wheat lands. Will the grain growers of California send in their views on this important subject, for the columns of the RURAL PRESS.

Ramie Fibre of 1872.

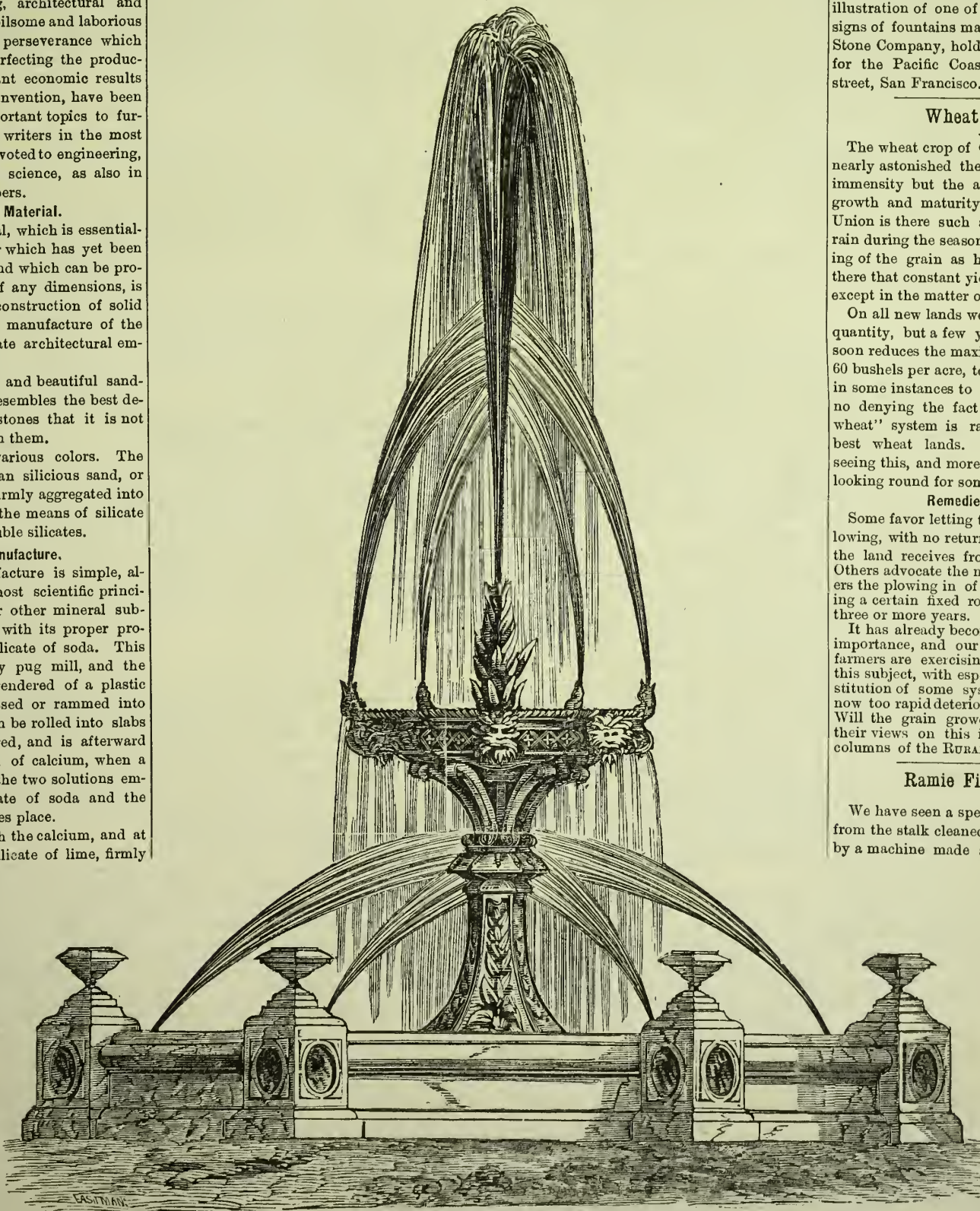
We have seen a specimen of ramie fibre fresh from the stalk cleaned from the woody portion by a machine made at the Miners' Foundry.

Mr. Joseph Graham, of Haywards, Alameda Co., has over four acres of excellent plants two years old last March, that have attained a height of six feet this year, and yet he is of opinion that a warmer climate than his locality would grow it still better.

At present we seem to lack experience in regard to the precise time at which it should be gathered for the best yield and quality of fibre, but when it assumes a chocolate color

it is supposed to be about right. Within a few days a much larger quantity will be brought to the Miners' Foundry for further experiment. The fibre is now valued at from \$200 to \$300 per ton in the English market.

CONTRA COSTA FAIR.—We have received a complimentary ticket for the Fair of the Contra Costa County Agricultural Society. We hope to be able to attend.



DESIGN OF FOUNTAIN—ARTIFICIAL STONE.

The cost for moulded and ornamental work is much less than that of natural stone. The stones can be made hollow as readily as solid, thus lessening the cost of carriage, and giving great advantages in overhanging cornices and in the decoration of wooden structures. For any purpose for which natural stone has been used for architectural ornament and construc-

etc.; plinths and copings; string courses and water tables; brackets, trusses, and corbels; capitals, columns, and bases; window and door sills; jambs and heads; rusticated and other quoin and ashlar stones; ashlar facings to bond with brick work; chimney tops, sinks, mantle-pieces and stove casings; hollow walls or blocks; and particularly for ornamental work, as fountains, vases, urns, etc.; curbs and bor-

CORRESPONDENCE.

Napa County.

EDS. PRESS:—In your issue of June 22d you speak of having a correspondent, Mr. G. Backus, of Napa Valley, who practices cutting back the bearing shoots of the grapevine, in vineyard culture, leaving from two to four leaves only above the clusters. And, that Dr. D. K. Rule tried the experiment on a block of 1,200 vines with, and without cutting back, and the result was one ton more weight in favor of the "cutting back."

You very properly invited our grape growers generally to send in their experience in this matter of "cutting back," that it might be published in the RURAL for the benefit of others. Not one has responded to this invitation yet; though more than two months has elapsed. I am satisfied we have plenty of persons that have had sufficient experience in this locality, to be of great service to others if they would only take the time and trouble to put it in shape for publication.

I have had no experience in grape growing myself, but I know that "cutting back" is pretty generally practiced here, and as I understand for the purpose of producing a denser foliage to protect the fruit from the hot rays of the sun; which toughens the skin of the fruit on the side thus exposed and prevents its full development.

All those that understand the nature of plant life, are particular to cut back early in the season that the laterals thus produced may have time to sufficiently mature before being required to furnish nourishment sap for the development of its fruit. I believe it is pretty generally understood, especially among vegetable physiologists, that the sap is the blood, and the leaves the lungs of a plant, and that the blood (sap) is created and purified through the lungs (leaves) before it is in a fit condition to develop perfect fruit.

We might with just as much reason expect a healthy and well developed human being with half his lungs removed, as to expect perfect fruit from a plant with half its leaves removed, at or before, the critical period of development.

Fruit Growers and Others,

Ought, I think, be more willing to give their experience for the benefit of others; it would be especially beneficial to "new comers" who are not acquainted with our soil and climate, and our mode of culture. We have such a variety of both soil and climate, that one man's experience in one locality, will not do for all. Hence I say, we would confer a great favor, nay, I think it a duty we owe each other, as well as to the emigrant who wishes to settle down among us.

I am happy to say, our Farmers' Clubs are doing a vast amount of good in that way, which will surely hasten the development of the varied resources of our much favored land.

I will here mention an experiment I made on a small scale last year. I planted an acre of warm, gravelly land to beans; they grew well, and bloomed profusely; just then the "heated term" commenced, which cooked the embryo beans completely.

If this experiment had been made in the cool, moist climate of the coast, I have no doubt my selection of soil would have been proper. This year I planted the same ground to watermelons, and cantelopes; and the result is, about \$80 as the proceeds. My beans this year being planted in lower, moister land, have done well.

What Pluck and Energy will Do.

There are a great many industries that can be developed, and made to pay, with very little capital, provided one has a goodly amount of energy and pluck; for example, Mr. Clock of this place, leased a piece of rich bottom land on Napa creek, and planted it to hops. His means were limited, and the prices realized were very low, scarcely enough to pay his current expenses; but by hard work and close attention to the business, he was enabled to hold out until the advance in prices last season, which has enabled him to realize enough to purchase a track of land for a new hop farm, and is now building a large concrete drying house to cure them in. So much for industry and perseverance.

Extensive Wine Cellar Wanted.

The vintage season is close at hand, and as a large quantity of last year's wine is still in first hands, it becomes a matter of no little importance to our grape growers, to know what they will do with their surplus grapes—for a surplus we certainly will have, unless our wine-makers dispose of a considerable quantity of their stock on hand.

Dr. Crane and Mr. Chas. King are putting up extensive additions to their already large establishments, but this will not be sufficient for the present season, to say nothing of coming years. A great proportion of our vines are young, (all foreign varieties) and the yield will be yearly increasing, and it will soon become an absolute necessity, (if it is not already) for our grape growers to form a joint stock company, with capital sufficient to build a large establishment, and hold their wines until mature. Here is a chance for men of means to build themselves up a permanent and paying business.

A Lesson From Nature.

We should all act upon the lesson taught us

by the late frosts last spring, which thinned our fruit for us. The result is, larger and finer flavored fruit, and commanding a higher price, and a more ready sale.

About Moles.

If I remember rightly, some one asked the question through the RURAL, whether castor oil beans planted in a garden would drive the moles away. I do not remember of seeing an answer; nor, am I able to put in one myself. But a gentleman of my acquaintance has settled the mole problem in this wise; he says they like oil beans so much better than anything else, that other seeds have time to come up, and get out of their reach, while they are consuming the beans.

He says his oil bean crop was destroyed by them (or nearly so) this season.

Farmers and gardeners, what say you, to my friend's solution of the mole question? Let us hear from you.

Eastern Quail.

I was awakened very early one morning about the middle of June, with that old familiar whistle, Bob White! which had not greeted my ears before for at least fourteen years. Thanks to the Acclimatization Society who gave them their liberty at Calistoga last spring. They had wandered nine miles away, and as they are going back the way they come, I suppose they are not satisfied with California, and are on their way back to Missouri. They have not been heard any more in this neighborhood for a month past.

Rural Illustrations.

Your issue of June 29 came to hand with five very beautiful, and faithful representations of the buildings and scenery at the White Sulphur Springs, a very popular watering place, only two miles from our town. Later comes one with the "Big Trees," and last, but not least, a full page engraving of Bridal Veil Fall, Yosemite Valley.

This is a pleasant and instructive feature of the RURAL, and I hope it will be continued.

JNO. MARITY.

St. Helena, Napa Co., Cal., Aug. 30, 1872.

Ventura County.

EDITORS PRESS:—Passing northward from the Pnobia of Los Angeles, a short day's travel of thirty miles, by the way of the Coango pass—which is by the way not much of a pass, being only a short cut through an irregular spur of the coast hills, brings us into the newly organized County of Ventura, at Mountain Station, a wayside caravansary of the primitive type, kept by a pioneer who answers to the name of "Larey," but who upon close questioning, acknowledges the patronymic of Lawrence Howard. With the exception of Mr. Howard there is no settler who talks English for the next fifteen miles, at which distance the new settlements in the vicinity of Wynema are reached.

Until these settlers who are mostly new comers, arrived about three years since, the country was ranged over at will by cattle or sheep, as their owners generally found it convenient not to own land. Thus it is found that many grants, the evidence of title to which was concealed or kept quiet, are coming to light as Providence or policy dictates; their slumbering, was to save taxation, and in some instances to induce settlers to improve.

It is no doubt all fair, that as the then Governor of this province of Mexico saw that it was to go to the United States, determined that as little of value as possible should go with it; therefore, we are informed upon good authority that the last hours of his official cares were busily occupied in giving away "grants" to whoever might ask them; thus entailing a heritage of litigation to the occupants.

A Wheat Country.

But this portion of California is really worth quarreling about, if any part of this terrestrial sphere is that valuable. For although it has been supposed that wheat would not grow here, there has been 30,000 bushels harvested this season, and of barley an estimate can be made by the product of 1,000 acres cultivated by Mr. Leaward, which produced over 800 tons of clear threshed grain.

And then the waters, it does one good to imbibe the pure sparkling fluid that flows from some of the artesian wells; the one at the landing and within 100 yards of the ocean, is of sufficient force and capacity to raise a column of water in a seven inch pipe to the height of eighty feet.

There is at Wynema, (the orthography of which is yet undetermined) a substantial wharf extending into the Pacific Ocean 1,200 feet, and although one feels the throbbings of his pulse, sensibly, as though you were on board a large ship, yet it is thought to be perfectly safe.

This landing for steamers is situated east of Anacapa Island, (just where Point Mogo is located by the map makers; that land mark being at least five miles east of where it is placed by them) and is upon the open coast within full sweep of wind and wave, therefore, if this father of waters was misnamed, the wharf would not stand long.

Your correspondent found a more desirable point for a wharf just south of "Rincon" creek, where the point projects far enough to protect, and where one may stand within ten feet of

Old Ocean at almost any time without danger of wetting the feet with spray, and yet sufficient depth of water, four fathoms, can be reached by a wharf 600 feet long.

There is this advantage however, on the landing at "Wynema," the corn and barley fields come within a few rods of the Ocean, and they are prolific, and extend for 20 miles along the coast, and a still further distance inland.

An intelligent farmer who has been here three years, remarked that the settlers who came here at the time he did made one mistake, and that was they all started in to make money instead of contenting themselves with simply making a good living, and by so doing they accomplished neither. Thus it appears many times, the adoration of the golden calf makes people over-reach themselves.

F. M. S.

Santa Barbara, August 24th, 1872.

Rural Press and Citrons.

EDITORS PRESS:—I am taking the RURAL Press this year and am so much pleased with it in view of the information which it furnishes the farmers and gardeners, that I shall subscribe for it another year.

We have raised several tons of vine citrons as nice as I ever saw. Can you tell us about the process of preserving and drying them for market? Back East we thought they made better preserves for table use than any kind of fruit.

W. BUSH.

San José, Aug. 23.

To preserve the vine citron: Cut the citron into pieces of shape and size to please; pare off the hard outer rind, then slice away the soft inside so that the pieces will be not to exceed three-fourths of an inch in thickness.

To a pound of citron add a pound of best white sugar and the juice of a good-sized lemon. Mix the sugar and the lemon juice and put just enough water to the same to cause it to run from a ladle like thick mush, but not enough to dissolve it. Then pour this over the citron and let all stand twelve hours; then boil in a porcelain or preserving kettle till the citron is perfectly clear; removing all scum as it rises.

When the citron, on being lifted out with a fork, appears perfectly transparent, add the peel of the lemon cut in small pieces; take out both citron and lemon and put both together in glass jars; strain the syrup through a flannel cloth and pour it upon the citron.

The object of the lemon juice in the first instance is to prevent the syrup from crystallization, on cooling, and that of the rind to give it flavor. They make an excellent conserve.

Our correspondent must not confound conserves made in this way and from this species of melon, with the preserved citron of commerce, so much used by confectioners in cakes, etc., as this is the produce of the *citrus medica*, a large variety of the lemon family, with juice but slightly acid and with a rind three-fourths of an inch thick.

Angora Goats.

EDITORS RURAL PRESS:—I noticed lately that Angora goats are beginning to draw the attention of stock raisers, and it is a certain thing that California stock raisers will soon see the advantages of goats over sheep, and goat-raising will be a larger business than sheep-raising in a few years, in your State; and as I have a life-long experience in mohair business and in Angora goat raising in my country, (being a native of Angora, in Asia Minor) it may benefit your countrymen, who desire to raise goats, to give them a few hints or how to commence crossing Angora bucks with common native goats and produce the best mohair-bearing goats.

First of all, the goat raiser must see that the common goats he gets are of the right sort, with large bodies, short legs, strongly built, healthy and young, with as short and smooth hair as possible; say like the hide of a well-groomed horse. Their color must be black or black and white, or all white.

No fawn-colored, common goat should ever be put in any flock of mohair-bearing goats, for a reason unknown, but the goat raisers in Asia Minor know that the cross of black goats will produce the most bright, long, thickly-grown and good quality of mohair. Next to that, black and white, and next to that, all white; goat kids can bear mohair of fair average quality, but fawn-colored goats will take a life time of crossing to bring them to bear fine mohair.

Long-haired, common goats should never be crossed with Angora bucks, because when the long, coarse hair of the mother side and the fine, long mohair of the father side, get mixed in their kids, the mohair of them will be utterly worthless and useless, for there is no manufacturers of such mixed hair in any part of the world.

I understand that in California, sometimes for sake of economy, they use graded bucks, that is the greatest error they can commit; no graded buck should ever be used for breeding; always thoroughbred and the best of thorough-

breeds. No matter how beautiful a grade buck may look, no matter how many crosses back, when he has the slightest part of common blood in him, he will deteriorate the flock gradually and bring their mohair to common white, thick hair which is not worth one-tenth of good, fine mohair.

I would not use a buck of 10th cross viz; 1023-1024 blood, to breed from; but the thoroughbred will improve the flock from cross to cross.

Should your subscribers desire to ask in regard to any other point of goat raising I shall be happy to answer. A. EUTYCHIDES.

Spout Spring, Appomattox Co., Va.

The day previous to the receipt of the above, we had addressed a letter to Mr. Eutyichides, asking him to give us the address of any parties in America, who are buyers of Angora wool. We shall doubtless hear from him in due time. It is important that we should know where we can sell our Angora goat wool.

Santa Barbara County.

EDITORS PRESS:—After sojourning in Los Angeles for some months, it is a little difficult to make up one's mind immediately in regard to Santa Barbara. But there is one thing certain; the local papers have done injustice to themselves in many instances. For there are very many coming here from all parts of the States, with their minds made up fully to see as near an earthly paradise—as is possible for the human mind to conceive—and as the actuality is just a little short of their expectation, they are of course disappointed, and feel injured and in fact cheated.

Now the truth about this region is good enough; then why not let well enough alone? In wandering along the beach, listening to the gentle throbbings of the largest of oceans, in climbing the rocky cañons to get a better taste of the mountain water—or in standing on some commanding high—where sea, islands and mainland are stretched like a map at one's feet, no matter where, the impression is always present that—I made a serious mistake in ever leaving a country so favored by nature—and that I ought to have remained—when twenty-two years since the balmy air of this coast restored to health an apparently hopeless invalid.

So that never so sanguine a speculator can accuse me of prejudice against the locality. I am more free to point out the injurious tendency of overdrawing upon the public credulity.

Lands and Tilles.

It was anticipated that real estate would be high in so favored a region, but we were not prepared to find unimproved land half covered with rocks and three or four miles back from the ocean or town, held at one hundred dollars per acre.

There is no doubt it may be made to be worth that money by improvement, but there are more secure things upon this earth than the land titles of this southern country, under the legal legerdemain which appears to reign.

About eight miles above San Buenaventura, the Rincon Creek marks the dividing line between Santa Barbara county and the new county of Ventura; here begins a high rolling country that is just enough diversified with hill and vale, and open plain, to make it pleasant and attractive for places of residence; and some of the homes that have been reared here could not have been as well adorned by fifty years of art and cultivation as they are by nature.

The water too is better than one could expect in so mild a climate and in a country where the pitchy element is so abundant in the soil.

A Paradise.

Taking the country from the Rincon Creek through Carpinteria and Monticello, say twelve miles in length and probably three or four miles in width in some places—I do not think a more desirable place of the same area exists in this or any other country for health and comfort at all seasons of the year.

There may be a little less variation of the thermometrical record of San Diego, but if the climate was just what every one would have it, and every other surrounding in proportion, instead of its being a perfect Eden as it might be, there would be such a squabble for this little spot of earth, as to turn it into a most unpleasant place to inhabit.

As it is, nearly every person is overloaded and has land to sell—which is not to be wondered at—considering that the price has gone up from a mere nominal price within the last three years to from fifty to five hundred dollars per acre.

The big grapevine is boxed up out of sight, so that one must go through and patronize the "bar" to see it, therefore your correspondent has no report to make upon it. The hot Sulphur Springs and other curiosities may be alluded to in our next.

F. M. S.

Santa Barbara, August 28th, 1872.

FOR REPAIRING PAPER ROOFING, the asphaltum of which has suffered from effects of the sun, it is proposed to paint it with a mixture made by slacking lime with sour milk and adding to this, water, until the whole has the consistency of whitewash. The casein of the milk forms a cement with the lime, and thus the roofing is made water-proof and sun-proof.

HORTICULTURE.

Insects Destructive to Germination.

All who grow trees, plants and flowers from very small seeds, know how difficult it is at times to get them to grow; and the blame is sometimes placed to the account of the seedsman, as furnishing imperfect or old seed, when the fact is the seed is perfectly good and should, nine out of ten, germinate.

The most common error of those who are not professional gardeners and florists is, that of covering small seeds too deep. But setting this cause of failure aside, the most experienced often meet with provoking disappointment in the germination of minute seeds. On being moistened they show every evidence of vitality, and will even put forth the germ of growth, but when put into ordinary garden mould seem to cease at once from further development.

Discovery of the Cause.

Mr. A. D. Pryal, of Oakland, has been giving to this subject more than usual attention with a view of discovering the cause of the non-germination of very minute seeds, when everything would indicate an unimpaired vitality.

He simply instituted microscopical observation, and to his surprise found that the small, delicate germs just emerged from the shells of the seeds were infested with a host of little insects, too small to be observed by the unaided eye, but large enough and in numbers sufficient to destroy the entire germ in nine out of ten of all the seeds.

It was only here and there one that possessed unusual vigor and rapid development was able to survive the attack of the army of little insects infesting it. An extended examination showed also that almost all garden mould or loam as usually prepared for potting plants or for seed beds, was literally swarming with minute animalculæ.

Application of a Remedy.

To drive out or destroy the enemy was the next effort of Mr. P. in the line of experiment. Having gathered up every fragment of old cloth, scraps of leather, chips and bones he could find, into a flattened pile in the garden, raised a ridge of loam six inches high around it, and then covered all over with a thin layer of garden mould, having first set the pile on fire.

Watching the burning, whenever the fire would work its way through, partially smothered it by applying a little more loam, and continued to do so till all was consumed. The effect was to completely saturate the entire mass of loam on and around the burning pile with the essence of smoke or, in fact, creosote.

Mixing ashes and loam all together, he obtains a compound of such strength, when mixed one measure to five of common garden loam is certain death to all insects in it, and gives off an odor of smoke that pervades the whole house.

Of 32 pots of Eucalyptus seeds sown in loam thus prepared, it appeared as though twice as many grew as were sown; so different was the result from any ever before obtained. Our lady florists can take a hint from this.

CULTIVATED VS. GRASS LAND FOR PEARS.

A correspondent of the *Rural New Yorker* writes that he has lately met with a case where an experiment had been tried for five continued years, for the purpose of seeing the difference between allowing young trees to stand in grass, and keeping the ground mellow by cultivation. A dwarf pear tree was planted in a large flower bed where the soil was constantly mellow, and another a short distance off in sod. The tree in cultivated soil, at the end of five years, was four times as large as the one in grass; and a standard pear tree under similar treatment, was eighteen times as large as the other standard not cultivated. We have frequently met with similar cases, with results not greatly different from these.

LEAVES VS. THE SUN.—A writer who evidently knows whereof he affirms, says: "It is a mistake to imagine that the sun must shine on the bunches of grapes in order to ripen them. Nature intended no such thing; on the contrary it is evident that the vines naturally bear their fruit in such a way as to screen it from the sun, and man is most unwise when he rashly interferes with this intention; what is wanted is the full exposure of the leaves to the sun; they will prepare the nutriment of the grape—they will feed and nurse it, and eventually rear it up into succulence and lusciousness."

Grape Culture.

A writer engaged in grape culture near Sandusky, Ohio, has heard that in California, vines are tied to stakes only two feet in high, and asks how we manage to keep our vines sufficiently up from the ground to escape mildew, rust and rot in the grape.

We happen just now to be in possession of a few notes on grape culture in Napa Valley, obtained from Mr. T. L. Grigsby, defining to some extent his mode of culture, which we will make use of, as answering fully the inquiries of our correspondent.

His grape lands are what would be termed gravelly or stony foothill lands, and yet immediately adjoining the more level valley lands, the latter being better adapted to corn and other annual crops.

Preparation of Ground.

It is the practice of Mr. G. to plant rooted vines of one year's growth, instead of cuttings, as preferred by many. To do this and secure the best possible thrift to his vines, he thoroughly plows and pulverizes the soil to the depth of from 18 to 20 inches. This is done in fall and winter previous to planting, and the transplanting from the nursery row to the vineyard ground is done from the middle of March to the 6th of April.

By this method he never fails of securing a vigorous growth, saves one year of field cultivation and the difference between setting the rooted vines and cuttings he thinks is fully made up by the ease with which his cuttings are cultivated in close nursery row.

Distance in Planting.

Hardly any two persons agree as to the best distance for vine culture, and doubtless much depends upon the varieties of grapes cultivated. Some being of more vigorous habit of growth than others, require more room; but Mr. G. has fully determined, that all things considered, eight feet by eight is the best distance to be observed on his land.

Where the land is low, strong and rich, doubtless more room should be given than when it is high, dry and of less strength. At a distance of 8x8 feet, vines five years old in Mr. G.'s vineyard produce at the rate of four tons 700 lbs. to the acre. From vines nine years old he has grown as many as nine tons per acre. He gets \$20 per ton for the Mission variety, and \$30 per ton for foreign, and considers it better than any other crop he raises.

Low Training.

After trying high and low training to his full satisfaction, he is convinced that in his locality it is better to train them low, taking cost of stakes and labor into consideration and gives them a trunk of only one foot in height, which to our Eastern inquirer will seem quite strange; but when it is understood that the grapes will not rot even when lying on the ground the strangeness vanishes.

As to the age at which our vines bear—it being one of the questions of our correspondent—we are informed by Mr. G. that his Mission grape vines, in the fall of the second year after transplanting, yielded him 1,106 pounds to the acre.

Displaying Flowers at Fairs.

Mr. James Vick, who can certainly claim to have had much experience in that line, gives, in the *Country Gentleman*, the following directions how to arrange for displaying flowers at county fairs:

Make a rough table about three and a half feet wide, and as long as may be necessary to accommodate all. In front nail a board four inches wide, and at the back one five inches wide, with a board also at the ends. Fill the space thus made on the top of the table with damp sand, smoothing it off nicely with a board. The back part of the table, where the sand is the deepest, can be used for tall flowers or bouquets. A piece of red tape or an evergreen wreath may be placed between the collections of different exhibitors. It is to put a guard around the table to keep the crowd from pressing it and injuring the flowers. It should be about eighteen inches from the table. This space affords a good place for the committees and exhibitors, where they can stand to answer questions and give the names and character of flowers to spectators. If it is desired to give an air of elegance to Floral Hall, the table and guard can be decorated with evergreens and the sand covered with sheets of moss. Near the entrance door, or in some convenient place, have a barrel of water; also provide two pails and two sprinkling pots. This is all that will be needed to furnish all the conveniences any exhibitor can desire, and it will be seen that by this plan little expense is incurred, all being done with a few hours' labor, and the buying or borrowing of crockery is dispensed with.

GRAFTING GRAPE VINES.—The French Academy is engaged in investigating the merits of a new way of grafting grape vines, discovered by Victor Ugolini. Instead of inserting a twig in the usual way, a pip or stone taken from the dry raisin is used, and this, it is reported, germinates in a slit made in the stock, and soon produces vigorous shoots. This system, it is hoped, will prove a remedy for the losses experienced from the fall of buds occasioned by frost and other agencies.—*Ex.*

MISCELLANEOUS.

Novel Application of the Screw Principle.

Sanguine expectations appear to be entertained in some mechanical quarters that the principle of the screw will soon be successfully applied to give power to railroad brakes, instead of the lever as at present applied. A Massachusetts artisan, indeed, is said to be engaged in the invention of a screw brake which bids fair to ultimately fulfill all the conditions and answer all the tests required of it. Should this invention turn out to be possessed of the value expected for it, it will be a great desideratum, and will add one more to the long list of discoveries which are as surprising for their simplicity as for the best amount of ingenuity expended in their search. But it must be remembered that the pressure of the screw, if applied directly, is absolute, and not relative to the force applied to it. Neither is there any giving or elasticity to be expected from it. Apply power enough to the screw, and the effect is almost a dead block, and it would seem as if this must necessarily subject running gear to a jerk or strain altogether incompatible with durability. But no such effect occurs from the application of the lever brake.

The pressure is cumulative and gradually felt, and even when brought to its maximum and checked there, the train gets the advantage of all the elasticity in the material of the brake, lever, chain, or whatever apparatus is employed in applying pressure, so that if something is lost in promptness of action, more is gained in diminishing straining. These are some of the reasons why it would appear to be doubtful whether the application of the screw principle will be found a practical improvement on the power of the lever, as at present employed in governing the motion of railway trains. Still the subject is one of sufficient importance to enlist the attention of our mechanics and inventors, and we hope it may be further investigated.—*Am. Manufacturer.*

What is Dirt?

Old Dr. Cooper, of South Carolina, used to say to his students: "Don't be afraid of dirt, young gentlemen. What is dirt? Why, nothing at all offensive, when chemically viewed. Rub a little alkali upon the dirty grease spot on your coat, and it undergoes a chemical change and becomes soap; now rub it with a little water and it disappears. It is neither grease, soap, water nor dirt. That is a very odorous pile of dirt you see yonder; well, scatter a little gypsum over it, and it is no longer dirty. Everything like dirt is worthy our notice as students of chemistry. Analyze it; it will separate into very clean elements. Dirt makes corn, corn makes bread and meat, and that makes a very sweet young lady, that I saw one of you kissing last night. So after all, you were kissing dirt, particularly if she whitened her face with chalk or fuller's earth; though I may say that rubbing such stuff upon the beautiful skin of a young lady is a dirty practice. Pearl powder I think is made of bismuth, nothing but dirt. Lord Palmerston's fine definition of dirt is 'matter in the wrong place.' Put it in the right place and we cease to think of it as dirt."

FLANKING THE PROHIBITIONISTS.—A London chemist has flanked the prohibitionists completely. He has discovered a new way of getting "discouraged," by the use of a beverage made from naphtha and ether. The most reliable M. P.'s have tested its qualities, and declare that the "how come you so" resulting from its use is far more agreeable than that of the old orthodox distillations. As it is not a distilled spirit, it does not come within the English excise law, and a special act of Parliament will be necessary to stay its manufacture and sale. And there is the difficulty. The Lords look at the conundrum very much as our M. C.'s do the franking privilege—they sort of like the thing—and Victoria has got to issue a crown writ for the creation of a new batch of peers before the knight of the mortar and pestle can be voted a nuisance by the the law-makers of the realm.

SENSATION IN THE MOUSE'S EAR.—Dr. Schobl of Prague has made the distribution of nerves to the ear of the mouse a subject of special examination, and calls attention to the fabulous richness of this organ in nerves, the bat's wing being in comparison but poorly supplied. According to the doctor's estimate, a mouse's ear of ordinary size presents on an average 6,000 nerve terminations, or, for both ears, 12,000. The function of this elaborate development is probably, as in the case of the bat's wing, to enable the animal to guide its way through dark narrow passages.

HYDRAULIC power on the great scale (10,000 horse-power) is to be established at Bellegarde, on the Rhone, by drawing off one-third of the water of the river through a tunnel 550 yards long. The height of the fall will be fifty feet, and it is hoped to induce the Alsatian manufacturers to settle there and establish a second Lowell.

Incidents in Engineering.

A late correspondent of the *Scientific American*, furnishes that paper the following with regard to "low-water" in boilers:—"I have had a considerable experience with steam, having designed, built, and run several styles of engines and boilers. When experimenting, I have several times evaporated every particle of water out of a boiler without any injurious effects, except perhaps to make the boiler leak a little. Of the boiler explosions throughout the country, one half the verdicts rendered assign the cause to low water. But simply low water will not cause explosion. The following incident will confirm this statement.

An engineer of my acquaintance, who runs a propeller engine, was at one time on Lake Michigan in sight of Milwaukee when the pumps stopped working. It being very rough weather, it was considered dangerous to stop the engine. The captain became much excited and thought the boat would be lost. The engineer told the captain that he would run the boat as far as Milwaukee without any additional water, if he would be responsible for the boiler. "Go ahead," says the captain, "I don't care a fig for the boiler, if we can get the boat and crew safe into port." The pumps were shut off, so that, if they got to working, no water could enter the boiler. They arrived safely in port with a boiler one-third full of water; the upper flues were red hot and considerably sprung, but the furnace doors were closed tight, all air drafts being stopped with ashes. The fire on the grate was allowed to die out and the boiler gradually cooled off. Strange as it may appear, the flues became straight again, and no perceptible injury to the boiler was afterwards discovered.

CHARCOAL FOR ANIMALS.—It is difficult to doctor brute animals, because they cannot tell what is the matter with them; and probably three quarters of the attempts made to relieve them only makes matters worse. Generally they are sick from over-eating, or from excitement and over-heating. It is not uncommon for a horse or cow in the pasture to eat too much green clover, or apples; or something else disarranges their stomach; or in the barn they will get into the meal barrel, and suffer from the effects. In all such cases the remedy is pulverized charcoal. Take it new from the wood fire, grind it, and pour it down their throat. It never can do any injury, and in hundreds of cases it has afforded speedy relief. There is no animal that over-eats so often as the pig; and, as a regulative of his digestive powers, there is nothing so good as charcoal. It should always be kept in the pig-stye, and in small quantities fed every few days, and it is worth more than the same bulk in corn.

SCIENTIFIC research, it is stated, does not make such rapid progress in Great Britain as it does either in Germany or France. Thus, in regard to chemistry, the number of papers describing original investigations which were established in 1866 amounted to 1,276, and were written by 805 chemists, giving 1.58 essays for each investigator. Of these, Germany contributed 445 authors and 777 papers, or 1.75 essays for each investigator; France 175 authors and 245 papers, or 1.44 essays for each investigator, and Great Britain 97 authors and 121 papers, or 1.31 essays for each investigator. Other countries furnished 93 authors and 124 papers, or 1.33 essays for each investigator. A large proportion of the papers contributed by Great Britain were written by Germans residing in that country.

BEAUTIFY THE FARM.—The Maine Farmer says: You can so beautify your premises that travelers will have to love it as they pass, study the points that attract, and carry in their minds ever after, the recollection that it was a home of outward beauty, made so by the presence of inward taste and happiness. But to your own mind will come the greater good. Life will be the brighter and happier to you. Your children will grow up to love the home you have rendered so attractive to them, and its beauties will ever act as educating influences for good upon their minds and hearts. The dull routine of hard labor will be relieved by the rational enjoyments which come from the surroundings, whenever brought under their silent power, and you will grow into a purer life and nobler manhood in consequence.

EARTHQUAKE.—Colonel Mendell reports that on the 23d of August, at 4 p. m., the Coast Survey tide gauge at Fort Point began registering earthquake waves, and continued to record the vibrations for a period of twenty hours. The phenomenon indicated that a great earthquake of long duration was taking place at the time at some great distance from this coast. The waves were about six inches high, and plainly detected on the beach. Some future arrival from the west will probably bring intelligence of the locality of this great convulsion.

A RECENT amendment to the general railway law in Massachusetts, all railways connected with Boston are required to run a six o'clock morning and evening train, and issue tickets therefor at a rate not exceeding three dollars per mile per year, for distances not exceeding fifteen miles. The object of the law is to provide cheap transportation for working people.

ELECTRICITY is developed in metallic wires by merely bending them, and the development appears to be independent of any thermic action,

FARMERS IN COUNCIL.

Napa County Farmers' Club.

Club met Saturday, Aug. 24th, President Fisher presiding. Communications of interest to the Club relating to a FARMERS' EXCHANGE, were read by the Secretary from Wm. Gov. Morris, Baker & Hamilton, and L. L. Johnson of San Francisco; Mr. Johnson enclosing a circular for the consideration of farmers.

It was motioned and seconded that the circular be the subject for discussion on Saturday next. Carried.

Upon suggestion of Mr. Saul, Maj. Morris was added to the list of delegates to represent this Club at the Convention in Sacramento on the 23d prox.

An Important Subject.

Mr. Fisher—In speaking of the subject discussed last Saturday—"How are we to best educate our children in order to make them useful members of the community?"—said that it was one of such magnitude, and required so much thought and study to present it in a proper shape, that it should be made the subject of a lecture or an essay, to be prepared by some one capable of doing it justice, and delivered before the Club at some future time.

Mr. Saul thought this subject rather metaphysical—fit only for the student, and not the proper subject to be discussed by the Club, but rather suited for a winter's evening lecture; though he did not object to it, and would be glad to hear it treated on in its proper place.

The Subject for the Day.

Being announced by the President—"What varieties of fruit are the best to raise in the soil and climates of Napa Valley?"—

Mr. Saul was called upon to give his experience in regard to Fruit-culture. He believed that immense sums of money had been spent for worthless trees which had been disseminated by swindling nurserymen. So many unprincipled men had engaged in selling trees, representing them to be grafted fruits, true to the label, that it has prevented fruit growers from entering more largely into that business. In peaches, the—Lake variety do well everywhere tried. In 1855 the "curl leaf" made its appearance, and did considerable mischief, though four varieties including the "Smock Free" and "Stump of the World" were free from its ravages.

Mr. Nash—Our fruit is something that interests us all, and what we want is to cultivate those varieties best adapted to our soil and climate, and that command the highest prices. He had imported grafts from Pennsylvania and Illinois, and had experimented largely in finding what varieties—best in flavor and quality—were most suitable for this valley, and in a short time would publish an essay giving the experience thus acquired. He wished to give Mr. Lewelling credit for introducing the better varieties of fruits on this coast. Fruits that thrive in New England fail here in many cases. In peaches, he had 31 varieties, all of which, excepting five, were effected by "curl leaf."

Mr. Jacks thinks the speakers are wandering, instead of coming to the point at once. He asks Mr. Saul what kind of fruit are best adapted to the highlands? Knows of a man who raises a variety of apples on the mountain side the same as he himself cultivates in the valley, and while those of the former are crisp, hardy apples, his are dried up and unpalatable.

Mr. Saul's opinion was that the difference in climate made the difference in fruit. There is no portion of California where there is any depth of soil, but that fruit trees will flourish; there is no soil, that is not a swamp, but that fruit can be cultivated successfully. Cherry trees are whimsical; have seen them thriving on the American bottom at Sacramento, at Oak Knoll in a gravelly, hot place, and at Nash's Magnolia Farm, growing finely. During the past seven years, cherries at Oak Knoll have done well, without irrigation, the ground being well taken care of. We ought to learn to cultivate our fruit without irrigating—it is an expense we should do away with. He believed trees should be pruned more, relieving them of the excess of fruit, which would secure a larger and finer quality of fruit. Orange trees will do well in localities where they are not subject to the late spring frosts. He had seen an orange tree high up in the foothills covered with fruit all winter. In our valleys the frost and sun would operate against this kind of fruit.

Mr. Jacks asked what soil is best adapted to plums?

Mr. Saul—Plums will flourish in clay soil. In any other the curculio (a suouted insect), which penetrates the soil where it lives in winter, stings the fruit. Wherever the ground is impervious to these destroyers, plums do well, the curculio having no means for perpetuating itself.

Mr. Nash—As to soils, apples, peaches, etc., will do well where the land is not spouty, on well drained sandy loam, or gravelly soil. The pear tree will grow on low, wet ground. For apples, the greater the altitude the better. Had sold trees to a gentleman in Santa Rosa, whose place was 1,000 feet higher than his own. One variety of these apples, on the Santa Rosa land, kept till March, and was good and juicy; while on his place, this same variety did not keep till winter. The difference in altitude explained why Oregon, and the foothills of the Sierras

furnished better apples than we could raise in our valleys.

Mr. Saul thought the White Winter Pear Main the best variety of apple to keep.

Mr. Nash had raised the Pear Main, but it had been condemned by all Horticultural Societies because of its toughness and poor flavor. The Yellow and Green Newton Pippins are good keepers. Southern varieties are the best for this climate.

Mr. Jas. Thompson—For the best winter apple, he would unhesitatingly name the Greentown Pippin, which will keep until March. It is good, either as an eating or cooking apple. The Hoover, a new variety in this State, gives general satisfaction; has high color, and commands a good price, though inferior in quality to the Greentown Pippin. Another Southern variety which had been introduced was the Ben Davis, an immense bearer, and the apples being of good color and size. In selecting a soil for apple-orchards, he would always choose the alluvial bottom-land, where apples will do better than on lighter soil. Lands located in the foothills of the Sierras, where there are facilities for irrigating from the mountain streams, produce the finest of apples.

Mr. Fisher—Four points have been gained thus far, in this discussion: 1st. That our fruit interests have been disregarded by dishonest nurserymen, who disseminate trees not true to the label. 2d. That Southern varieties are best adapted to our climate. 3d. That the greater the altitude the better the apple. 4th. That without irrigation, but with good care, fine fruit can be raised. Now, in regard to the "curl leaf," is there no remedy for it? Is it not caused by the superabundance of sap in the tree during the spring of the year? If so, would it not be well to cut off a portion of the roots?

Mr. Nash had found no one that could give a remedy. The different varieties of peaches, as of other fruits, are produced by hybridization, and some are more tender than others. When we have chilly rains in the spring of the year they curl worst. The old California varieties invariably curl. He attributes this "curl leaf" to the damp, chilling atmosphere.

Grapes.

Mr. R. S. Thompson recommended as among the best foreign varieties of grapes, for table use, the Muscat of Alexandria and Flaming Tokay; they do well on land underlaid with subsoil of clay, and always find a ready sale.

Mr. Sigrist—The Muscat of Alexandria, for table use will only do well on strong soil, while grapes grown on any soil will make good wine. Neither frost nor mildew had given us much trouble yet. For grapes, exposed locations were as good, if not better, than those protected, the night breezes carrying away the frosts and dew that would otherwise settle on the tender plants. He would recommend early pruning.

General Remarks.

Mr. Nash thought the Farmers' Exchange subject one of great importance. It is a move toward protecting the grain growers of the State. He endorsed the plans set forth in the circular and urged the necessity of organization. In speaking of shipping fruits Mr. Nash said: We all know that the railroad monopoly is operating to suppress us. I have made, with one team, \$12 per day by hauling my fruit to Napa and shipping it per steamer. It is better every way, as it requires less handling, and the freight charges are very much lower. As to fruit boxes, he said he had them made cheaper here at home than in San Francisco, therefore we should give home manufacture the preference in ordering our boxes.

The Subject for To-Day

Will be "A Farmers' Exchange, and the duties of delegates to the Convention at Sacramento, Sept. 23d."

Adjourned to meet Saturday, Aug. 31st, at 1 o'clock. W. A. FISHER, Pres't.
G. M. FRANCIS, Sec'y pro tem.

San Joaquin Farmers' Club.

This club met Saturday, Aug. 31st, Vice-President Smyth presiding. Captain Ketchum, delegated to represent the club before the State Board of Equalization, reported that he had proceeded to Sacramento and met the Board, and at the same time Supervisor Fanning and Mr. Covell, the county Assessor, appeared before the State Board. Captain Ketchum said that he had tried to induce the Board to reduce the assessment in San Joaquin county ten per cent., and claimed that the assessment as it stood, was too high. Mr. Covell claimed that the county had not been assessed too high. Mr. Fanning also said that he had appeared before the State Board on the part of the Supervisors, and claimed that the assessment was too high. He said that Mr. Covell had presented a list of some fifty sales made within the last two years in this county to sustain him in making the assessment. The State Board took the application under consideration. The report was accepted and the committee discharged. The subject of fall or dry plowing and sowing was discussed at considerable length by Messrs. Phelps, Cochran, Fanning, Tierney, Smyth, Ketchum and Walthall. The question, "Will it pay to raise wheat on a small farm?" was adopted for discussion next Saturday afternoon. A resolution was adopted requesting the President of the club to call on the Governor of the State for a set of the Reports of the State Geological Survey, to be placed in the Club Library. On motion, the club adjourned.

San Jose Farmers' Club and Protective Association.

Club met on Saturday, Aug. 31st, at 1 P. M. President Casey presiding. Mr. Cadwell, for the Committee, offered the following

Petition.

To the Honorable, the Mayor and Common Council of the city of San José, greeting. We, your petitioners, would respectfully represent that any law prohibiting the sale, in this place, by persons or families, of products of their own raising without license, operates as a hardship both on the producer and consumer; we therefore pray that such Law or Ordinance be so altered as to allow persons to sell products of their own raising to whomsoever they will without license, and your petitioners will ever pray.

It was moved and carried after a short discussion that the President and Secretary sign the petition and present it to the Mayor and City Council.

Mr. Burglund said that under the old Spanish rule there had been a plaza laid out on Market street, where all the surrounding producers might come and sell without license—and that in our treaties with Mexico we agreed to protect the rights of the settlers or residents, and that therefore any law denying that privilege to settlers is illegal and void, being in violation of a higher law, "a treaty with Mexico."

Mr. Thompson thought the petition better be circulated for signers, that it may have more weight with our City law makers.

Mr. Holloway said all we need to do, is to go ahead and sell, that there is no sense in the law, and it should be resisted, but first let us give them a chance to do what is right.

Mr. Ware was in favor of having the petition circulated for signers, as the Mayor and Common Council would probably pay no attention to the Club without the cooperation of the citizens of San José.

Mr. Herriug thought there would be no trouble about the citizens of San José. They have common sense and of course will sign the petition.

Mr. Holloway opened the discussion of the question of the day:

Does the present mode of farming in this valley pay, if considered with reference to the value of land and rent? and if not, what is the remedy?

On this question hangs the whole financial system of the country. He had heard that some one had a large bank account—but a poor dilapidated house and bad fences, but that is not generally the case. Many who appear prosperous and have everything around their places in good shape also have them covered with good round

Mortgages.

The papers are full of trash about the fine crops raised and about the value of the wheat on hand; and this gives a false impression as to the actual state of things. Many have not raised grain enough to pay interest on what they could have sold their lands for. Wheat will not make farmers rich, yet that is the idea conveyed. It is an evident fact that if

Men do their own Work

Their lands produce better than if cultivated by others in large tracts. He has seen in some large fields a squirrel to every square yard.

The Remedy

Lies in cutting into small farms and cultivating properly; then we get rid of such pests and make farming pay. It is the duty of every patriot to help to bring on this reform. To live on rented land is one of the worst kinds of slavery. Dry land renting at \$5 per acre is \$1.50 more than the reuter can afford to pay.

Mr. Hobson wanted to hear from real farmers and know if it paid them.

Mr. Chipman in reply said that he had always made it pay, not only here but wherever he had tried it. We should not say so much against

Large Farmers.

They are the ones who have made a success of it. They were as a general thing, small farmers once, and have grown gradually; we need them here and might profit by their experience and advice.

Mr. Hobson thought this a good country to farm in. He remembered that in many a field in North Carolina a man at a full sweep of the cradle could not cut more grain than he could easily hold between the thumb and fingers of one hand. The great trouble is, farmers do not manage right, most of them are idle over half the year. A mechanic or a tradesman cannot make anything unless they arrange their business so as to be employed nearly all the time.

Holloway, Jr., said farming has paid and does pay; look around and see the wealth that has come from the soil—the grand towns and splendid buildings. Speculators have grown rich. What we want is that more of the profits should be left with the farmers.

Mr. Ware, (a farmer who has grown wealthy) said this appeared like an old-fashioned method of meeting, where every one was expected to give his experience, but as they all knew him he would give his observations instead. He had traveled considerable but had nowhere else found so favorable a soil and climate. Then it is easy to answer, can farming be made to pay. He has observed that it is the

"Man"

More than the business that won't pay where there is a failure. He has invariably noticed

that men of industrious, economical habits, who worked till they got a few hundred dollars ahead, and rented a piece of good land, were sure to succeed. He had found that young men who have intelligence enough to be industrious and economical also had intelligence enough to select good land that was sure to give a crop. Farming is the most profitable of all occupations, and such men can not help but succeed.

There are others who endeavor to farm on a large scale; they commence with nothing in their hands and nothing in their heads. Such men are failures wherever you find them, and in what ever business they undertake. But those who begin with what they have, and work with economy, are bound to succeed, so long as they continue to give proper attention to their business.

The Question adopted for discussion at next meeting is "What sort of Ornamental, Shade, and Forest trees, are the best and most profitable for cultivation. The Committee submitted the following:

Report on the Dubois Attachment to Mowers.

We, the undersigned, a committee appointed by the Farmers' Club of Santa Clara county, Cal., on the 20th day of July, 1872, to examine the mower attachments invented by Orrin Dubois, beg leave to submit the following report: That we have seen the inventions and saw them work. First, in tall standing grain in which they did their work most satisfactorily. The sweep attachment laid the grain smooth and even, with the heads all from the standing grain and with the butts towards it, separated from it a convenient distance to be entirely out of the way of the mower in again passing it. From the peculiar construction of the invention, it is enabled to do its work well under all circumstances, no matter how hard the wind may blow nor how high the grain, grass, mustard, or weeds may stand. Another peculiarity of the machine is that by its aid a mower is enabled to pass through mustard stalks and weeds, with comparative ease, where it would be impossible for the machine to pass without it. The inventor at our request removed the attachment and rigged the mower in the usual manner, and mowed a swath. The wind was blowing from the north and the swath led from west to east. It fell against the standing grain, thus making it necessary to remove the same before the mower could again pass, otherwise it would have cut the heads from the previous swath, which would then be too short to rake, and would therefore be lost.

The Mouldboard Attachment was placed on the mower, and it was taken to another field, where the grain (barley and wheat) was lodged, and lay close to the ground, completely tangled; this invention enabled the mower to do its work completely, not being subject to any detention whatever. We are of the opinion that the inventions will work equally well in all kinds of mowing, as tangled grass, weeds and running vines will be cut with facility. We therefore confidently recommend the inventions to all persons owning mowers, as they will save the labor of removing the swath before the mower comes round again in many kinds of mowing.

JOSEPH LEE,
S. H. HERRING,
W. B. SHOEMAKER,
for A. C. ERSKIN.

Committee.

The Report was received and the Committee discharged.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

Friday evening, Aug. 30th. President Carr in the chair.

A communication from the San Joaquin Farmers' Club was received, stating that the Club had elected eight delegates to the Sacramento Convention, and they had forwarded a copy of their constitution and by-laws. It was placed on file.

Mr. Hyatt wished to say, in the report of a former meeting he was represented as speaking of the inferiority of California grapes, and as stating that irrigation ought not to be resorted to in fruit culture. What he really said was not that irrigation ought never to be resorted to, but that it had an unfavorable effect. He thinks it deteriorates the quality and is of little use, and had better be dispensed with, though it may be useful in starting the vines of small fruits. He also said that strawberries in their wild growth were most frequently found on knolls—not always, as might be inferred from the report in the Press.

After some discussion, a motion was made and carried, that the present delegates to the State Convention be authorized to fill any vacancies in their list that may exist.

Prohibitory Tariff on Farming Produce.

Mr. Pryall complained of the heavy license fees now exacted in Oakland on the sale of farming produce, and as an example of the working of the system stated that not long since, on bringing cherries to market, he was offered only seven cents a pound for them by a dealer, when they were then retailing at twenty-five cents.

Dr. Carr thought the system a most injudicious one, and believed it would form a good

subject for discussion at another meeting of the Club.

Mr. Pryall suggested that a committee might also be appointed to confer with the City Council on the subject.

According to announcement, Dr. E. S. Carr now delivered his promised lecture on the principles involved in the

Preservation of Meats, Fruits, and Food

Generally. The lecture which given *viva voce* and lasted about an hour, was a most instructive one, illustrated as it was by interesting experiments. [A full report, too lengthy for this issue, will be given next week.]

On the motion of Mr. Hyatt, a unanimous vote of thanks was passed to Dr. Carr, for his able and interesting lecture.

Effects of Light on Fruit Preserving.

Mrs. Carr—Will light, in keeping canned fruit affect them, and should they be kept in a light or dark place.

President—"It affects them unfavorably. Light is the greatest organizer existing in nature. It is the great agent by means of which life is developed. That might be a reason why it would assist decay. I am not able to say positively about it. But I think that light would not be as favorable as darkness."

Mrs. Carr—"If a small portion of air was left in the jar in preserving would not that cause decomposition?"

President—"Yes, I think it would operate in that way."

President—(Holding up the article.) The gentleman who gave me this patent jar requested me to experiment with it. Some one might take it and try."

Preserving Fruit with Water.

Mrs. Carr—"Are there any ladies present who have tried preserving fruits simply in water—such as peaches, etc."

Mrs. Moore—"I have tried with one-eighth sugar and no water but the juice of the fruit."

Mrs. Carr—"I acted as a member of the Committee four years at the Wisconsin Fair. I remember Mrs. C. J. Plum as an exhibitor every year, and she took the premium each time. On the fourth year, in my presence, she took the premium labels off the jar with a knife. She had entered six jars of peaches every time which came from St. Joseph. There was 1867 on the first label, underneath that another label with 1866 and so on. The same jar had taken the premium for four successive years. She had merely filled up the jar with water, put it in a dark place and excluded the air. She has tried blackberries and several other kinds of fruit the same way."

Preserving Figs.

If no one else will take up the subject I will speak further. A lady at Mokelumne Hill sent me some preserved figs in a jar. They were treated like tomatoes, boiled in hot water, had the outer skin removed, and placed in ginger-root syrup boiled in water till it was flavored with it. When boiling hot the figs were thrown in. They cooked well and without the slightest danger of going to pieces. They were very nice, and much better than preserves made with East Indian ginger. I shall have figs preserved this way. It preserves the flavor of the fig. The liquor is quite strong before the sugar is added. I intended to make some but I could not find the root."

In answer to subsequent questions Dr. Carr said that pure water would preserve fruits if the air was kept away, but not otherwise. Pure water itself was unaffected by the action of the atmosphere.

Improved Packages for Lard and Fruit.

Mr. Dewey exhibited a new style of California-made lard caddy, manufactured by Swan & Co., Union Box Factory, S. F. It is made of boiled wood from blocks of which a machine made for the purpose, slices off thin and smooth pieces, of the requisite thickness. Sections of these are then bent into the shape of the caddies and riveted. The sides are all in one piece. The bottom, as well as the lid, is made of thicker material than the sides. Its value consists in its cheapness. It can be made and sold for twelve cents, where ordinary ones cost twenty-one cents. It is coated inside with a patented substance which renders it air-tight, and coal-oil proof. Boxes for small fruits of similar construction, will be furnished at comparatively low prices next season.

Judge Dwinelle to address the Club.

On motion it was resolved to invite Judge J. W. Dwinelle of Oakland, to address the Club on the results of his observation in agriculture, etc., in Europe.

Culture of Fruit Trees.

Mr. A. F. Montandon (an operative horticulturist) having informed the club that he would be willing to address them for half an hour on two consecutive meetings on the subject of fruit tree culture, with special reference to table fruits, he was invited to speak at the next meeting.

Mr. Pryal said that if something was not done to the roads leading into Oakland, that they would be impassable this winter. He thought that the balance in the city treasury should be expended on the roads leading into it from Contra Costa County and passing through Biedemann Pass.

Several members of the Club expressed their preference for meeting on some other night, say Monday or Saturday. It was also suggested, without action, to meet alternately on Saturday nights and on Saturday afternoons.

Adjourned to regular meeting, Friday evening, Sept. 13th.

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Record, Aug. 31: GRAIN AND FLOUR TRADE.—Grain is coming in quite brisk now, notwithstanding the low price ruling, and if it should continue another week or two, the numerous store houses of the Ophir Mills will be filled to overflowing. The price paid here for wheat is \$1.30@1.32½ per cwt. At Chico, along the line of the monopoly's railroad, the price rules as low as \$1.12@1.15, while the San Francisco quotation is \$1.45@1.50. Our producers are thus taxed 38 cents per cwt. on their grain, by the monopoly's 30 cents for freight, \$2.50 for loading each car, and additional wharfage and buyer's commission. Flour is selling on time to the trade at \$2.30. The present indications of wet weather will undoubtedly cause a large amount of grain to seek a market.

ALMOST A RAIN.—Portentous clouds have overshadowed the heavens for a day or two, indicating early rains. On Thursday morning we had a slight sprinkle, the first for over three months, and on Friday morning laggards in dormitories were aroused at about six o'clock by rain pattering on their roofs. It was not sufficient to lay the dust, but was, nevertheless, a welcome, old and strangely familiar sound.

CONTRA COSTA.

Gazette, Aug. 31: A SPRINKLE.—A good portion of the week the sky has been covered with water-charged clouds that looked ready to drop rain, and Thursday, about noon, they gave us a light sprinkle that left its marks in the dust. The sky is still overspread with these laden huge water-carriers likely at any moment to drop a portion of their freight.

SALE AND EXCHANGE.—To a larger extent than ever before, it is expected that the stock breeders of the county will this year improve the opportunity which the Annual Fair offers, for the sale and exchange of propagating stock; and there ought to be a large show there of fine bulls, rams and boars, as well as of stallions.

SHOW THEM.—There ought to be a good show at our approaching Fair, of last year's dried, preserved, and canned fruits, jellies, pickles, and cured meats, for judgment of keeping qualities; and, since many people, within a year or two past, have begun to make raisins it would be very gratifying to find some of the samples on exhibition.

NAPA.

Register, Aug. 31: MOUNT HOPE RANCH.—The matter of farming is now brought before our readers more directly than before. Everything tending to give our farmers a better knowledge of pursuits or industries whereby they may make labor more profitable, is eagerly sought. We have the following facts in regard to cattle raising, from the party, Mr. J. W. Barry. His success is unusual. In 1866 he went on Mount Hope Ranch, Conn Valley, received nine cows and thirteen heifers from Mr. D. Hudson to keep on shares. In five years he sold \$1,167 worth of stock, and had ninety-six head left, to divide between himself and Mr. Hudson, besides having lost two head of the old stock. During the five years he got from one cow, sixteen calves. He thinks cattle raising can be made very profitable, if proper care and energy are observed.

LARGE WAREHOUSES.—Work is progressing rapidly on the large warehouse in course of erection at Vallejo, by the Land Improvement Association. It will be a great addition to the business facilities of the town, when completed. Starr Brothers & Campbell have also commenced the erection of a large and commodious warehouse for storage. The warehouse will have the capacity of 20,000 tons.

SAN JOAQUIN.

Independent Aug. 31: FILLING UP.—We notice that the various grain warehouses about town are being rapidly filled with wheat, which is being stored by the farmers, on account of the present low price, and also the utter impossibility of removing it from the State before the commencement of the rainy season. The demand for storage was never so great as this season, and several new warehouses are now in process of construction to meet the pressing wants of our farmers. It is probable that with increased accommodations more of the crop of this valley would this year have found its way to market via Stockton. The scarcity of ships to take it away from the Oakland wharf, with the present limited accommodations of the railroad company at that point for unloading cars, has greatly retarded the movement of grain by rail to that point. It is very evident that every effort will have to be made by our farmers and grain dealers to provide storage for the present crop. Unless there should be a greater number of vessels arriving at San Francisco, than there is at present any reason to expect, the surplus wheat of this State cannot be sent to market during the coming ten months.

PRICE OF WHEAT.—The highest price quoted for shipping yesterday was \$1.42½, although as high as \$1.45 has lately been paid for choice milling.

WHEAT is rapidly accumulating on the new wharf on the north side of Stockton Slough. Teams now prefer that side of the channel.

POULTRY FROM IOWA.—One hundred dozen of large, plump, baryard fowls, shipped from Iowa, have arrived in good condition. A number of these fowls were purchased in this city yesterday by Mr. Shaw, poultry dealer. The enterprising young man who conceived the idea of furnishing the people of this State with Eastern fowls, cleared \$250 in addition to his

own passage by the venture. There seems to be something radically wrong with the system of rural economy in our own State, when fowls can be brought two thousand miles and sold here at a profit.

SANTA CRUZ.

Sentinel, August 31: MAGNOLIA BLOSSOM.—Yesterday we were shown by Mr. Henry Withington a magnificent full-blown magnolia (*grandi flora*) flower, with the leaves surrounding it. The blossom is about the size of a large teacup, very white, with a chromatella tinge in the center. This flower is very fragrant, one bloom being sufficient to scent a large room. This is the first magnolia flower we have seen on the Pacific Coast, and was grown in one of the fine gardens of San José. It may be seen at Briody's saloon, and those curious in such matters or who wish to see the Queen of the floral world should go and see it. It is a rare curiosity and has a National reputation, founded in Southern history, being emblematical of South Carolina, commonly called the Magnolia State.

HOOP POLE-KNIFE.—Mr. James King has invented a peculiar hoop-pole knife, double-edged, to cut and trim the hazel wands, which will enable him to cut twice as many as by the ordinary process in a day.

TULARE.

Times, Aug. 24: Industrial prospects in town and county are much brighter than at any time during the present season. The farmers have harvested bountiful crops, and, although the price obtained for grain is not very encouraging just now, the farmers as a class are prospering. They nearly all own more or less stock, and the fine range has placed this in the best condition for sale. Those that own sheep have reaped the profits of the unexampled high rates received for the last clip of wool. The railroad running through our county has placed us within easy and quick communication with all parts of the State. Population is coming in at a healthy rate and our vacant lands are being settled up.

As far as Visalia, our county town is concerned, the prospect is particularly encouraging. Her business men are displaying great enterprise and energy in furthering her interests, and the branch railroad which all recognize as a necessity, and which will remove the charge of isolation, made against us, since the railroad passed some six miles away to the westward, will doubtless be built at once. Before many months the whistle of the locomotive will be heard in Visalia and our town will, as the centre and focal point of business and population in the Tulare Valley, continue to grow and develop in proportion to the immense resources which pay her tribute.

YUBA.

Appeal, Sept. 1st: WOOL.—The wool-growers have commenced securing their fall clip, and as far as reported it is in far better condition than was the clip of last fall. We are glad to notice this change, for the reason that there is evidence in it that the wool-growers are becoming aware of the fact that it will not pay to raise a poor quality of wool. In proof of this we have only to cite the fact that the second quality of California wools have been during the season, a drag in the Eastern market, and sold only at rates ruinous to the shippers. This is entirely owing to the burry, foul and dirty condition of the wool, coupled with its poor quality as regards the grade. A continuation of this state of affairs can have but one tendency, and that is to ruin the market for California wools of other than first grades, and even seriously effect those.

OREGON.

Willamette Farmer, August 31: The time was, a score of years ago, when the Willamette valley was Oregon. By this we mean to say that the valleys lying between the Cascade and coast ranges have formed the staple upon which descriptions were written, and it was not easy to overdraw them, for we believe that our western valleys, even with the plethora of rain in winter, and a chance for a three month's absence of rain during the Summer, come as near perfection, all things considered, as can be expected on this world. But now these valleys are claimed and occupied, and held at a reasonable price per acre as improved farms. The man with small means has to find land for pre-emption in the foot-hills along the coast, or on the east of the Cascades, among the smaller valleys, which are found along its streams.

Perhaps too much cannot be easily said in favor of Oregon, if said judiciously. There is a wide extent of unsettled country, and the extent of territory in our State is immense, but part of this extent, and no inconsiderable part either, consists of wide-spread mountain ranges, and within our State is also considerable of sage brush desert.

There is room enough and to spare, land enough, and good land too, for all who choose to come, and we can promise them that they can do well here, but the trouble is that descriptions of our finest valley lands excite hopes that cannot be realized unless the new comers have means to buy a valley farm. Those do Oregon harm who write as if the whole State was like this valley. We can do well enough and tell the plain truth, and in the end the truth pays the best. We need to encourage immigration with cautious and truthful statements; it is to the interest of some to work up sensational reports for or against Oregon, but it is the interest of Oregon itself to have a statement made to the world descriptive of every section, detailing the amount of settlement, the land, etc.

The Australian Harvester.

This machine differs in construction from anything before introduced into California. As it has neither reel nor sicklebar, its operation is necessarily more simple and its draft less than in any other in which these are used, and the cylinder being fed with a regularity which it is impossible for manual labor to imitate, also lessens in a great degree the number of horses required to work it.

Whilst the machine is simpler in its construction and operation than any before introduced, the work done is excellent, and admitted by almost all who have seen it, to surpass that performed by ordinary machinery in use.

When we consider the number of handlings the grain has to undergo by the ordinary process, from the header to the wagon, the stack, the thrasher, and the sack, and the loss at each operation—whilst in this the whole process is confined to the one machine—it will be evident that the new harvester has every advantage on its side in regard to saving grain.

But the saving of labor effected is one of its most extraordinary advantages; consisting upon competent authority to be at least fifty per cent. Four horses appeared to work it easily at the last public trial of the machine and, therefore, we are fully justified in stating that six horses will work it in any crop, and two men only being required, with the above horses (as guaranteed by the inventor and maker) to cut ten acres per day or about one acre an hour. The immense saving to those who have not seen it work is a simple matter of calculation.

We have personally seen the Australian Harvester in operation in Livermore Valley and therefore know of what we speak, as regards its unequalled merit as a harvester, thrasher and cleaner at one and the same operation.

Testimonials.

LIVERMORE, August 8th, 1872.

MR. TAYLOR, Dear Sir:—I think the Australian Harvester a machine which demands the attention of our farmers on this coast. I am pleased with its work, and believe it will be the most economical and labor-saving machine for us.

The work is done in a workman-like manner, the grain is cut, threshed, and sacked in one operation, clean and ready for market. I would further state that I think the Australian Harvester cleans better than my Russell Separator, and my work is called about the best in this valley.

MARTIN MENDENHALL.

LIVERMORE, August 8th, 1872.

MESSRS. ADAMSON & TAYLOR.—I fully endorse Mr. Mendenhall's opinion, and would add that the cleaning done by the Australian Harvester excels anything I have seen exhibited in San Francisco, as samples of best cleaned wheat. The machine is compact and strongly built, and I believe many thousands will be sold in Cal.

W. W. WYNN.

To MESSRS. ADAMSON & TAYLOR:—Having been present at the public trial of your harvester, at Mr. Wynn's, near Livermore, we were much pleased with its operations. It will save at least half the expense in harvesting. We consider the machine admirably adapted to, and will supply a want which has been long felt in this country.

GEORGE MAY.
T. M. KIERNAN.
L. BLANCO.

LIVERMORE, August 19th, 1872.

MESSRS. ADAMSON & TAYLOR, Gentlemen:—Having seen your Australian Harvester at work I consider it merits the attention of farmers. It threshes and cleans equal to our best machinery, and is well adapted to a large portion of California, as it requires only two men and six horses to work it. (It worked well with four.) It will effect a saving of fifty per cent. in harvesting.

ALEXANDER ESDUN.

LIVERMORE, August 15th, 1872.

Having seen Messrs. Adamson & Taylor's new harvester at work near Livermore. I can say I think it a success. It threshes and cleans as well as any machine I have ever seen.

I. J. TRUE.

PLATNSBERG, MERCED Co., July 16th, 1872.

This is to certify that Messrs. Adamson & Taylor have for some time been running their harvester successfully on our ranch, near Platnsberg. The machine is of novel construction, as it strips the heads with a comb without reel or knife, and the work of cutting, threshing and sacking is done in one operation. It does as good work as our Pitts Thresher. It is a machine that I can recommend to farmers.

C. APPELGARTH.

SANTA CLARA VALLEY FAIR.—The annual fair of the agricultural society now being held at San José is a grand success, eclipsing all former exhibitions. Our report is received just too late for this issue. It will appear next week.

HOME AND FARM.

Farm House Chat.

[BY MARY MOUNTAIN.]

After preaching so long it may be well to tell a little story of what some farmers are doing in the way of social and musical improvement. So I begin with

Our Jubilee at Springvale Farm.

The day was perfect as it could be—clear, cool and sparkling. Long tables were arranged under the great oaks in the door-yard, with plenty of benches, boxes and boards for seats.

If there had been a "stand" for the preacher you would have said it was all correct for a camp-meeting. At 10 o'clock they began to arrive, wagon-loads of singers, and others who came to listen and enjoy the day. All had pleasant words to exchange as they shook off dust and refreshed with water and towels.

There was hearty greetings for our teacher, and great delight among the boys when the big bass-viol was laid out and overhauled, growling and bursting its strings in the usual musical way.

Just before noon all was ready, and you "sitting aloft," might have heard the stately, solemn chords of old Agawam, filling the astonished valley. From the lips of a skilled musician the sweet notes of a flute helped the soprano; the surly violinello held us all to time as we passed on to familiar strains in Coronation, Greenville, Boylston, Rockingham, and other prime old favorites.

But singing in the open air is hungry work, and a prominent "basso" sniffed so wistfully hunchward that with one consent we folded our wings of melody and fluttered among the lesser harmonies of cups, saucers and teaspoons. A very well executed staccato movement brought boxes and baskets to the front, and a rapid but skilled crescendo loaded the tables. Such generous profusion of loaves, joints, cakes, pies, chickens, but you all know what farmer's wives can do when they do their best, and there is always sure to be enough for all, enough for many more. Hot coffee and tea, with plenty of cream and sugar formed a sweet and gliding diminuendo.

Quickly and quietly the fragments were removed and order restored along the tables; but a racing breeze from the Pacific sent us indoors for the final musical session. Here we were assisted by the parlor organ, making, as our teacher said, "almost a full band;" and the singing went on with the usual enthusiasm until 4 o'clock when there was a general movement to visit

The Ruins.

This once famous resort is at present—thanks to vandalism—in a very "ruinous" condition, but, only a short walk from the house, it never fails to attract the curiosity of our visitors.

Did the solemn old sand-hill ever look so pretty before? Trimmed all the way up with blooming girls—and above, beyond and crowning the very top of the gray old mystery fluttered the gay muslins and ribbons of modern matrons and maids; while the men peered curiously among the queer rocks and shook their heads as dubiously as thousands of others have shaken when contemplating these odd and unaccountable formations.

Then came leave-takings, mingled with hopes of some future reunion; and before sunset the rattle of the last wagon echoed among the hills and again over our valley brooded solitude, as if this were "the forest primeval."

Does some curious reader ask what style of character and culture is found among these farmers who live "scattered about" in the Santa Cruz mountains? As in most California neighborhoods that cover an area of 20 or more square miles, we find representatives from many nations, States and Territories.

A community of travelers, each with a full and peculiar personal experience, and furnishing an average of intelligence and knowledge of the world that is really surprising. I try to imagine a collection of farmers as I remember them in old Vermont, and contrasting with these I find a puzzling problem of simple and complex differences, that may be partly solved by remembering that the former were farmers for life, always had been, always would be; while these are farmers to-day, but have been and may be again "into" all sorts of things. A complete list of the occupations and enterprises that have varied these lives would be an agricultural (?) curiosity, well worthy the consideration of those who take a merely cursory view of rural affairs.

Some lady readers would find a short way out of my puzzle by saying, "tell us rather how they were dressed." Never having taken a degree in the "Jenkins" school, I am wholly incompetent upon such topics; and all my neighbors possess sufficient delicacy and refinement to shrink from such publication of "toggery" as distinguishes the annals of fashionable life. Suffice it to say that the ladies—and upon my word the gentleman too—wore a pleasing assortment of smiles; a fine, natural color upon the cheeks, also carried pretty generally a merry twinkle in the eye; which in former years was considered a very sinful ornament for Sabbath day use. "What! do you have

Singing Picnics on Sunday?"

Yes, the first was held at the house of our teacher, the second I have just told you about;

and all of our singing schools have been on the same good day. Right in the midst of last winter's storms we heard that Vine Hill would unite with Scott's Valley District if all would agree to meet Sunday afternoon at the respective school-houses, turn and turn about. "Why not take a week-day evening in the good old way?" Remember, if you can, our "magnificent distances" from each other; school houses four miles apart, and some of us living from two to three miles beyond the school-houses. Roads at that time difficult and dangerous even in daylight—always severely left alone after dark. Last, but not least, our plucky teacher, Mr. Newell, lives miles away among rugged mountains whose winter torrents had their own mad way with bridges, and he could only reach us at first by walking out over trails that most men would decline to investigate at any price.

But the energy that could bring him to us was a warrant for the good results that followed. A thorough-going pupil of Dr. Lowell Mason and Geo. J. Webb, he could hardly have trained us with more careful zeal if we had been stars of Boston Jubilee magnitude.

As for us scholars we offered material sufficiently raw, but not uniformly young and plastic; for we all took hold—fathers, mothers, children and babies—beating time, la-la-ing and often making the most comical blunders.

One great trouble at first was our lack of discipline. Living so lonely—meeting so seldom—we (women) were just wild to do a little talking along with the music; and our pianissimo items slipped in edgewise, had all the peculiar flavor of forbidden fruit. But our manners have improved with our music—thanks to the unfailing good humor and tact of the genial old master—and another term might convert us into models of dignity and decorum. To be converted from strangers into neighbors and friends is an excellent thing and leads to a more general interest in schools, school-houses, etc., of which we may talk by and by. Dr. Holland has said that

"A Long Road

Is the surest bar to a neighborly intercourse;" but we are getting over the bars in a way that is truly encouraging. How pleasant to have neighbors drive up almost any day except (blue Monday) and call out cheerily—"come on with your brown bread and butter and take lunch with us out in the woods." Away we go without any fuss, and what an impromptu good time it is! Now, my sister farmers, is not this "the way we long have sought, and mourned because we found it not?" Our "good times" must come to us easily and not bring additional millstones of labor to hang about our necks—most come plainly in such calm and common sense as will not startle us into misery about fashionable toilets and fluted Dolly Vardens. To be useful and worthy of our high calling takes nearly all our time. To be ornamental in this fashion-frantic age, would require more than all of our time and a great deal of money. So we must plan for simple pleasures that claim no sort of relationship with the latest fashion-plates; and all hints in this direction will be received with applause.

Reclamation of Salt Marshes.

Around the Bay of San Francisco there are thousands of acres of land, now almost, if not entirely worthless, which might, with a comparatively small outlay, be made of great value. Let us suggest a plan: Run a levee on the side next the water, say two feet above high tide, stopping the salt water entirely out. The same levee would, of course, hold the water which runs down the surrounding hills in a basin, and thus cover the land with it. To cover this land, then, with a good soil, we have only to make this water thick with dirt from the hills. In winter, when streams are running in from the hills in perfect torrents, it would be easy to get several hundred feet of hydraulic pressure, which, put through one of the recently invented "Monitor" nozzles, could be made to cover hundreds of acres in a single wet season to a sufficient depth to make of it fine land. If the levee were two feet high we would fix with piling and boards about eighteen inches high a place for the fresh water, after the mud had settled, to escape. This, of course, would be placed at a point as far as possible from the debouchment of the muddy water. This is an outline of our plan. We say further to owners of this class of land, that we have examined the subject enough to undertake the reclamation, by contract.—*Green's Land Paper.*

TANSY AND PEACHES.—A writer in a New York paper recommends sowing tansy about the roots of peach trees as a means of preserving them. He says he once knew a large peach tree which was more than forty years old, while several generations of smaller trees in the same soil had passed away. This led to an examination, and a bed of tansy was discovered about the trunk. It was naturally inferred that the preservation of this tree to such a green old age was attributable to the presence of this plant. It was decided to try the experiment on others, and accordingly a few of the roots were placed about each of the other trees on the premises, some of which gave signs of decay. Not only has it preserved them for several years, but renovated those that were unsound. The odor of this plant he says, doubtless keeps off the insect enemies of this kind of tree, and it would have the same effect on other trees, as the plum, apple and pear, as well as ornamental trees.

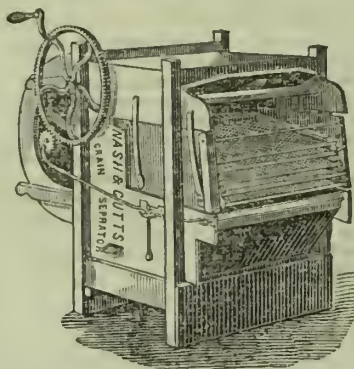
Nash and Cutts' Grain Separator.

To secure to the farmer the highest prices for his grains, it is of the utmost importance that he puts them upon the market in perfect condition, free from all admixture of other grains or foul seeds. Nothing less therefore than the best known machines for separating grains ought to receive the least consideration, for it costs no more to have a good than a poor one, and takes no more power to run it.

The Nash & Cutts' grain separator, made by Nash, Miller & Co., 264 K. street, Sacramento, as per advertisement, is the machine that in all respects just "fills the bill." It is light and substantial, the machinery is simple and perfect in all its parts, and can only get out of order by neglect or mismanagement; it operates with great rapidity and with entire satisfaction.

All kinds of grains are separated and cleaned in the most perfect manner and it has taken the lead in the great grain markets of the northwest. The Chicago Board of Trade offered a premium of fifty dollars for the best grain separator, and after a trial of 13 different mills, awarded the premium to the Nash and Cutts' machine, and gave their certificate to that effect October 12th, 1869.

Since that time, they have made several improvements on the machines then used, adding greatly to their cleaning qualities, in separating barley, smut, chaff and all other foul seeds



from wheat, as well as oats from barley; it also separates morning-glory seed from alfalfa and will thoroughly clean all manner of grass seed, mustard or grain. To sum up its several merits would be to say that it is rapid and perfect in its operation, simple and durable in construction, and cheap.

THE MAINE FARMER says: "We need again to urge farmers to have greater regard for their personal health and comfort than is generally the case. We know just how hard farmers have to work, and how pressing are the demands of the present season. But nothing is gained by hard and long continued application. Work in the morning and at night, and if possible enjoy a long "nooning"—it will do you no harm. Bathe frequently, and never repose at night in the inner clothing in which you have worked during the day. Have a light, clean night shirt, to take the place of that full of perspiration and dust, and enjoy to its fullest extent the refreshing influences of the night's rest. Eat wholesome and well prepared food, but avoid an excessive use of fresh meats. Drink sparingly of cold water during hot weather—great injury often results from this cause.

BEAUTIFUL HEMLOCKS.—The hemlock is susceptible of a degree of pruning for forming the young trees into a beautiful and graceful form, possessed by few if any other evergreens. We lately saw on the nursery grounds of Smith, Clark & Powell, of Syracuse, blocks of young hemlocks, two or three feet high, in the form of low pyramids, compact in growth, and with drooping growth over the whole surface, which could scarcely be excelled for their pleasing appearance. The straggling growth which the young trees assume when overshadowed by large trees in the woods, conveys no impression of the improvement which may be effected by culture in open ground, in connection with suitable pruning back.

THE CANADA THISTLE.—It is stated, loses its vitality south of latitude forty degrees. Dr. Hull stated last winter that he had attempted to grow it at Alton, but with indifferent success; it could be grown and kept alive if care was taken with the beds, say as much care as is usually given to asparagus. M. L. Dunlap, *Rural*, stated at Champaign that little danger is to be apprehended from the spread of the Canada thistle in Central Illinois. The cotton and other annual thistles are very abundant here, especially on new lands, but they are regarded as among our most harmless weeds.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING JULY 30TH, 1872.*

BEER-FAUCET.—Patrick Francis Donnelly, San Francisco, Cal.

RAILROAD TIE.—John L. Boone, S. F., Cal.

DESIGN.

SATCHEL.—James H. Hitchings, S. F., Cal.

TRADE-MARK.

GLOVES.—P. and F. G. Conklin, S. F., Cal.

FOR WEEK ENDING AUGUST 6TH, 1872.

PUPPET-VALVE.—Otis Adams, S. F., Cal.

MATERIAL FOR STUFFING MATTRESSES, ETC.—Robert J. Kellett, S. F., Cal.

MATERIAL FOR FILLING MATTRESSES, ETC.—William J. Woodley S. F., Cal.

DUMPING-CAR.—James M. Thompson, Quincy, Cal.

DUMPING-CAR.—James M. Thompson, Quincy, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Dairies on Lake Tahoe.

The value of mountain meadows for dairy purposes is being more appreciated each year, and such land is rapidly increasing in value, and some of the finest dairies in the State are located at Lake Tahoe, and some of the sweetest and firmest butter made on the coast comes from that region. At one end of the lake alone—at Lake Valley—there are now fifteen dairies, on each of which there is an average of 60 milch cows and 40 head of young stock. The milk of each of the former yields about 100 pounds of butter for the season, which begins in June and ends about the first of November. The butter brings an average of 40 cents a pound. The most of it is sent to the Virginia City and Carson markets. Each dairy has an average of 500 acres of pasturage. The land is now worth \$10 to \$20 an acre. That in Lake Valley yields 1½ to 2 tons of wild hay to the acre or 2½ tons of timothy.

Two tons of hay per acre is considered a good yield on English dairy land or permanent pastures. It will therefore be seen that the yield from the meadows of Lake Valley is large. Five times the present number of cows could be pastured there with a little extra trouble and expense. It is only within a few years that high mountain lands have been used for dairy purposes. Some of this land could not be purchased now for less than \$50 an acre, and within a short time all of the best located tracts of it will be worth that price. The *Bulletin*, nearly ten years ago, began to call attention to the value of these summit valleys extending all along the Sierra from the neighborhood of the lakes on the Oregon border to the headwaters of the Tuolumne, a distance of four hundred miles, and comprising altogether a very large area. They have been sparsely settled since then, but still afford a wide field for enterprise. *Bulletin.*

RELATION BETWEEN TIME OF GROWTH, OF SHEARING AND THE WEIGHT OF WOOL.—

A Saxon stock-raiser writes: In 1871 I sheared my Merino flock, after several weeks pasturage, at the beginning of May and obtained an average of 8.1 lb. of unwashed wool of 11 months' growth. There were 550 mothers, 280 firstlings and 350 yearlings; to the last, therefore, we can reckon not quite 9 lbs. each. This year I put 100 yearling wethers to stall-feed without reference to wool, took them off on the 1st of December, and had them shorn in the beginning of January. This result was exactly 7.9 lbs. per head of wool of only 8 months' growth. This is equal to nearly 11 lbs. for 11 months. This leads to the question whether the shearing weight of the unwashed wool decreases so notably by spring pasturage or increases so little in the late months of stall-feeding; if the last, how far is this true for the cleaned wool? Finally, for the practical side, what is the rational relation of value for uncleaned wool shorn before pasturing as compared with that obtained after several weeks of pasturage?

MAGNETIC STORMS have frequently interfered so seriously with the working of the railway telegraphs in England, that before their action was understood the superintendents on the lines repeatedly reported that some one had been playing tricks with the instruments and prevented their working.

JOSEPH HARRIS suggests the more general growing of white mustard and rape for feeding purposes.

USEFUL INFORMATION.

Bread from Wood.

Professor Liebig says: A new and peculiar process of vegetation ensues in all perennial plants, such as shrubs, fruit and forest trees, after the complete maturity of their fruit. The stem of annual plants at this period of their growth becomes woody, and their leaves change in color. The leaves of trees and shrubs, on the contrary, remain in activity until the commencement of the winter. The formation of the layers of wood progresses, the wood becomes harder and more solid, but after August the plants form no more wood, all the absorbed carbonic acid is employed for the production of nutritive matter for the following year; instead of woody fiber, starch is formed, and is diffused through every part of the plant by the autumnal sap. According to the observations of M. Heyer, the starch thus deposited in the body of the tree can be recognized in its known form by the aid of a good microscope. The barks of several aspens and pine-trees contain so much of this substance that it can be extracted from them as from potatoes by trituration with water. It exists also in the roots and other parts of perennial plants to such an extent as to have been employed in the preparation of bread in famines. In illustration of which we quote the following directions, given by Professor Autenrieth for preparing a palatable and nutritious bread from the beech and other woods destitute of turpentine. Everything soluble in water is first removed by frequent maceration and boiling; the wood is then to be reduced to a minute state of division, not merely into fine fibers, but actual powder; and after being repeatedly subjected to heat in an oven, is ground in the usual manner of corn. Wood thus prepared, according to the author, acquires the smell and taste of corn flour. It is, however, never quite white. It agrees with corn flour in not fermenting without the addition of leaven, and in this case some leaven of corn flour is found to answer best. With this it makes a perfectly uniform and spongy bread; and, when it is thoroughly baked and has much crust, it has a much better taste of bread than what in time of scarcity is prepared from the bran and husks of corn. Wood flour also, boiled in water, forms a thick, tough, trembling jelly, which is very nutritious.

How to Preserve a Carriage.

A carriage should be kept in an airy, dry coach-house, with a moderate amount of light, otherwise the colors will be destroyed. There should be no communication between the stables and the coach-house. The manure heap or pit should also be kept as far away as possible. Ammonia cracks varnish and fades the colors both of painting and lining. A carriage should never, under any circumstances, be put away dirty. In washing a carriage keep out of the sun, and have the lever end of the "setts," covered with leather. Use plenty of water, which apply (where practicable) with a hose or syringe, taking great care that the water is not driven into the body to the injury of the lining. When forced water is not attainable, use for the body a large, soft sponge. This, when saturated, squeeze over the panels, and by the flow down of the water the dirt will soften and harmlessly run off, then finish with a soft chamois leather and old silk handkerchief. The same remarks apply to the underworks and wheels, except that when the mud is well soaked, a soft mop, free from any hard substance in the head, may be used. Never use a "spoke-brush," which, in conjunction with grit from the road, acts like sand-paper on the varnish, scratching it, and, of course, effectually removing all gloss. Never allow water to dry itself on the carriage, as it invariably leaves stains.—*English paper.*

Instinct of Turtles.

Audubon, the naturalist, stated that at certain places on the coast of Florida sea turtles, those huge, stolid looking reptiles on which aldermen are fed at the expense of tax payers possess an extraordinary faculty of finding places. Working their way up out of the reach of tide water with their flippers, quite a deep hole is excavated, in which a batch of eggs is deposited, and then carefully covered up. On reaching the water they not unfrequently swim three hundred miles out at sea, foraging for appropriate food. When another batch of eggs is developed, after a lapse of about fourteen days, they will return unerring in a direct line, even in the darkest night, and visit the buried eggs. Removing the sand, more are deposited and secured. Away they go again as before. They know instinctively the day and hour when the young brood, incubated by solar rays, will break the shell, and are promptly at the spot to liberate them from their prison. As soon as fairly out of the hole, the mother turtle leads them down the bank to the waves, and there ends her parental solicitude and maternal duties.

Sterility and Depletion.

Regarding this subject Mr. Howorth remarks: The gardener who desires his plants to blossom and bear fruit takes care that they shall avoid a vigorous growth. He knows that this will inevitably make them sterile; that either his trees will only bear distorted flowers, that fail to produce seed, or that they will bear no blossoms at all. In order to procure flowers and fruit he checks the growth and vigor of the plant by pruning its roots or branches, depriving it of food, and, if he have a stubborn pear or peach tree which has long refused to bear fruit, he adopts the hazardous but often most successful plan of ringing its bark.

Turning to the animal kingdom, the rule is no less true, "Fat hens won't lay" is an old fragment of philosophy. The breeder of sheep, pigs, and cattle knows very well that if his ewes and sows and cows are not kept lean they will not breed; and as a startling example it is stated that to induce Alderney cows, which are bad breeders, to be fertile, they are actually bled, and so sufficiently reduced in condition.

In like manner generous diet and good living produce their effect on human beings. In countries where flesh and strong food is the ordinary diet, the population is thin and the increase small; while where fish, vegetables, and weak food are used, the population is large and the increase rapid. Everywhere the rich, luxurious, well-fed classes are diminishing in numbers or are stationary; while the poor, badly-fed, hard-worked are very prolific. As with the plant, the animal, and the man, so is it with the nation. It was luxury and not the barbarians that sapped the power and wrought the destruction of the Roman Empire; and as plants, animals, and even human beings are stimulated by a course of depletion to increased fertility, so, according to some authorities, great wars have a similar effect on nations, and by their depleting action stimulate them to increased activity and renewed vigor.

Difference in the Value of Diamonds.

While many can approximate the value of a diamond, few can appreciate its exact worth. All know it to be the most expensive of all substances (excepting rubies of rare color and size), from its beauty, rarity, and indestructibility. The diamond which first decked some fabulous Indian god would blaze to-day with all its fire if adorning some fair American woman. Not a single sparkle has been dimmed, nor an atom of its weight lost. Where the real difficulty exists is to make the public understand the comparative merits of various gems. In the jeweler's tray many stones may be exhibited. They may be all of good quality, but there is a decided choice. This one may have size and purity of color, yet marred by a single flaw; that one, limpidity, without a flaw, yet defective in shape; while a third, even smaller than the other two, may unite every desirable quality, be in fact almost faultless. Combining, then, every excellence within itself, its value is largely enhanced. The comparison between the price paid for a horse and a diamond is not an inapt one. An animal possessing beauty, health, speed, and docility, commands a price far above another having all these qualities save one. It is precisely the same case with a diamond. A stone approaching perfection possesses a value infinitely above one with a single depreciating quality.

ELECTRICAL WONDERS.—By the mirror galvanometer of Sir William Thomson, which was of the utmost importance in securing the success of the Atlantic Cable, a ray of light is reflected from a minute mirror that is attached to a magnetic needle. When the electric current passes the magnet is deflected, and the movement of the reflected spot of light over a scale indicates the resistance to the passage of the current. The united weight of mirror and magnet is three-quarters of a grain.

During the experiments with the Atlantic Telegraph both cables were connected at the American end, giving a circuit of more than four thousand miles, yet a current passed through the whole distance in less time than a person could pass across the small room in which the experiment was made—and, most wonderful of all, the battery that accomplished this result was contained in a lady's silver thimble.

WOOD CARVING BY MACHINERY.—A process of wood carving by machinery has lately been invented, whereby, it is said, any desired pattern is impressed upon the surface with a delicacy and effect that compare favorably with the work of skilled carvers, and at a cost almost nominal. The process is exceedingly rapid, as ten superficial feet of finished work can be produced per second.

BALTIMORE was the first American city to introduce gas. Boston was only a year behind it, having gas in 1822. New York did not follow these examples until five or six years afterward.

The oldest and largest chain bridge in the world is said to be that at Kingstung, in China, where it forms a safe and perfect road from the top of one lofty mountain to another.

GOOD HEALTH.

Bone Felon Arrested by Congelation.

Dr. James B. Walker, of St. Louis, (Mo.), says in the *Medical Archives*: Not long since I was consulted by a young lady who was suffering from an incipient felon. The distinguishing characteristics of the painful affection were already manifest—pain, throbbing, some tumefaction, and the nervous excitement, indicated plainly what was in advance unless the inflammation was arrested; and the command was, arrest it at all hazards.

This starting-point had been two days previous to her application of treatment. I could think of nothing offering such a prospect of success as cold, as low as the freezing point. Adding equal parts of snow and salt in a tumbler, I placed the finger, it being the middle one, in the freezing mixture. For a few seconds there was an increase of the sensibility of the part, and it was with difficulty I could persuade her to hold her finger in the mixture. By degrees the pain subsided, and at the end of two minutes perfect insensibility had followed. I removed the finger; and after a few minutes the sensibility returned, and with it came the pain, throbbing, etc. The application was renewed, and the pain ceased and insensibility ensued. This was repeated as often as the pain returned, and in about two hours, alternating the application and removal, there was no return of the painful sensations, and the difficulty entirely ceased, and there was no felon. The induration remained several days, and the skin gradually exfoliated.

Another Treatment.

The Nashville *Journal of Medicine* says:—It is well known by physicians that pressure causes absorption, and in view of this fact, ten years ago I adopted the plan of applying several coatings of collodion over the finger, or place where the pain is felt, on its first appearance. On drying, the collodion contracts with an even pressure, and if kept on for twenty-four hours, the symptoms will usually entirely disappear. Of late, I have been in the habit of soaking the affected part in quite a strong solution of carbolic acid for a few minutes before applying the collodion. The pain for some hours will be quite severe, but an anodyne will afford relief.

Sick Headache.

The true cause of sick headache lies deep in the patient's idiosyncrasy, and is developed by a hundred different causes. The advice, then, to sufferers is to give as much tone as they can to their nerves by adopting all those methods which experience has shown to be good, and then avoid, so far as practicable, all those causes which are known to excite an attack. A writer in the *British Medical Journal* says:—"I need scarcely describe a sick headache—how one rises in the morning more dead than alive; perfectly unable to swallow the slightest particle of food, and often perhaps actually sick; how the head throbs, and the pain increased by the slightest movement; how speaking or doing is a burden beyond bearing; how one prays to be left alone in the utmost quiet, so that he may, if possible, sleep. To other persons the sufferer looks extremely ill, very pale, dark around the eyes, and with contracted pupil. To himself his head feels hot, and the application of cold most refreshing. The clamminess in the mouth, the nausea, and general gastric disturbances are secondary, and have no connection with any improper meal, and thus are in no way relieved by the too frequent and ignorantly administered purgative. This is not needed, and has no good result. The only remedies which are of any avail are those which act on the nervous system, such as hot tea and coffee; or, after the stomach is quieter, and there are urgent symptoms have passed off, a little wine or ammonia. If the headache take more the form of hemicrania, then remedies are occasionally useful, as the local application of the bisulphide of carbon, or galvanism, and internally the bromide of potassium. This is the only drug that I have really seen to be serviceable. Whilst the nausea exists and the worst symptoms prevail, even this remedy is of no avail.

IVY POISONING.—The best remedy for ivy poisoning is said to be sweet spirits of niter. Bathe the parts affected freely with this fluid three or four times during the day, and the next morning scarcely any trace of poison will be found. If the blisters be broken, so as to allow the niter to penetrate the cuticle, a single application will be sufficient. The spirits of niter may be prepared by dissolving one part of nitrous ether in eight parts of common alcohol.

CURE FOR CORNS.—The *Chemist and Druggist* prescribes as follows:—Bathe the feet well in warm water, then with a sharp instrument pare off as much of the corn as can be done without pain or causing it to bleed, and dress once a day, with the following salve:—

R Black oxyd of copper, gr. xv.
Lard, oz. ss. M.

An Important Medical Discovery.

It appears that an accident, as in many other discoveries, is about to render an important service in the cause of medicine, by which the eye will be able to locate many diseases, whose source and locality must now be determined by induction or inference rather than sight. It appears that Dr. Richardson, of London, while experimenting with electricity, about two years ago was surprised to find a portion of his hand so illuminated, as to become perfectly transparent. This fact, and also a similar experiment by Dr. Priestley, induced Dr. Thomas Nicholson, of New Orleans, not long since, to pursue the subject till he succeeded in completely illuminating the whole hand. From the result of these experiments it seems, that in order to illuminate the whole body it would only be necessary to increase the vividness of the calcium light used, and enlarge the magnifying lenses employed, so as to gain sufficient power. When all the internal organs of the human system are thus inspected by actual sight there will be no need of diagnosing a case to discover the cause or seat of a disease. In the case of wounds or internal bruises, the surgeon can determine at once the location of the bullet, or the condition of the part affected, also tumors, ulcers or any internal malady, as easily as can a housekeeper the displacement of an article of furniture, or an inkspot upon the carpet. It can be readily perceived, that this discovery may become an efficient aid to medical science, and an incalculable blessing to mankind.

COLORS AND HEALTH.—Through the *American Artisan*, we learn that a correspondent of the *Builder* makes statements, which, if not founded on imagination, are certainly highly important. He had occasion for several years to examine rooms occupied by young women in a manufacturing establishment, and he observed that while the workers in one room would be very cheerful and healthy, the occupants of a similar room, who were employed on the same kind of business, were all inclined to be melancholy, and complained of a pain in the forehead and eyes, and were often ill and unable to work. The only difference he could discover in the rooms was that the one occupied by the healthy workers was wholly white-washed, and that occupied by the melancholy workers was colored with yellow ochre. As soon as the difference struck him, he had the yellow ochre washed off the walls and then whitened. At once an improvement took place in the health and spirits of the occupants. He pursued his observations and experiments, not only in large manufactories, but also in small apartments and garrets, and he invariably found that the occupants of such apartments, when they were colored yellow or buff, were less healthy than their neighbor in whitened rooms, and that when the yellow hue disappeared the low spirits and ill health went with it.

PHOSPHATE CANDY.—The restoration of the phosphorus to bread, which has been removed in the bran, as so successfully accomplished in the Horstead baking powders, is well known both in this country and Europe. We now hear of a novel way of turning our national love of candy to similar benefit, by employing phosphorus instead of sulphuric acid in sour drops. Mr. Charles Allen, of the School of Mines of Columbia College, has invented a phosphated candy, which he prepares by combining one or more of the acids or salts of phosphorus with sugar, thus ingeniously presenting an acceptable form of assimilable phosphorus to those who need some repair of the nervous and brain forces. It is a pleasant way of taking phosphorus as a medicine, and has been deemed worthy of a patent.

TOBACCO SMOKE.—Vohl and Eulenburg have investigated the narcotic action of tobacco, especially examining the action of tobacco smoke. As the result of their analysis, they are led to the opinion that the disagreeable symptoms to the incipient smoker and the chronic affections produced by smoking, as well as the poisonous effects of tobacco smoke juice when swallowed, are due to the bases pyridine and picoline, and not to nicotine. They explain the fact that stronger tobacco can be smoked in cigars than in a pipe, by finding that more of the volatile bases are present in pipe smoke, more especially of the very volatile and stupefying pyridine; while in a cigar little pyridine and much collidine are formed.

SEXUALITY OF HEART DISEASE.—Dr. Richard Quain reports that enlargement of the heart, one of the most distressing and fatal diseases, is more than twice as frequent in males as in females, the precise proportion being 8 to 3. This remarkable liability to enlargement of a men's heart, as compared with those of women, is, he thinks, unquestionably due to the greater amount of work and anxiety which, under the present dispensation, falls upon man. Ladies may take this fact to heart, and reflect whether, in claiming the rights of women, they may not at the same time incur the risks of men and with them a new and unexpected form of disability.

GARGLE FOR SORE MOUTH.—Half a teacup of boneset tea; the same of tea made of the black haw. Use the bark of the root; a teacup of strong tea made of privet; a piece of alum the size of a nutmeg. Sweeten with honey.



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SAN FRANCISCO:

Saturday, Sept. 7, 1872.

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Cotton of 1872.

We have been shown a sample of cotton by Dr. Wm. L. Twichell, of this city, who received it from Byron Purinton, of Merced county. It was grown near Plainville in that county, upon land not alluvial, but on what would be called good wheat land, and without irrigation.

If succeeding years can show on a larger scale than the present, an equally fine growth with the present sample, then surely is California a cotton growing State. We are promised a further report of the cotton yield of Merced.

RAINFALL.—Just to make a note of the fact, by way of record for future reference, we make mention of a slight rainfall on Friday, August 30th, at San Francisco, and which seems to have extended pretty generally over the whole State, doing no damage and scarcely "laying the dust." Even the smallest rainfall at this season of the year is unusual, hence our note of the occurrence.

THE HORTICULTURAL FAIR.—The Hall continues to be daily and nightly thronged with visitors; from which we judge the enterprise to be a success financially. So far as a display of plants and flowers of exquisite beauty can make a fair a success, it is eminently all that could be desired. Therefore as a place in which to admire the beauties of Flora and Pomona, to enjoy the enlivening strains of voluptuous music or to admire the grotesque and strange make-up of otherwise beautiful and elegantly dressed women, it is unquestionably without a rival in the city.

Farmers' Clubs—Their Objects.

In addition to the impositions practiced upon the farmers by middle men, who crowd themselves in between the producer and consumer, and unnecessarily, and by every art in their power, increase the cost of all agricultural products as much as possible, while passing through their hands; we may mention another great wrong, the effect of which, particularly in this State, falls heavily upon the agriculturists. We refer to the additional

Rate of Interest

Which is charged upon all moneys loaned in the country, over and above the rate charged for money loaned in the large towns and cities. For many years the savings and other banks of the cities refused to loan money even upon real estate which was not located within the city; thus, with wonderful stupidity, refusing to assist in the development of the agricultural resources of the State upon which all other industries, and even the banking or money loaning business itself, depends for its continued and permanent prosperity. Time has shown them their mistake by cities being forced into unnatural growth and beyond the necessities of the country, and consequent depreciation of city property and want of city demand for money.

Being forced to keep their money laying in their vaults idle or seek loans in the country they adopt the latter; but make it a rule to require country borrowers to pay from an eighth to a quarter per cent. more per month than they ask on city loans. Thus still adhering to the suicidal policy of crippling the industry which lies at the foundation of the prosperity of all other industries and of the State.

This discrimination of the banks and moneyed men against the agricultural industries, is as unjust to the farmer as it is unwise in those who practice it. It induces or compels a forced system of cultivation without proper fertilization of the land. It prevents necessary improvements without which the country cannot possess the appearance or reality of thrift. It compels the farmer to sell his grain at whatever he can get for it, thus throwing him into the clutches of another class of sharpers.

The Grain Buyers,

Who conspire together to form rings and corners to catch the producer in a tight place and rob him of his crop—or, at least, of his legitimate profits thereon. It is a common remark in this country that the price of grain is kept down after each harvest until after the bulk of it has passed out of the hands of the producers, and then by combinations of the buyers, forced up to an illegitimate price, thus forcing from the consumers—the common laborers, mechanics and manufacturers of the State—an improper proportion of their wages and profits for the staple articles of life, and at the same time discouraging the introduction and success of manufacturing industries, upon which, and the additional consumers they would bring, the producers must depend for their home market—the most profitable and reliable market in any country.

It would seem as though we had named difficulties enough, with which farmers are beset, to arouse them to action—united action for the purpose of breaking the chain which binds them down, but there are still others, compared to which those enumerated are but trifles. Chief among these is the

Freight Monopoly.

The whole carrying trade of the State is now virtually in the hands of one company. Whether it shall cost the farmers of the State one-sixteenth, one-eighth, one-fourth or one-half the value of their crops to move them to market, is absolutely at the discretion of an organization which has absorbed all the railroads and all the steamboat routes of the State. This company has it in its power to-day to reduce the cost of putting the surplus products of the State on the wharves of our seaport towns and cities to the least possible figure, and thus spread prosperity and contentment all over the State and secure the good will of the entire producing classes, or it has the power temporarily to extort an unjust and unreasonable amount for the performance of this labor and thus oppress the agriculturists, drive prosperity and thrift from their doors, produce suffering and discontent throughout the land, and provoke the ill will and the combined opposition of the people who have this labor to give

and the freight to carry, and who, while acting as individuals have no influence or power; but who when forced to combine will have all the influence and all the power.

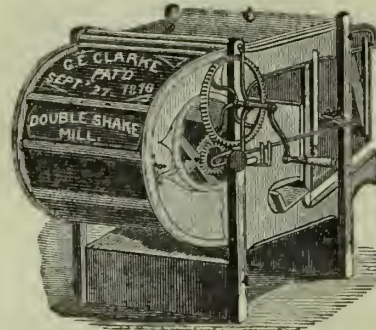
There is no proposition clearer, than that a liberal policy adopted and carried out by the capitalists, the produce dealers and grain buyers and freighting companies of the State towards the industrial classes will result in the mutual benefit of all, in the increased population and redoubled prosperity of the State. Equally clear is the other proposition that the opposite policy will secure the opposite effect and will form a combination of those industrial classes for their own protection.

The organization of the farmers' clubs throughout the State is one of the first fruits of this latter policy. It is an evidence that the farmers feel their wrongs and know and mean to apply the remedy. They have the power to regulate alike the rate of interest on money and the rate of freights on railroads. They have the power to dispense with all middle men, and by co-operative systems, to dispose of their own produce directly to the consumers free of all commissions and all unnecessary charges.

Clark's Patent Double-Shake Fan Mill.

Great trouble is oftentimes experienced by the farmers of California, in properly cleaning the wheat and other grains. Numerous contrivances have been invented for the purpose

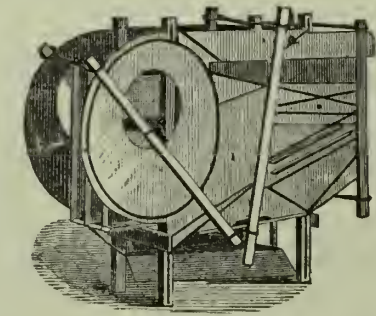
FIG. I.



of separating the chaff and other substances from the clear kernel of grain, and many of them have answered the purpose in a measure.

Among the latest and most approved of these machines is Clark's Patent Double-Shake Fan Mill, of which the engraving, figure 1, is a fair representation. This mill was pat-

FIG. II.



ented by G. E. Clark, of Racine, Wis., and is now manufactured by the Kenosha Fanning Mill Co., from which fact it is more familiarly known as the "Kenosha Fan Mill."

The principal feature of this mill is its improved "double shake," which imparts a quick tremulous motion to the shoe which carries the sieves; and for taking oats, chaff and chaff out of wheat, or cleaning small grains, seeds, etc., it is said, cannot be excelled.

The motion can be changed in an instant to a longer and slower movement for chaffing, or ordinary cleaning. The mill will also grade wheat, throwing the heavy wheat out on one side, and the lighter grades on the other. All of its working parts are substantial. The head is let in a groove in the sides of the mill, thereby imparting greater strength to the same; also rendering the head less liable to check or split by the change of weather or climate.

For convenience of transportation it is constructed in such a manner as to allow of being easily taken apart and packed in one compact package.

This mill is very simple in its construction, all of its cross sections fitting in grooves corresponding with the same and marked, so that it can be put together in fifteen minutes by the

farmer or dealer, appearing as in figure 2.

The mill is operated by a crank at the side. Two men and a boy can easily clean upwards of five or six tons of wheat in a day, with one of the Kenosha mills. Its simplicity and effectiveness we should judge would bring it into very general use, while its price—\$35—makes it within the reach of all.

Treadwell & Co., of this city, are the general agents for the sale of this machine in California, and have just received a car-load of them. The mills were made specially for this coast, and are called "The Pacific."

The Wheat Market.

In no other State in the Union are the great body of wheat growers so completely under the thumb of one man as in California. No other State in which there is not something like competition in the market, and generally more than one outlet for the disposal of the surplus product. It is simply strange that one man only in California of those possessing ample means, should have been found with brains enough to have made some provision for the purchase and shipment of our wheat crop.

A great many changes have been "rning upon the old tune," that what California wants to keep her money at home, is to produce something to sell; and now when we have done this and have an ample surplus to send away, nobody wants it, or has money to pay for it; and if he had, he has no possible way of getting it to market.

Our commercial men are not up with the times—with a single exception—are not equal to the handling of the grain product of a single State; but allow the great internal interests and prosperity of California to suffer for the want of sufficient capital to buy up and transport to market the simple wheat product. So that whilst everywhere else throughout the Union there is ample means to buy and competition in the purchase tending towards a fair remuneration for cost of production, here we have neither.

Probable Surplus.

It becomes therefore a question of serious import to our people as to what they had better do with their surplus. Perhaps they could arrive at a conclusion better, were they well informed of the amount of that surplus, the means of its transportation and the condition of the markets abroad.

Those who have given the matter a careful consideration and compared figures, very generally agree upon about this: that there will be a round surplus of at least seven millions of cents. Of this quantity two millions have already been marketed, and shipping capable of moving two millions more are now or will be on hand on or before the 1st of April.

There will then be on hand from three and a half to four million cents surplus, and no means of transporting it to market. What prospect then is there of any material rise in the value of wheat over the present? When we take into consideration the loss by storage, shrinkage and interest on money to such as are compelled to realize, it becomes a question of the greatest interest and concern to many.

We would like to obtain the reasons from some ten or more of our intelligent and thoughtful farmers, why they believe that wheat will bring more, three or six months from this, than now. We are sure that a large number of our readers will be glad to see their reasons given in the RURAL PRESS.

THE New York Bulletin, of August 26th, mentions the arrival of a large lot of California grapes, on which the freight paid was \$156. The fruit was so badly damaged, it had to be sold for \$25. The Bulletin suggests a better style of packing and the transportation of the fruit in a refrigerating car, accompanied by a person whose business it shall be to see that the car is not left on the sidings for several days at a time. There is no reason why the shipments of California fruit to the Eastern cities cannot be made a success, as lots arriving there in good order always command high prices. Only the best samples of fruit should be shipped, and these should be carefully packed and sent forward with dispatch in appropriate cars.

PERSONAL.—Professor Gilman, of Yale College, recently appointed President of the University of California, left for the East on the 5th inst. He will return as soon as possible to undertake the duties of his position. The Professor's brother accompanies him on his journey.

Rotation with Fallow.

The startling fact of the rapid deterioration of the wheat lands in California, is producing its effect upon the minds of the most scientific and thoughtful of our farmers. They see every year the gradual lessening of the yield per acre and are trying every method of rotation, deep plowing and summer-fallowing, with the view of checking the growing exhaustion of their soils.

In our last issue we gave the views of a practical farmer of Napa, on this subject. He proposes wheat, hay and pasturage with sheep, as a largely paying cropping and renovating system, which will attract the attention of the farmers of our State.

We now present the views of another practical and thoughtful farmer, Mr. J. V. Webster, as given in an address before the Oakland Farming, Horticultural and Industrial Club, on the subject of

Summer Fallowing.

He says: The use of compost, or guano on our large farms, to the extent required to re-suscitate them—is out of the question—on account of the limited supply and great demand.

By experiments followed consecutively for the last six or seven years, I am fully satisfied that the best method that can be adopted for the resuscitating of our lands is by what is termed summer fallowing.

Having, previous to the year 1866, rented my grain-land—consisting of some 36 acres, in what is now the northern portion of the town of Brooklyn—to a neighbor, I paid but little attention to its condition. Finally he told me he could not rent my land; that year after year the weeds increased in number and size, while the grain grew thinner, so that with the two combined he could not realize sufficient to pay the rent. From my own observation and a little calculation I was forced to acknowledge that his statement was literally true.

The following year I undertook the cultivation of the land myself. Thinking that the ill success of my neighbor was owing to imperfect cultivation. I determined there should be no excuse on that score any longer. So I plowed the land deeply and closely—sowing the grain in good season and harrowing it in thoroughly. The grain came up nicely, and I began to feel that my efforts would be crowned with success.

But within a month after coming up I observed that it did not grow with that healthy vigor which I conceived it should. In spots, especially, it looked cold and sickening in a measure, possibly for the want of underground draining.

In due time harvest came on, and I found that my crop, on an average was no better than that of my neighbor the previous year, on the same land.

Deep Plowing.

At first I felt that I had gained nothing by deep plowing, and thorough seeding. However, upon reflection I reasoned in this wise. In the production of my neighbor's crop the previous year, certain elements must have been drawn from the soil—now the two seasons being about equal, in order to get as good a crop as my neighbor did, it was necessary that I should return to the surface of the land, in some way, elements equivalent to those abstracted by the previous crop.

This I concluded I did just about by deep plowing, turning up elements from below similar, and about equivalent to those drawn from near the surface of the land by the previous year's crops. This experiment convinced me that the land was exhausted; that deep plowing is an advantage, but not sufficient of its self to produce good crops on land impoverished by continuous cropping.

Then the question presented itself to my mind; how can I most successfully and economically restore to the soil the ammonia and phosphates, which have been drawn from it?

Green Crops for Manure.

I had heard something about summer-fallowing. It appeared so reasonable to me, that turning under a crop of vegetation to decay would improve the land, that I determined to try it. Owing to excess of work in the spring I was not able to get at the fallow before the 1st of April; by that time the weeds and volunteer grain was from one to three feet high; I found that my plow though a good one, would not turn the vegetation under completely.

I was told by some one to get a good heavy brush, and drag it over the vegetation in the direction I designed plowing the land. I did so, but I found that the stiffest of the weeds and grain would rise up in a short time after passing over it, to such an extent in fact, that the best I could do, considerable of it was uncovered after plowing.

Not satisfied with the work, it struck me that if I could get something to hold the weeds down until the plow would cover them up it would be just the thing. So I procured a good heavy chain of some ten or twelve pounds weight, with a cord I fastened one end of it to the right hand clip of the doubletree, and the other end to the beam of the plow, slipping the cord under the beam just in front of the bar passing through the beam, and behind the bar on top of the beam, so as to keep the chain securely in its place and giving it sufficient slack to fall into the previous furrow near

where it was fastened to the doubletree; the chain forming a curve, when the plow was in motion, from the point where it touched the ground to the beam of the plow; and dragging on the ground just sufficiently in front of the mouldboard to prevent the dirt from falling upon it; yet sufficiently close to hold the vegetation securely down until it was completely covered up.

With this arrangement I found the taller the weeds (any height under three feet) the more completely it did its work.

The Plowing Season.

From experience I am satisfied that it is best to delay the work of summer fallowing as late in the spring as it is possible to plow the land before it gets too dry, for two reasons; first, by so doing you get a greater growth of vegetable matter to enrich the land, and second, if your fallowing be done before the heavy rains are over, there will necessarily spring up a second crop of vegetation requiring a second plowing.

I have followed this system of alternate summer fallowing and seeding for the last six years with the most satisfactory results. In my opinion no other process of farming our impoverished lands will pay so well as this.

The land which, before this method was adopted, produced not exceeding one ton of hay to the acre, and that one-third weeds, has since given a yield of from two and a-half to four tons of nice clean hay every alternate year. Take last year as an average, I cut for hay nine acres of this land, summer fallowed the year before, the aggregate yield was 31½ tons, an average of 3½ tons per acre. Of this I sold to your townsman, Walter Blair, 24½ tons at the rate of \$15 per ton in the stack, the balance reserving for my own use; 3½ tons per acre, at the rate of \$15 per ton is equivalent to \$52.50; \$1.25 per acre was paid for cutting and about the same cost for stack-

Smoky Chimneys.

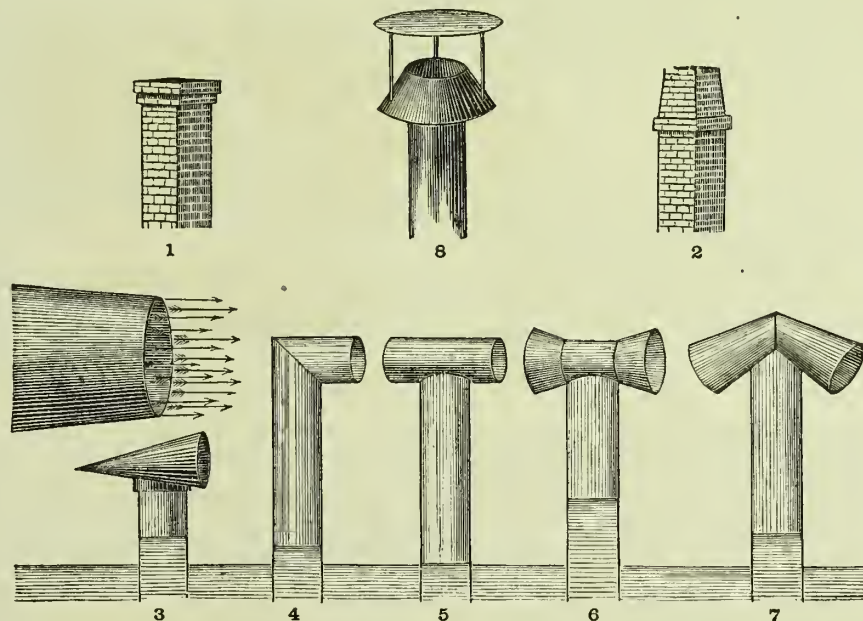
Among home discomforts, if there is any, one affliction that approaches very nearly to that of a cheerless, uninviting exterior and surroundings, it is a smoky chimney, that instead of giving a draft to the smoke, turns it downward at intervals, and filling the house with its embittering effects upon the eyes and good temper of the occupants.

Many chimneys smoke that otherwise would not, simply because they are too large at the top, permitting large bodies of cold air to drop into them, obstructing the upward passage of the smoke. Most stovepipes draw better than chimneys only because they are generally smaller and smoother than brick chimneys.

Forms of Chimneys.

Fig. 1, is an objectionable form for a chimney and will often smoke, when the same, improved upon, as in Fig. 2, would not. A good rule therefore, is, for all large chimneys to be contracted at the top. But even this will not always remedy the difficulty, as in cities where it is quite impossible to build chimneys upon low houses with safety, that shall be as high as the tops of adjacent ones.

These low smoky chimneys are particularly liable to direct downward drafts from currents of wind rushing over the tops of the higher buildings and dropping down upon and into them with great force. To provide a remedy that shall be effectual and yet inexpensive, resort has been had to a great variety of sheet



ing—leaving a net balance of \$50 per acre, less the cost of seeding and plowing.

Scratching System.

To compare this crop with that which grew on the land adjacent to it, of equal strength originally which has been consecutively seeded or volunteered for the last fifteen years, would be no comparison at all; for the reason that it was not worth cutting; in fact was not cut only in the best parts, and yielding, when cut, not exceeding one-half ton per acre.

It has been the practice of most of our farmers to scratch in as much land as possible during the winter, and then set down until haying time and pray for late rains. They do not appear to reflect that in the event of their being able to raise good crops after such miserable seeding, that the whole State will be flooded with oats, barley and hay; consequently glutting the market with these products, compelling the farmer to sell at ruinously low prices.

The way to make money is in managing so as to have plenty to sell while your unthrifty neighbor has none. In the years that are to come the thrifty farmer, perceiving the shipshod agriculturist, with his half-tilled fields depending more on the storms of winter than upon his own exertions to produce him a crop, will pray, if he prays at all, that we may have not exceeding 15 inches of rain in any one winter, that being sufficient with proper cultivation to produce abundant crops.

MORE ANGORA GOATS.—Landrum and Rodgers writing from Watsonville, say they will have eighty-five head of Angoras here from the East by the 5th inst., and are doubtless here now. They come from the celebrated band, bred by Richard Peters of Atlanta, Georgia, the reputation of which is too well known to need a word of comment.

This is believed to be the largest importation of thoroughbreds ever made on this coast, and will attract the attention of goat raisers, as they were selected personally by Mr. Landrum, who will exhibit a part of them at the State Fair.

and now below the general water line. When turned side to or angling, in any direction, the effect was the same, and the same with the blast directed upon its top. Thus Figs. 5 and 4 are only serviceable to some extent in keeping out the rain.

When Fig. 6 was placed in the blast, the water was lifted and sustained to a height of 3 inches in the tube, and no matter how turned, or at what angle the blast fell upon or against the cap the effect was very nearly the same; and no other form could be substituted as good as it. Fig. 7 came the nearest to it, with the advantage of being a perfect protection against even a driving rain, which is not entirely the case with Fig. 6, though nearly perfect.

In the *Country Gentleman* of recent date we find a direct corroboration of our experiment; it says: "For a small stove chimney, we have never found anything to exceed the sheet iron cap shown in Fig. 6. It was placed on a low chimney, where high roofs around made many conflicting currents, which sometimes blew the flames out of the stove below in streams into the room. After this cap was placed in the top of the brick flue, it never smoked again—and not only so, but it always drew with a strong current whenever there was wind, fire or no fire.

Emerson's chimney cap, Fig. 8, although quite different in construction, operates on the same principle. The cap prevents the wind from striking the top of the chimney. Between the cap plate and the sloping rim, there is a contraction and expansion of space similar to that shown in Fig. 6."

Chicken Raising.

EDITORS PRESS:—Having just read "Marion's" letter concerning chicken raising, I cannot forbear giving her a few words of advice, as she has no practical experience. Do not begin with more than fifty hens, and be sure they are young and healthy; one has to grow in knowledge by experience and close observation to succeed well—"Wright's Practical Poultry Keeper" she will find of great assistance to her. Again, do not set any eggs until after the rains come; then keep the chicks warm and dry, and success is almost certain; could I have known these few things when I first commenced, it would have been worth hundreds of dollars to me. Sometime I will tell you how I manage my young chicks—a vital point.

Yours, HEN WIFE.

Fruit Vale, Aug. 25.

Now here we have something practical, a short article right to the point, and from a person who evidently knows just what she is talking about. We shall be pleased to hear from her on the management of young chicks.

Immense Wheat Farms.

There are three wheat farms in the San Joaquin Valley with areas respectively of 36,000 acres, 23,000 acres and 17,000 acres. On the largest of these farms the wheat crop this year is reputed to be equal to an average of 40 bushels to the acre, the yield running up on some parts of the farm to 60 bushels. The product of this farm for the present year is 1,440,000 bushels. The boundary on one side of this farm is 17 miles long. At the season of plowing ten four-horse teams were attached to ten gang-plows, each gang having four plows—or forty horses with as many plows were started at the same time, the teams following in close succession. Lunch or dinner was served at a midway station, and supper at the terminus of the field, seventeen miles distant from the starting point. The teams returned on the following day. The wheat in this immense field was cut with twenty of the largest reapers, and we believe has now all been threshed and put in sacks. It would require over forty ships of medium size to transport the wheat raised on this farm to a foreign market. Even the sacks required would make a large hole in the surplus money of most farmers. We have not the figures for the product of the other two farms; but presume that the average is not much below that of the first. There are thousands of tons of wheat which cannot be taken out of the valley this season, and must remain over as dead capital, or, what is nearly as undesirable, will only command advances at heavy rates of interest.—*Bulletin*.

NEWSPAPER PROGRESS.—Our excellent contemporary the *Morning Call* is now issued every day, Monday included. Among other improvements the proprietors propose extending the commercial departments of the paper, so as to meet more thoroughly the wants of a mercantile community. The market reports are already excellent and the other departments well appreciated by the public as its steady increase of patronage evinces. The *Call* is a very good paper now, and the proprietors intend making it even a better one.



Golden Grain.

Golden grain, thou teeming treasure,
Nurtured 'neath the summer's smiles,
Source of pure and peaceful pleasure
O'er the land for myriad miles.

Daily rippling with the ocean;
Frowning with the passing cloud;
Whispering with the woods in motion;
Bowing when their heads are bowed.

Cool and clear, when evening follows,
Still new glories we behold:
Skies, and seas, and hills, and hollows
Blaze with universal gold.

Matchless tints with thee are mated;
Brighter blooms the night-orbs' face:
All her robes, illuminated,
Glow with unaccustomed grace.

Where enticing paths dis sever
Pendent stems on stately slopes,
Parted curls thou seemest ever,
With their grace thy beauty copes.

But, as fever steals the tresses
Of some maiden's auburn hair,
Warmth which thee with splendor blesses
Leaves the brows of Nature bare.

Lavish loveliness, thy lustre
But invites the spoiler's hand;
All the charms that thou canst cluster
Die, dissolved, at his command.

Truly fate to thee is fickle
When such gorgeous hues as thine
Flaunt but to attract the sickle,
Thus to fade by means malign.

Brilliant beauties are the briefest;
While we gaze they melt away,
Garnered, thy delights are chiefest,
So we would not bid the stay.

Woman's Sphere—The Ballot.

Do you ever allow Maine children, who have strayed into other States and found homes, a voice in the column given the woman of your paper?

I do want to speak in regard to "Woman's Suffrage, which I see agitates the readers of this column to some degree. I have claimed that Maine women have more good sense than to clamor for the ballot. It seems natural for a meeting to be called and addressed by such women in Massachusetts, but somehow I don't like to have Maine women do so. You know it is conceded that Maine gives smarter men and women to do the great battle of life than any other State—children of mind and muscle who shoulder bravely every duty.

Woman's suffrage indeed! As though the ballot could right the wrongs or stay this tide of evil. Woman's rights! Do not women have more rights to-day than they appreciate or enjoy? Woman's sphere is home—her influence should be there—her children should be taught such gentle influences as only true mothers can indelibly stamp upon their minds; and it should be given them at home. Home should be made cheerful and happy (no matter if you cannot put so much money in the bank) so that children, boys especially, just passing into manhood, may find enjoyment and cultivation there. Would not that one step be grander than all the ballots cast by women could bring about? Women, do we do our full duty here? Do we enjoy our full rights? Ah, the result too plainly tells the story! The minds of too many who are not properly interested, wander away, and step by step go down the hill and are lost. O, the devices of the devil! Could not woman, in her true sphere at home, do much to bind the demon. It does not need the ballot.

Every mother should, as far as possible, inform herself in all matters of importance, and talk the same with the children, for they are susceptible—watch and are animated with whatever interest parents. Instill in their minds the fact that they are better fitted to fill places of trust and more useful in society by such knowledge. How necessary that mothers should be ready to feed the minds. Many claim that they have no time for reading, no time for religion, no time to read the affairs of the country; but would not the compensation to children more than pay the cost? It seems to me to turn out en masse to vote would degrade women. How thoroughly

must all true women be disgusted at the sight. To be sure there is a class who are heartless and "don't care," who would march with apparent dignity for the purpose of finding their rights. But to such I have one wish—that they might all become police officers, obliged to do duty every rainy night.

Mothers, stay at home; teach your boys to be thoughtful and honest, your girls to do general housework, adding all accomplishments in your power, so that when they assume the responsibilities which come alike to the rich and poor, they will be ready to discharge them; and I can see no need of the ballot to set things right.—*Maine Farmer.*

A Definition of Love.

Many women suppose that they love their husbands, when, unfortunately, they have not the beginning of an idea what love is. Let me explain it to you, my dear lady. Loving to be admired by a man, loving to be petted by him, loving to be caressed by him, and loving to be praised by him, is not loving a man. All these may be when a woman has no power of loving at all—they may all be simply because she loves herself, and loves to be flattered, praised, caressed, coaxed; as a cat likes to be coaxed, and stroked, and fed with cream, and have a warm corner.

But all this is *not* love. It may exist, to be sure, where there is love; it generally does. But it may also exist where there is no love. Love, my dear ladies, is *self-sacrifice*; it is a life out of self and in another. Its very essence is the preferring of the comfort, the ease, the wishes of another to one's own, *for the love* we bear them. Love is giving and not receiving. Love is not a sheet of blotting paper or a sponge, sucking in everything to itself; it is an out-springing fountain, giving from itself. Love's motto has been dropped in this world as a chance gem of great price, by the loveliest, the fairest, the purest, the strongest of lovers that ever trod this mortal earth, of whom it is recorded that He said:—"It is more blessed to give than to receive." Now, in love, there are ten receivers to one giver. There are ten persons in this world who like to be loved, and love, where there is one who *knows* how to love.

FIDELITY.—Never forsake a friend. When enemies gather around, when sickness falls on the heart, when the world is dark and cheerless, is the time to try true friendship. The heart that has been touched will redouble its efforts when the friend is sad or in trouble. Adversity tries true friendship. They who turn from the scene of distress betray their hypocrisy, and prove that interest only moves them. If you have a friend who loves you, who has studied your interest and happiness, be sure to sustain him in adversity. Let him feel that his former kindness is appreciated, and that his love is not thrown away. Real fidelity may be rare, but it exists in the heart. Who has not seen and felt its powers? They only deny its worth and power who have never either loved a friend or labored to make him happy. The good and kind, the affectionate and the virtuous see and feel the heavenly principle. They would sacrifice wealth and happiness to promote the happiness of others, and, in return, they receive the reward of their love by sympathizing hearts and countless favors, when they have been brought low by distress and adversity.

PERILS OF FRIENDSHIP.—It is not possible to ask a man to return borrowed goods, books, money, or anything else, without putting in peril the beautiful friendship on the strength of which he fleeced you. He was a wise man who said to his friend wishing to borrow, "You and I are now good friends. If I lend you money and you do not pay it, we shall quarrel. If I refuse to lend you, I suppose we will quarrel. There are two chances of a quarrel, and I think I will keep the money rather than run the risk of losing it and you." He had in mind the old saw:

"I had my money and my friend
I lent my money to my friend,
I asked my money of my friend,
I lost my money and my friend."

MOURNING FOR THE DEAD.—The celebrated James Watt, who has tasted the bitterness of grief for the loss of a wife, said admirably: "Our duty to the departed has come to a period; but our duty to our living family, to ourselves, and to the world still subsists, and the sooner we can bring ourselves, to attend to it, the more meritorious."

Golden Words.

The habit of looking on the bright side is invaluable. Men and women who are evermore reckoning up what they want rather than what they have—counting the difficulties in the way, instead of contriving means to overcome them—are almost certain to live on corn-bread, fat pork and salt fish, and sink to unmarked graves. The world is sure to smile upon a man who seems to be successful; but let him go about with a crestfallen air, and the very dogs in the street will set upon him. We must all have losses. Late frosts will nip the fruit in the bud, banks will break, investments prove worthless, valuable horses die, china vases break; but all these calamities do not come together. The wise course to pursue, when one plan fails, is to form another; when one prop is knocked from under us, to fill its place with a substitute, and evermore count what is left rather than what is taken. When the final reckoning is made, if it appears that we have not lost the consciousness of intentional rectitude; if we have kept charity toward all men; if, by the various discipline of life, we have been freed from follies and confirmed in virtue, whatever we have lost, the great balance-sheet will be in our favor.—*College Jour.*

THE TRUE MAN.—Nine-tenths of the alleged inhumanity of mankind is owing to their being deceived. If people are sure of an accident or calamity, crowds hasten to relieve it. By veracity we charm in conversation; by sincerity we influence opinion; by trustworthiness we render friends loving and secure, add to the general confidence of men in men, and by thus strengthening the foundation of society, require the right to an analogous personal sense of worth and firmness. Truth gives a sense of security to the feeblest man, as lying does of insecurity to the strongest. The true man has but one answer to give to interrogators, one story to tell them, nobody's face to fear.

YOUNG FRIENDS, education is to you what polish and refinement is to the true diamond. In its rude state, the diamond resembles a stone, or piece of charcoal; but when cut and manufactured, it comes out a bright and beautiful diamond, and is sold at a great price. So it is with you. Education calls forth the hidden treasures and latent brilliancies of your minds, which previously lie dormant and inactive or, in other words, asleep. It cultivates and develops your understandings, and fits and prepares you for the duties and responsibilities of coming years, which we trust will be years of usefulness—useful to yourselves, to your associates, and society at large.

A HAPPY HOME.—"Six things," says Hamilton, "are requisite to create 'a home.' Integrity must be the architect, tidiness the upholsterer, it must be warmed by affection, and lighted up with cheerfulness, and industry must be the ventilation, renewing the atmosphere and bringing in fresh salubrity day by day; while over all, as a protecting glory and canopy, nothing will suffice except the blessing of God."

MUTUAL FORBEARANCE.—If we wish to succeed in life, we must learn to take men as they are, and not as they ought to be; making them better, if we can, but, at the same time, remembering their infirmities. We have to deal, not with the ideal men of dreaming poets, but with the real men of every-day life, precisely like ourselves. This fact of common aims, ambition, and infirmities, ought to create constant sympathy and forbearance.

NO FRIENDSHIP ON EARTH is more constant than that contracted by the reading of a journal which makes an honest and earnest effort to merit his continued support. Hence the newspaper which is conscientiously conducted becomes a favorite in the family.

MANY men want wealth—not a competence alone, but a five-story competence. Everything subserves this; and religion they would like as a sort of lightning-rod to their houses, to ward off, by and by, the bolts of Divine wrath.

"**WOMAN** is a delusion, madame," exclaimed a crusty old bachelor to a witty young lady. "And man is always hugging some delusion or other" was the quick reply.

A MAN who has no enemies ought to have very faithful friends, and one who has no such friends ought not to think it a calamity that he has enemies to be his effectual monitors.

Young Folks' Column.

Marbles.

Boys, do you know where your marbles are made? Possibly you are the happy owners of some fine old English marbles, beautifully variegated, or of some pure white "alleys." Or you may know the pride of ownership in a precious "taw" which seems to have some mysterious power of its own.

Various kinds of patent marbles have been manufactured. Many are made of potter's clay, glazed, and burned in a furnace; others of marble or alabaster. In Saxony, marbles are made by breaking a hard stone into square blocks with a hammer. The blocks are then assorted into groups of various sizes. About one hundred of the blocks are put upon a stone slab, which has been cut into concentric grooves. Hunt up the meanings of these two words in the dictionary, if you do not know them already. Over this slab is another of oak, supported by a lever, which is turned by the power of the mill, while little streams of water are let into the grooves to prevent the wood from getting too hot by friction, and also help make the marbles round. By this process, in about fifteen minutes' time, they are made ready for market. Only ordinary marbles are manufactured in this way. A mill containing three of these blocks will make 60,000 in a week. At other places many processes are gone through with. After they have been "sorted" and worn down on grindstones, and scraped, they are completed by friction against each other in cylinders of hard wood or stone. They are polished by putting emery into the cylinders. They are colored in zinc-lined vessels and in small quantities, the coloring matter being poured upon them from time to time. The dust of calcined tin is applied to give them the last polish. Do you know that great quantities of marbles are sent to India and China? Most of the beautiful "agates" which you boys prize so highly come from a mill at Obenstein, on the Nahe, in Germany. Patent marbles are known by the names "Dutchman," "Frenchman," "Chinaman."—*Hearth and Home.*

LITTLE GEORGE'S TROUBLES.—Aunt Libby patted me on the head the other day, and said, "George, my boy, this is the happiest part of your life."

I guess Aunt Libby don't know much. I guess she never worked a week to make a kite, and the first time she went to fly it, got the tail hitched in a tall tree, whose owner wouldn't let her climb up to get it out.

I guess she never broke one of the runners of her sled some afternoon when it was prime coasting. I guess she never had to give her biggest marbles to a great lubberly boy, because he would thrash her if she didn't.

I guess she never had him twitch off her best cap and toss it into a mud-puddle. I guess she never had to give her humming top to quiet the baby, and have the paint all sucked off.

WHAT BOYS ARE GOOD FOR.—Daniel Webster once silenced a Southerner who was berating New England for its cold climate and barren soil. "What can you raise in such a country as this?" was the contemptuous question.

"We raise men," was the grand reply.

A bright boy made quite as apt an answer to a cross-grained old man who had outgrown all his love for children. "Get out of my way!" were his surly words. "What are you good for?"

The boy looked up in his face, with a bright smile, without losing his temper at the cross speech, and said, very promptly, "They make men out of such things as we are."

The boy came off with flying colors. It is a pity that surly old men should ever be made out of the good stuff in children.

AN EASY ELECTRICAL EXPERIMENT.—Take an open-faced watch that has a crystal considerably convex or full, and lay upon it, nicely balanced, a common, long stemmed, clay tobacco pipe. Then take a wine glass or plain surfaced goblet and after vigorously rubbing it with a silk handkerchief, hold the edge of the glass to the stem of the pipe, and you can cause the pipe to revolve upon the face of the watch, with the electricity degenerated on the glass. This is a very pleasing experiment, and one which almost any one can try.—*School-day Visitor.*

DOMESTIC ECONOMY.

Canning Fruit.

To many, the process of canning fruit is laborious and irksome, because they do not know how to take hold of it the easy way. There is not the slightest difficulty in keeping cherries and berries of all kinds perfectly fresh during the entire year. Of course there is a right mode of doing it; and the right way is the best way and the easiest way.

As to cans the simplest are the best. Those of glass, with glass covers, a rubber band, and a screw ring, are as easily sealed as they are unsealed, and can be managed by any intelligent child of 12 or 13. A tin funnel, just fitting into the neck of these, can be made for 20 cents, and with this the cans may be filled very rapidly and without spilling. As to fruit, it should be perfectly fresh and sound and carefully picked over, so that no ill flavor will injure its quality when it comes to the table.

Time Boiling.	Sugar to
Minutes.	Qt.—Oz.
Cherries.....	5 6
Raspberries.....	6 4
Blackberries.....	6 4
Plums.....	10 5
Whortleberries.....	15 4
Peaches, whole.....	15 4
Peaches, halved.....	8 4
Pears, whole.....	30 8
Pears, halved.....	30 6
Pineapple, sliced.....	15 6
Ripe Currants.....	6 8
Grapes.....	10 8
Tomatoes.....	30 0
Gooseberries.....	8 8
Quinces, sliced.....	15 10

The fruit will keep just as well without sugar as with it, and many prefer it without. Sugar always rises in price during the preserving season, and we can wait till berries are made into pies next winter and then add sugar as well as to put it in now. In canning peaches, if two or three are put in without removing the pits, a bitter almond flavor will pervade the whole can. This flavor may be given to peach preserve by boiling with the fruit in the syrup the kernels of the peach-stones. For most palates this is an improvement.

As to the process, place a very wet cloth in the dish-pan; set the jar on this, having previously rinsed it in cold water; place in it a silver spoon; put in the funnel and a cupful of syrup first; then fill with fruit to the top. Remove the spoon and set the jar where no draft of air can strike it. The fruit should be covered with syrup. In 10 or 15 minutes the contents of the jar will have cooled and settled some, and they will be ready to seal up. Fill them to the top with syrup or hot water; put on the rubber, the glass cover, and the screw ring. When the jars are cold the ring should be tightened again, and then set away in a cool, dark place. Some put a circular piece of paper on top of the jar just before putting the cover on and think this prevents the mold that sometimes forms over the fruit. But if the cans stand till partially cool, and are then filled full before being sealed, no mould will form.

As to the purchase of cans: If one sends direct to the manufacturer and buys by the gross, he will save all the profits of middlemen. The money usually spent in putting up fruit in the old-fashioned way—a pound of sugar to a pound of fruit—if invested in cans and fruit alone, would go further and would be vastly more healthful in the relish secured for our tables.—N. Y. Tribune.

COOKING BEANS.—After preparing the beans by any process of boiling preferred, they are placed in the pot, and a piece of pork laid on the top large enough to fill the opening; rind side up. This should stand in a heated oven for hours, of course the beans cannot dry or scorch, and are reduced by the slow heat to a rich, unctuous mass, very unlike those exposed in a dripping pan, however carefully baked. In Boston, where baked beans are so famous, families prepare these pots and send them Saturday evening to the bakers, where they stand in the oven all night and are returned hot Sunday morning.

There is a delicious dish from dried beans, the secret of whose preparation I almost fear has been buried in the graves of our grandmothers. The following recipe was received from an aged friend and found to be delicious: One cup of beans (measured when dry), one pound of fresh meat; boil till perfectly soft, and add salt, pepper and butter to taste—this is true “bean porridge.” When potatoes were in such a half civilized state that they had a “best end,” the other being rejected, beans occupied a very prominent place on the farmer’s table, but since the wonderful improvement of the potato this healthy and delicious esculent has been neglected.

The following recipe for using string beans, taken from a German cook-book, will be found very excellent: “String the beans and break them into lengths of two or three inches, boil with a little salt until done, and while warm mince an onion very fine and scatter among them, cover with cold vinegar and the next day they are fit for use.” One onion is sufficient for two quarts of beans, as only a slight flavor is desired.—Cor. Country Gent.

How to Make Mead.

Take two quarts boiling water; three and a half pounds brown sugar; one and a half pints molasses; one-fourth pound tartaric acid. Stir well; when cool, strain. Then add one-fourth ounce of essence of sassafras. Put into clean bottles; cork tightly; keep in a cool place. To prepare for use, pour some of the mead, say half a gill, into a glass; fill up with cold water, and stir in a little soda. Drink while foaming.

Other Methods.

Two quarts of boiling water; three and a half pounds of brown sugar; one and one-half pints of molasses; one-fourth pound of tartaric acid; one teaspoonful of essence of sassafras, or any other flavor prepared; cork tight, and set in a cool place. Put two tablespoonfuls in half a glass of water, and stir in half a teaspoonful of powdered soda to make it foam.

Here is another, more elaborate and very delicious, appropriately called Cream Nectar:

Seven pounds loaf sugar; half ounce Rochelle salts; four quarts water; when dissolved and blood warm add half an ounce of cream tartar. Beat the whites of five eggs in a half pint of cold water; mix six tablespoonfuls of flour in a pint of cold water; put the eggs and flour together and turn the whole into a kettle. When the steam begins to rise, stir it well and remove the scum. As soon as it boils, take it from the fire and add four ounces tartaric acid. Stir it well, and when cold it will be ready for use. Strain before bottling. Use two or three tablespoonfuls for half a glass of water, and add half a teaspoonful of soda when drunk. As this recipe makes quite a quantity of syrups, it is best to divide it among a number of bottles, flavoring each with a different essence.—Country Gent.

HOW TO MAKE TUB CHEESE.—Mrs. G. E. C., North Brighton, Mass., gives her mode of making tub cheese as follows: “First prepare the curd the same as for making hoop cheese (my way I withhold, as no doubt hers is preferable), then placing it in a jar or tub of the required size, as solid as may be with a follower to fit closely, and a heavy weight thereon to receive the moisture which should be changed as often as saturated. Each day’s curd being thus managed till the tub is filled. Then take the whole mass from the tub into a cheese tub, and completely pulverize, adding more salt if necessary, thoroughly cleansing the tub and replacing the curd by pounding in as before, using the cloth as at first until dry, then butter the top, and filling in about the cheese as it dries with melted butter, covering the whole with a thin cloth tied over the top of the tub, and it is done.”

Practical Receipts.

JELLY PUDDING.—To one quart of sweet milk add one-half pint of bread or cracker crumbs, the yolks of three or four eggs, one cup sugar, one-half teaspoonful of salt, a little lemon. Bake a few minutes, cover the top with jelly, beat the whites of the eggs with three-quarters cupful of sugar, and spread above the jelly. Brown in the oven.

METHODIST CAKE.—One-half cup of milk, one egg, about two cups of flour, one tablespoonful butter, one cup of sugar, one teaspoonful cream of tartar, one-half teaspoonful soda, and lemon to flavor.

FRITTERS IN HASTE.—Sometimes an emergency arises when an extra dish is required, and the eggs can not be found, or the hens are sitting and no eggs are to be had. To one quart of flour add one measure of Horsford’s baking powder or its equivalent in cream tartar and soda. Put in two spoonfuls sugar, soften a piece of butter the size of an egg, and salt as to judgment, then milk enough to make a thin batter. Bake quickly on a griddle. The sugar makes them brown as well as eggs. If one has buttermilk, Horsford’s Preparation and the butter are not necessary.

PLUM MARMALADE.—Simmer the plums in water until they become soft, and then strain them and pass the pulp through a sieve. Put in a pan over a slow fire, together with an equal quantity of powdered loaf sugar; mix the whole well together, and let it simmer for some time until it becomes of the proper consistence. Then pour it into jelly pots, and cover the surface with powdered loaf sugar.—Godey’s.

DRYING CURRANTS.—A correspondent of the Western Rural furnishes the following, as a good way for drying currants: Take an equal amount of nicely stemmed currants and sugar. Let them boil together for one minute, then carefully skim the currants from the liquor, and spread on dishes to dry. Dry them in the oven. Use the liquor for jelly.

SAVORY BISCUITS.—Have the weight of nine eggs of sugar in a bowl, which put in a jar of hot water, weigh the same weight of flour, which sift through a wire sieve upon paper; break the eggs into a bowl, and proceed as directed for sponge cake, then with a paper funnel or bag, with a tin pipe made for that purpose, lay it out upon papers into biscuits three inches in length, and the thickness of your little finger, sift sugar over, shaking off all that does not adhere to them; place them upon baking sheets, and bake in rather a warm oven of a brownish yellow color. When done, and cold, detach them from the paper by wetting it on the back. Place them a short time to dry.

CATTLE RAISING.

The “Mad Itch” of Cattle.

A correspondent of the Veterinarian, of London, (Eng.) writes as follows from Galena, Illinois, with regard to the cause and cure of the “Ma I Itch, a disease which is causing much loss to farmers in that region:

It occurs only in the fall of the year, when the farmers commence cutting the Indian corn. The common practice is to go through the corn as it stands in the field and husk it, leaving the small ears on the stalk. The cattle are then either turned into the field or the stalks are cut and hauled into the pasture, when both cattle and hogs are allowed to feed on them. Now it generally happens that at this season of the year the pastures are very bare, and, consequently, the animals feed greedily, and live exclusively on this kind of fodder. In about eight or ten days from this time the disease makes its appearance.

The first indication of any disturbance to health is diarrhoea, accompanied with symptoms common to derangement of the digestive organs, but as these are generally not of a serious kind, they often pass almost unheeded. The next symptom which is observed is, that the beast commences to violently rub its head or sides of the face against any convenient thing for the purpose. This peculiar irritation about the head is associated with more or less cerebral disturbance. It has singularly happened that in the cases which have come under my notice this irritation was almost entirely confined to the left side of the face and under jaw. The rubbing of the part increases to such an extent that the face is soon denuded not only of hair but of large patches of skin, and the head becomes a shapeless mass. At no period of the disease, however, is the animal delirious. As might be expected, spasmodic twitchings of the muscles, principally of the head and neck, are associated with this state of things. These with other concomitant symptoms increase until the animal becomes worn out, and dies, not unfrequently in from twenty-four to forty-eight hours.

As yet I have only had an opportunity of making one post mortem examination, and in this case the carcass had been greatly torn and partly devoured by hogs. I found the first and second stomachs but little affected; the third, however, was much inflamed and presented appearances akin to those of “fardel bound.” The fourth stomach and the whole of the intestines were extensively inflamed. They contained few or no faces, as we might have expected from the state of the bowels from the onset of the disease. My observations have also been limited to one outbreak only, on a farm some distance from here in Wisconsin. At the time I was consulted, out of a herd of about twenty animals, nine had died. I suggested that the still unaffected animals should be removed to a very bare pasture and fed sparingly on light, easily digestible food. I also gave them a smart dose of cathartic medicine. Only one other animal was lost.

There are various opinions among the farmers as to the cause of the disease. Some hold that it is owing to the cattle feeding with the hogs, and thus taking into their stomachs portions of the fodder with the saliva of these animals mixed with it.

I am aware that I have given you a very imperfect description of the disease, but probably you are already familiar with it, and if so, your opinion of its nature would be of value.

The Veterinarian expresses no opinion with regard to the above, but simply asks for further information from those who have met with the disease in the course of their experience.

How to Educate Animals.

[Translated from the Bulletin de Paris.]

To educate an animal is not to force its nature, but to tame and direct it, so as to make it fit for the service or the society of man. This is not a very difficult task for one who knows how to go about it. Most animals are drawn toward man, whose superiority they recognize by instinct, whom they are proud to please, whose love is agreeable, and whose protection is advantageous to them. But before these relations are established, there is an obstacle to be conquered—the distrust natural to the lower animals. The first step to be taken, then, is to secure the pupil’s confidence.

Unhappily many do just the contrary of what is necessary to secure this end. Some brutal men know only how to maltreat their animals, which do not obey because they do not understand; other men make playthings of them; and others fatigue them with importunate caresses. Do none of these things. What an animal demands is security. Never harm him, and you will have his confidence.

When your first relations are established, he will come to be caressed of his own accord. Always be careful of him, but without feebleness or importunity. Never tolerate a vicious act; never allow yourself to be defied; but be indulgent for unintentional disobedience, or for any damage done unintentionally. In these last cases content yourself with making the animal understand wherein he is wrong without too much severity. Well doing should

always be rewarded with a caress. In habitual intercourse, be affectionate if you will, but first be reasonable. Do not be lavish of caresses; make them less frequent; but let your rule be gentle, peaceable, and just.

Violence and blows are bad means of education for animals, as well as men. Force makes itself obeyed, but only on condition of continual action; a sad condition! It sometimes happens that despair revolts against even force; we often see this in the case of the ass, sometimes in that of the horse. Besides, in making yourself obeyed by outward force, you drive from the animal all spontaneous action, his grace, his amiability, his ardor to obey you; without counting that, in using this means, you reserve for yourself an extreme resource for extreme cruelty. Look at the facts. Your poor asses are unmercifully beaten, and are stubborn. Your cruel teamsters overwhelm their horses with blows, and oftentimes can scarcely govern them; the Arabs caress theirs, talk to them, live with them, and do with them whatever they wish. For my part, in my relation with animals, I always make it an amusing study to obtain their obedience with the least possible expense.

THEY have a new way of treating the broken legs of horses which ought to be generally known. A valuable horse in Hartford, Conn., had his leg broken some time since. The leg was set by an experienced surgeon, and was covered thickly with plaster. When the plaster “set” or hardened, it kept the limb as immovable as if it had been made of iron. Thus treated, a broken leg, it is asserted, will knit together in a brief time and become as good as ever.

Straw Compost.

A law of Sweden prohibits the removal or sale of straw from property of the crown under any conditions except by especial permission. Hence large amounts of this material have collected, and its utilization for agriculture has become a question of considerable importance. A number of experiments had been made without satisfactory result until, by order of the King, in 1870, new trials were undertaken at Bergshamra. These, according to Prof. Bergstrand, have been attended with success. The straw was thrown into heaps, 6 to 8 feet high, well moistened with water in which rape oil cakes had been dissolved (manure water would have been just as good but was not obtainable), and covered with earth to a depth of 4 or 5 inches. After a month the straw was turned, again moistened, and left until apparently in proper condition to be used as compost. From 30 loads of straw and 3 cwt. rape oil cakes, after 2½ months, about 30 loads of compost, the value and properties of which were determined by chemical analysis. The following gives a comparative view of the composition of straw compost and of ordinary stall compost:

	Straw Compost.	Stall Compost.
Water.....	74.36	79.30
Organic Substances.....	15.63	14.01
Ashes.....	10.01	6.69
	100.00	100.00
Nitrogen.....	0.23	0.41
Phosphoric Acid.....	0.10	0.20
Potash.....	0.17	0.50

The result of the chemical investigations lead to the proposition to add to about 15 loads of compost 1 cwt. superphosphate (of 12 per ct.) and 1 cwt. sulphate of ammonia. This would make a manure as good as, and in some respects better than, good stall compost.

ASTRONOMICAL OBSERVATORY.—The Truckee Republican is informed that Professor Davidson has determined upon Pollard’s Peak, Summit Station, as the proper place for the National Observatory. “This peak is located less than a half mile from Summit Station, which is 7,042 feet above the sea level, and the highest point of the Central Pacific Railroad. Castle Peak, seven miles from the Summit, was examined by Professor Davidson with the view of making it the place for the observatory, but the atmosphere from that peak was found to be too hazy, and the mountain itself too difficult of access to make it a desirable place for astronomical, barometrical and atmospheric observations. Castle Peak has the advantage in altitude, as it is 9,764 feet above sea level, or 1,964 feet higher than Pollard’s Peak. The latter, however, is easily accessible, being less than half a mile from the railroad, and the atmosphere from its summit is remarkably clear, and for this latter reason it has been selected by Professor Davidson. An appropriation of \$50,000 has been made by Congress for the erection of the necessary buildings, purchase of telescope and other necessary instruments. The telescope to be used will be the second in size of any in the United States. Once established, the observatory will be a permanent fixture, and will receive an annual appropriation from Congress of from \$25,000 to \$50,000.”

A Country Home.

We took occasion last week to make a short visit to our old friend, Mr. John Eckley, who resides on the south bank of Carquinez straits, about four miles below Martinez, in Contra Costa county. Mr. Eckley possesses a tract of about 400 acres of good, though hilly land, and intends raising fine stock upon it. As a location for one with a taste for both nautical and agricultural pursuits, it is unsurpassed by any we have seen on the bay shore. In the center of a little sort of valley, which slopes to the beach, a fine dwelling house has been erected, such a house as we seldom see on a California farm. The cellar, cool and airy, is devoted to the dairy department; the first and second stories to domestic purposes; and the half story above, surmounted by a turret admitting light through the roof, is used by our friend as a billiard room, picture gallery, etc. By the water-side are three small houses, one built specially for the accommodation of the ducks and geese, which are numerous; one used by the men for sleeping apartments; and one for the boats and appurtenances. The latter is also used as a paint, carpenter shop, etc., where all sorts of tools required on the farm are kept in readiness for use. In front of this, is a small but substantial wharf, alongside of which lies Mr. Eckley's fast and well-known yacht, the "Emerald," the chief of the San Francisco yacht fleet. She lies in a snug, quiet harbor, which would be the delight of any yachtsman, and looks as neat as a pin at all times, being kept in perfect order.

Back of the residence, and to the left looking from the beach, a fine substantial two-story barn 40x60, is being built; and back of that again are the stables, pig-pen, cow-yard, etc. On the hill beside the house a large space is fenced off as a range for the chickens and contains a neat hennery, with all conveniences. On the premises is a sort of miniature "hen-parlor," larger than an ordinary coop, which is enclosed by glass and is intended as a sort of hospital for sick chickens and a place for them to rear their young ones in during the winter. Mr. Eckley has quite a number of hens and roosters, all of fancy breeds, and doing well.

He has laid out a vineyard on a side-hill near by, obtaining his cuttings from Dr. Strentzel's well-known vineyard at Martinez. He has set out plants, vegetables, and fruits of all descriptions and all of the best quality to be obtained. He takes the sensible ground that it is very little more trouble to raise fine varieties than poor ones, while the fruit gives much better satisfaction. We had the pleasure of eating some vegetables raised from seed sent by us last spring. A tank has been put in half way up the cañon back of the house, and a pipe leading from there supplies the dwelling and furnishes plenty of water for irrigating the garden. Among other things we noticed which might be adopted with benefit by some of our California farmers, was a heap in the yard in which all vegetable matter, etc., which would make manure, was thrown. Everything available for this purpose, instead of being thrown away is placed in this heap and is used on the garden as occasion requires. The conveniences for carrying on the farm are all good, and some of our more experienced farmers might well copy after Mr. Eckley's example in fixing up his farm as if he intended it for a home instead of a stopping place. Although he has only resided there 18 months, the place looks older now than many farms which have been settled upon for years.

When Mr. Eckley bought the place, which then had no "improvements" upon it, he took the stock also. He is fast replacing them with fine cattle of good breeds and intends having a fancy dairy. Among what he has now are a number of Devons, and he recently imported a Jersey bull, two heifers, and a cow at a cost of \$500 each. They are splendid animals, and Mr. Eckley is justly proud of possessing them. We wish more of our California farmers and dairymen would follow his example of breeding pure stock only, and having what they do have of good quality, if they have less of them. What we need particularly in this country is a class of men who go to work as if they meant to stay here, and beautify their homes accordingly, making everything convenient, not only for themselves and their men, but for the "women folks" also.

SAN JOAQUIN VALLEY AGRICULTURAL SOCIETY.—We are in receipt of a complimentary ticket to the Fair of this Society.

SANTA CLARA FAIR.—Complimentary ticket received. Will be on hand if possible.

Our Distinguished Visitor.

On Monday last our office was honored by the presence of Prof. Louis Agassiz. His plain and cordial address more than delighted us, while his words of commendation for the industrial and progressive interests our journals represent gave us special encouragement. He expressed himself quite surprised at the substantial appearance of our city, alluding to our fine structures as being devoid of patch-work, but of artistic and solid workmanship. We hope his physical strength, by a little rest in our bracing climate, will be wholly restored, and that his visit may be a pleasant and profitable one to himself, as we are quite sure it will be to our own city and to the world of science. We hope he will husband his strength so as to fully complete the great work that he has been gathering in his hands for fifty busy years. He expressed to us that this is now his greatest desire, and we but express the sentiments of thousands when we pray that such may be the crowning glory of his noble life.

WHEAT.

DAVS OF SALE..... 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

RANGE OF PRICES.....

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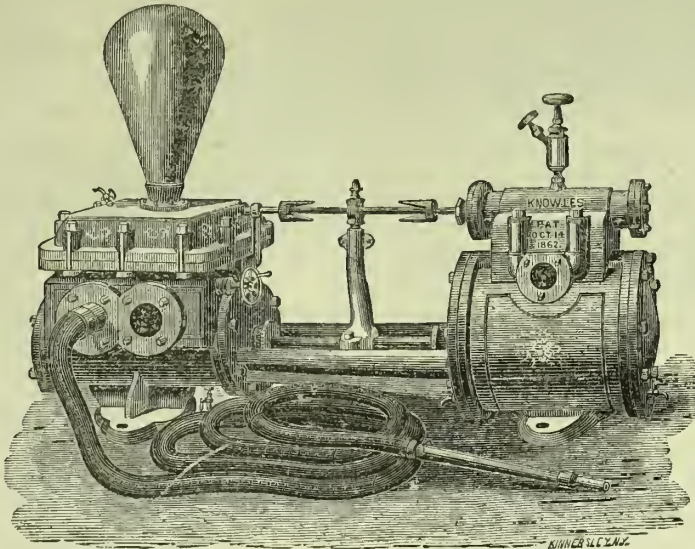
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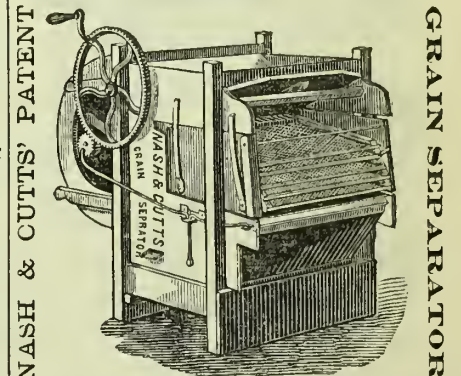
Applications for Stalls at the Park and space at the Pavilion should be made to ROBERT BECK, Recording Secretary, at once.

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5v4-td



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One Burner is Equal to Six Candles. This Lamp burns Refined Petroleum, Gasoline, Danforth's Oil or Taylor's Safety Fluid. Oil expressly prepared for the Lamp furnished by the undersigned in quantities to suit. WIESTER & CO., 17 New Montgomery street, Grand Hotel, S. F.

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American Manures, and Farmers' and Planters' Guide—comprising a description of the elements and composition of plants and soils—the theory and practice of composting—the value of stable manure and waste products, etc., etc.; also chemical analysis of the principal manufactured fertilizers—their assumed and real value—and a full exposure of the frauds practiced upon purchasers. By Wm. H. Bruckner, Ph. D., and J. B. Chynoweth. Price \$2, post paid. Address DEWEY & Co., this office.

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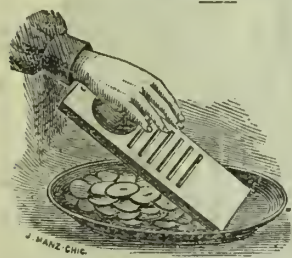
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These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock. 16v3-6m

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Cotswold Sheep and Angora Goats.



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All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

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Now offer for sale the Pure Bred and High Grades We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

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Has constant varieties of ORNAMENTAL GREEN and SHRUBS; also ment of Choice merous to Green House ers and Bulbs, and Flower Seeds of all kinds, are for sale by



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I will send, post paid, warranted to arrive in good order: 1 year Plum and Pear Trees, Roses and Shrubs, \$25 per C.

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Long experience in sending to the Pacific Coast enables them to pack Plants in the best manner. For Catalogues address as above. au3L-2t

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Between Front and Battery.....SAN FRANCISCO

HOUSE ESTABLISHED IN 1850. 14v3-6m

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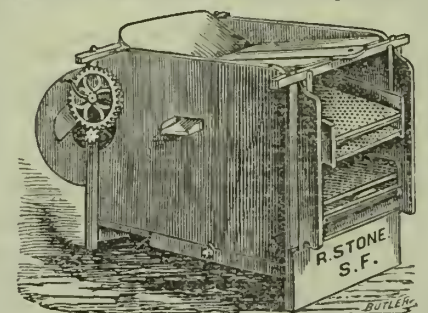
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Our business being exclusively Commission, we have no interests that will conflict with those of the producer 4v23-1y

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JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento. G. R. JEWELL, 15v3-3m T. B. FLINT.

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Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired. For further information apply to **R. STONE**, 422 Battery street, San Francisco. 1v4-3m

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The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

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The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

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As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

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Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other. 3v24-60wt

Endless Chain Elevator,

FOR RAISING WATER FROM WELLS.

BALL & CRARY, Patentees.



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The above named Fuse are warranted equal to any made in the world.

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Repeating Sporting Rifles—Oiled Stocks. Repeating Sporting Rifles—Varnished Stocks. Gold, Silver and Nickel-plated Rifles—beautifully Engraved.

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Cartridges in cases (Brand H), manufactured by the W. R. A. Co. expressly for their arms. A full and complete stock of the above named merchandise always on hand and for sale by

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\$100 to \$250 per month, everywhere, male and female, to introduce the Latest Improved, most Simple and perfect

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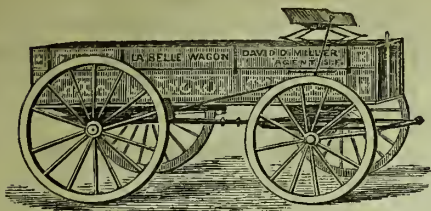
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By W. E. WEBB, the noted Pioneer and Humorist. The wealth and wildness, mysteries and marvels of the mighty Plains fully and truthfully described. Overflowing with wit and humor. The Appendix a Complete Guide for Sportsmen and Emigrants. PROFUSELY AND SPLENDIDLY ILLUSTRATED. Immensely Popular, and selling beyond precedent. Send for illustrated circular, terms, etc., at once, to the Publishers,

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Thimble-Skein Farm Wagons.



JUST RECEIVED FROM
THE CELEBRATED ZUFELT & CO.,
Shsbogyan Falls, Wis., established in 1850. Also the
Celebrated La Belle Wagon,
Manufactured by FARNSWORTH, WOODWARD & CO.,
At Fon du Lac, Wis.

PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.

3 in Thimble Skein..	\$120	3 in Running Gear..	\$90
3 1/4 " " " "	125	3 1/4 " " " "	95
3 1/2 " " " "	130	3 1/2 " " " "	100
4 " " " "	140	4 " " " "	110

Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

Above prices include Double and Single-Trees, Stay Chains, Neck-Yokes and Wrench.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climates, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

DAVID D. MILLER'S,
IMPORTER AND MANUFACTURER,
715 Market street, near Third.....San Francisco.
194-9m



PRICES:

Thimble Skein, 3 inch, \$100; 3 1/4 inch, \$105; 3 1/2 inch, \$110; 4 inch, \$115; 4 1/2 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yokes and stay chains.

Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.

We invite the attention of buyers to the superior workmanship and finish of the justly celebrated Wagons. They are known throughout this West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective, it will be replaced without charge." We claim by actual test a SAVING OF FIFTEEN PER CENT. IN DRAFT over any other Wagon offered for sale. This ease of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves.

Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the best Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturers of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.

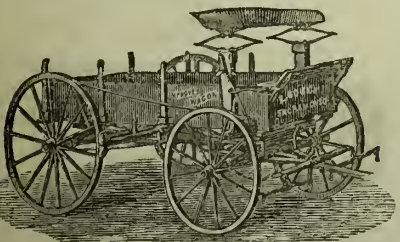
We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Rack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the spring seat 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running-gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY SEASONED HICKORY.

If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

TREADWELL & CO.,

San Francisco,

2v4ff General Agents for the Pacific States.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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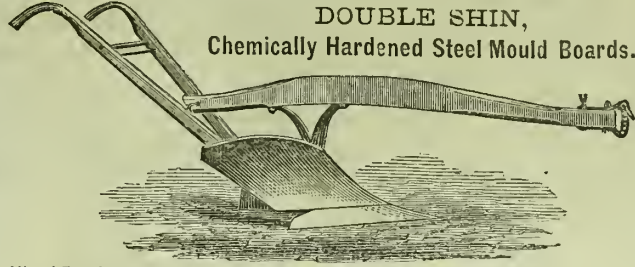
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THE "JONES" PLOW.

Manufactured by the Naperville Agricultural Works, Naperville, Illinois.

First they are unlike other Plows—Because they completely pulverize the soil, and run perfectly true. Because—They all have Adjustable Beams, and CAN BE USED BY EITHER TWO OR THREE HORSES. Because—THEY SCOUR WHERE ALL OTHERS FAIL. Because—THEY DO TWO KINDS OF WORK, thus saving to the farmer ONE PLOW.

Because—They are the lightest draft plow made, and will not kill your horses. Because every plow is warranted and can be tried, and if it fails may be returned. Because they are honestly made, and will wear one third longer than



DOUBLE SHIN,
Chemically Hardened Steel Mould Boards.

the common run of plows. Because they ARE VICTORIOUS OVER ALL OTHERS in the various plowing trials in which they have been used.

Only the best class of material is used in them—the finest grade of steel

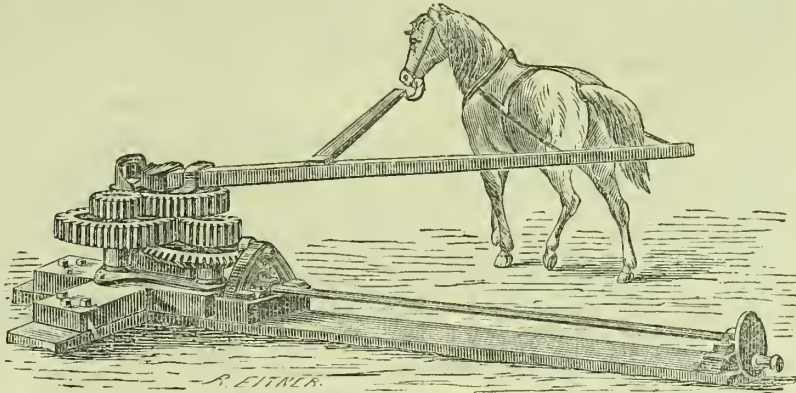
and the best quality of Lumber. They are HARDENED ALL THROUGH (not case-hardened, or merely hardened on the surface,) but by the use of CHEMICALS KNOWN ONLY TO OURSELVES, we refine the steel and MAKE EVERY MOULD BOARD CLEAR THROUGH AS HARD AS FLINT.

The Jones Plow completely refutes the old notion that no plow can work equally well in stubble or sod. We warrant them to do it in every instance. No matter if every other plow manufacturer has failed to make such a plow. We have succeeded. Let true merit decide; if you have any doubt, TRY THEM—WITH YOUR FAVORITE, and keep the one you like best.

TREADWELL & CO.,

Sole Agents for the Pacific Coast, San Francisco.

July 27-cow



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Nos. 211 and 213 Mission Street,.....SAN FRANCISCO.

MANUFACTURERS OF THE

EXCELSIOR AND GOLDEN STATE WINDMILLS,

WINDMILL BRASS PUMPS, WATER TANKS, ETC.

Also, the Little Giant and Excelsior Sweep Horse Powers—more extensively used and giving better satisfaction than any other Powers in the State.

We are the Largest Manufacturers of Pumping Machinery on the Pacific Coast.



N. B.—We have made the manufacturers of Windmills a specialty the past ten years. During the last five years we have manufactured and put in operation a greater number of Mills than any other firm in the State; and we believe that in the last two or three years, more than any other two firms; which fact is the best proof in the world of the superiority of our machines. We GUARANTEE all our work, and we have NEVER FAILED TO FULFILL OUR GUARANTEES.

TUSTIN'S PATENT

FIRST PREMIUM WINDMILLS

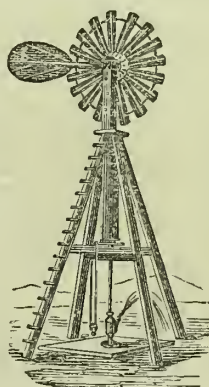
ARE THE MOST POPULAR

Of any on the Pacific Coast.

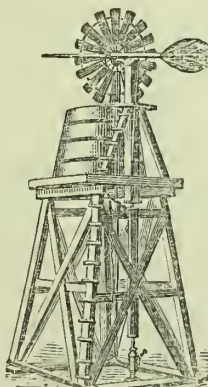
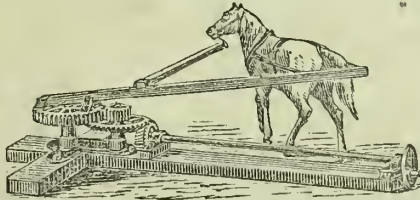
State and County Rights for sale.

Send for a Descriptive Circular containing Price List and all other particulars, postage free.

TUSTIN'S ECLIPSE HORSEPOWER



Eureka.



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15v23-3m

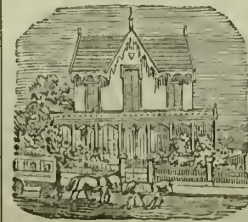
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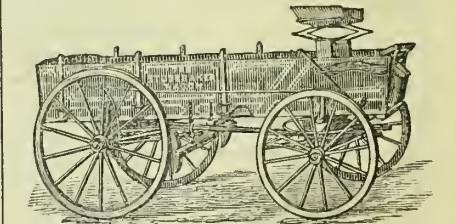
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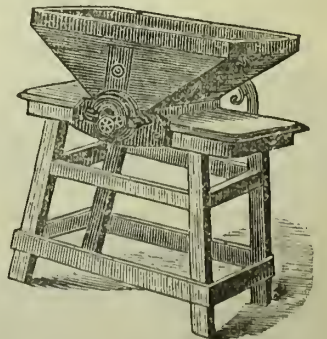
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THE PACIFIC RURAL PRESS.—This excellent agricultural paper has entered on its fourth volume. We give it preference over all other papers of its character that circulate on the coast. Its editors know the wants of the husbandmen of this coast, and what our varied climates and soils are adapted to, and furnish the very information desired. In this it is incomparably more valuable than all the eastern publications combined. We wish the RURAL PRESS encouraged and increased support. The man that can take but one agricultural paper should be sure that that one is the RURAL PRESS.—*Auburn Herald.*

EVERY farmer in California should be a reader of the PACIFIC RURAL PRESS. It is an agricultural paper of great excellence. The subscription price is \$4 a year, but we have made arrangements with the publishers whereby we can furnish the RURAL PRESS and the *Flag* together for \$6 a year.—*Healdsburg Flag.*

PERSONAL.—L. P. McCarty, correspondent and traveling agent of the MINING AND SCIENTIFIC PRESS of San Francisco, is at present in this city, where he will remain a few days examining our mines and soliciting subscribers to the publications of DEWEY & CO. Mr. McCarty is an excellent correspondent and driving business man. He has visited the eastern portion of the State lately and described its mineral resources faithfully.—*Virginia Enterprise*, 30th.

THE MINING AND SCIENTIFIC PRESS entered on its twenty-fifth volume on the 6th inst. It is a valuable paper for the miner and mechanic.—*Auburn Herald.*

The Pacific Rural Press.

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The state of this new field of agriculture, so different from all others; the new and improved methods of farming necessary here; and the absence of any published record of farming and rural experience on this coast, form a combination of circumstances which render a really good journal of greater importance to farmers here than are similar issues to farmers in any other part of the world.

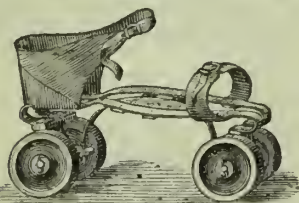
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We invite the acquaintance of all parties connected with inventions and patent right business, believing that the mutual conference of legitimate business and professional men is mutual gain. Parties in doubt in regard to their rights as assignees of patents, or purchasers of patented articles, can often receive advice of importance to them from a short call at our office.

Remittances of money, made by individual inventors to the Government, sometimes miscarry, and it has repeatedly happened that applicants have not only lost their money, but their inventions also, from this cause and consequent delay. We hold ourselves responsible for all fees entrusted to our agency.

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Best white wine, vintage 1871..... \$25
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Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
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Best red wine, vintage 1868..... 25
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Sweet Wines.

Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
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Best three varieties of table grapes, not less than three bunches each..... 15
Best two varieties of table grapes, not less than three bunches each..... 10
Best one variety of table grapes, not less than three bunches each..... 20
Best twelve varieties of wine grapes, not less than three bunches each..... 25
Best six varieties of wine grapes, not less than three bunches each..... 20
Best three varieties of wine grapes, not less than three bunches each..... 15
Best two varieties of wine grapes, not less than three bunches each..... 10
Best one variety of wine grapes, not less than three bunches..... 20
Best variety of raisin grapes..... 10
Best and greatest variety of grapes, not less than three bunches each..... 60
Second best and greatest variety of grapes, not less than three bunches each..... 40
The above list of premiums, together with the Rules and Regulations which have been adopted by the Association, will be published in a pamphlet form for free circulation on application to the Secretary, L. N. Hoag.

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PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, SEPTEMBER, 14, 1872.

[Number 11

The American Merino.

The American Merino, as fairly represented in our engraving, still maintains its superiority over all other sheep, of this or other countries, as a wool-bearing animal merely. The character of the wool, for strength, length of fiber, and a medium fineness, for which there is by far a greater demand than for either extra-fine or for coarser qualities, is superior; and the proportion of wool to live weight is unsurpassed by any other breed.

As improved in recent years by Mr. Hammond, and many other noted breeders, in form, size, and weight of fleece, the original Spanish importations have been so modified as to entitle the breed to the distinctive appellation which it now bears, as fully as in the cases of the French and Silesian improvements. A correspondent in Addison county, Vermont, the heart of the American Merino region, thus compares the old with the new:

The heaviest fleeces shorn by Mr. Atwood, of Connecticut, twenty-five years since, were five pounds from ewes, five to eight from rams. Now 18 pounds are taken from best ewes, and 26 to 30 from best rams, the growth of twelve months. The Child Bros., of Weybridge, bred several years from a ram that sheared as follows: First fleece, 16 pounds; live weight, after shearing, sixty-four pounds; second fleece, twenty-four pounds; live weight, ninety-nine pounds; third fleece, 26 pounds; live weight, 107 pounds.

Although these fleeces are very heavy they do not injure the vitality of the sheep, and the keep that will fix a wether nicely for market will keep the Merino in fine condition. Of course fleeces of the above weight will shrink in cleansing more than the light wools; yet no other breed of sheep has yet been produced that, in proportion to live weight, will produce three-fourths as much cleansed wool per head as the Merino. Between eight and nine pounds have been realized in numerous instances from a single fleece.

A correspondent in Washtenaw county, Michigan, reports that four brothers by the name of Wood, on Lodi Plains, in that county, keep about 150 to 160 each of Merino sheep, and obtain an average clip per head of about seven pounds washed wool, and that by careful management they have increased their yield one-half pound per head each year. Their annual income from sale of fine woolled sheep and the clip of wool has been about \$2,000 each for five or six years past. They only keep fine-wooled sheep.

The foregoing we extract from the Commissioner's Report for 1869; as showing the general favor in which this breed of sheep is held in the Atlantic States. There are several fine flocks of Merinos in California that are unsurpassed in their wool value by any other breed of sheep yet introduced; and as to climate, there can nowhere be found a better, as regards

the peculiar conditions required for the utmost perfection of this breed.

The animals represented in our engraving are specimens of the pioneer flocks introduced into this State by Mr. J. D. Patterson, of Brooklyn, Alameda County.

Importation from Vermont.

Three car loads of choice full-blooded Spanish Merino sheep were shipped from this place, last week, by Messrs. Severance & Peet, to California. We learn that their intentions are to start a ranch there for the purpose of breeding nothing but the pure blood sheep. Mr. Peet goes stored with knowledge and experience, he being classed among Vermont's best breeders. He takes his entire flock of breeding ewes, some of them shearing 15 lbs. per head, and upon an average we learn they sheared 12 lbs. We also noticed some of Ad-

Winter, Early and Wet.

It is usual a little later in the season than this, for some one of the papers of the State to lead off in the matter of the probabilities and indications of a wet winter and then for all the other papers to follow the lead and generally with additional reasons. And yet with the annual return of these "unerring signs" we had a succession of three or four dry winters previous to the last, which was little more than a moderately wet one. Now as the seasons have much to do with the agriculture of California, we propose to make the matter of prophecy in regard to the approaching winter our legitimate business.

The Rain Record.

By examining the record of rain-fall for a

and from the extreme southern to the northern boundary of the State; and as Mexico is now receiving an immense rain-fall we may expect ours in due time or even earlier than usual.

As showing the certainty of the near approach of unusually heavy and early rains, we append the following

From Nevada.

We fear material damage to crops in this section from such unusual moisture. The season for harvesting is just closing, and some of the farmers have commenced threshing. Should the rain continue, the abundant grain crop of this year will be nearly if not entirely ruined. We sincerely hope no such disaster will fall upon the country; but should the storm continue, many farmers will be heavy losers, and the entire country will suffer from its effects.—*Reese River Reveille Sept. 2d.*

One effect ascribed to the very severe rains of the past ten days is to kill the pasturage. It would be supposed that, with almost a certainty of a long stretch of pleasant weather, the grass would start afresh; but stock people say the rain bleaches out the bunch grass just as it is at its best, and renders it dry and juiceless.—*White Pine News, September 2d.*

The mountains in the vicinity of Unionville are covered with snow, and the weather predicts an early and severe winter.—*Silver State.*

It really looks and feels as though the summer was gone. Overcoats and stoves are in order and Prospect Mountain is growing white with falling snow. Such weather is, we believe unprecedented at this time of the year in this region, and after the intensely warm days we suffered only a week ago, the change is most disagreeable. Everybody is put-

ting up stoves, and tinner's are overworked.—*Eureka Sentinel.*

Springs Increasing in Volume.

The same phenomenon that induces the increase of flow from springs on the approach of autumn is already observable and a full month or more earlier than for years before. The water in the wells of many districts is on the rise a month earlier than last year.

Fowls are moulting for their winter feathers from four to six weeks earlier than last year whilst swallows and other land birds of passage are already assembling in numbers in places preparatory to their flight for a less rainy climate. We don't speak of the muskrat building his nest at a greater height above the water than usual for we haven't been lately where they live; but everything we have seen or heard of betokens according to ancient prophecy, an early and wet winter.

MALVA SEEDS.—It would be well for those having the Malva tree to save the seeds this year.



This Ewe sheared 18 lbs. 5 oz.

FULL-BLOOD MERINO SHEEP.

This Ram Sheared 30 lbs. 9 oz.

dison County's best stock bucks, one purchased of R. J. Jones, known as the "Ophir, Jr.," also Henry Lane's stock buck, Douglas' stock buck, and many others selected from Vermont's best flocks. We also noticed "Eureka 2d," which is one of the best stock rams in Vermont. "Eureka" sheared this year 26 3/4 lbs. Some of his 2-year-old rams went with him. One named "Matchless" sheared 24 1/4 lbs. this year. While the breeders of Vermont regret to lose "Eureka 2d" they cannot but wish Messrs. Severance & Peet success in their great undertaking. We understand they were offered \$500 for him before he left. Good judges of sheep have expressed themselves as never having seen so perfect a lot of sheep as was shipped by Peet. They take 180 breeding ewes, and 86 rams. They will be on exhibition at the State Fair.

THE STATE FAIR REGATTA.—The Committee on regatta reported as follows: For single scull boats, purse \$100; four-oared boats, purse \$250 and Society's cup, divided as follows: First boat, \$125 and the cup; second boat, \$75; third boat, \$50. The entries to be made with the Secretary of the Society, and to close September 19th; entrance fee, ten per cent.; two boats to enter to make a race. The report was accepted.

series of years, it is seen that of two wet winters following a succession of dry ones, the second of the two, has always been much wetter than the first. Hence the first reason why the coming winter should be wetter than the last.

Our winter rains come booming up from the Gulf of Mexico, and it has been noticed that when heavy rains deluge Mexico, we may also expect to get our full share. Mr. G. Kustel lately returning from Mexico, says the rains had not only been of great volume but commenced three weeks earlier, than in many seasons past, violent rains falling in August that were never known before, previous to October.

These rain falls that come with our southeast winds are progressive, gradually making their way from the Gulf of Mexico, washing the mountains of Mexico and the plains of Western Texas, falling in deluges and torrents upon the Gila and Colorado river and adjacent country, and finally sweeping over California from its eastern line, westwardly to the Coast Range of mountains, and sometimes to the ocean shore,

CORRESPONDENCE.

Islands of Lake Erie.

Put-in-Bay, Ohio.

EDS. RURAL PRESS:—Happy to say the crops of grapes on these Islands have passed the usual time of rot and mildew, and are so far free from any disease or insect enemy, and as we have had unusually warm weather we may expect sweet and well-ripened grapes and fine wines.

During a residence of nine years I have never seen the vines so green and vigorous at this date as they now are. The crop will not be quite as heavy as last season—owing to severe weather last winter; but it is much better than any one could have expected. Consequently all are satisfied and it is the third successive good crop. Fruit of all kinds has done well; Especially peaches. Small fruits were affected seriously by very dry weather at time of maturity.

Our hotels have been well patronized, and Put-in-Bay has an established reputation as one of the great summer resorts of America. There is to be an International Regatta on the 10th prox., and a Convention of Fat Men about the same time. So you see we have our share of the gay and festive things and scenes of life if we are out on the Islands in Lake Erie.

Some of our old Island friends who have preceded and are enjoying the delicious climate of Santa Barbara in your own beautiful State, say that it is to be the great Newport of the Pacific. Let us hope it may become the place where sufferers from the ills of our mortal life may find relief and comfort. Yours
W. E. S.

Game in Marin County.

EDS. PRESS:—As the season for quail shooting begins on September 15th, sportsmen will be glad to learn that plenty of sport can be found within a day's ride of the city. On the ranches owned by Shafter & Howard, of Point Reyes, it is a common thing to scare up 400 to 500 quails in a morning ride of a few miles. They are very tame and fly into the nearest bush waiting to be shot. There is a stage running the whole length of the Point, leaving San Francisco by way of San Rafael.

In addition to the quails, the men who herd cows on the mountains, frequently report six or seven deer seen at one time. We saw a beautiful buck about 300 yards distant watching us with an interest peculiar to those being interviewed. But he did not subscribe for the PRESS, and we wanted to shoot him.

There are quail and deer to be found in Bolinas, Tomales, Novato and Nicasio, but their best range seems to be on point Reyes. We understand that Messrs. Shafter & Howard issue permits to those whom they choose to have hunt upon their grounds. At Olema parties were engaged in trout fishing, but we did not learn with what success. To reach Point Reyes you pass through Olema. It is about equally distant from the city by way of Sausalito or San Rafael.

Agriculture in the Mountains.

Referring to the agricultural capacities of the mountain counties the Amador Ledger says: "If markets could be had at fair prices for the products of the vineyard and orchard thousands of acres of the best vineyards in the world would soon be brought under cultivation and made to yield tribute to labor; that are now wild and unproductive. Not this alone; past experience has proven that the mountain counties are the most reliable portion of the State for the production of all the staple cereals; the mountain crops are as certain as the seasons, and are never affected by drought. As sure as the husbandman sows he will reap, and when the cereal capacity of the lands of this county and the never-failing capacity of crops shall be understood, these mountain lands will be sought and settled in preference to the valleys. But situated as we are, away from the railroad communication with the markets of the State, heretofore there has been no inducement to our farmers to increase the area of cultivation beyond the demands of a home market."

That journal also urges the necessity that exists for railroad communication between those counties and Sacramento and Stockton. Butte, Placer, Nevada and Tehama counties are already realizing the benefits of such communication by having quick transportation to market for their agricultural products.

The southern counties of the State are keenly alive to the benefits of railroad communication with the outside world, and their citizens are actively bestirring themselves to encourage railroad enterprises. Thus far the Atlantic and Pacific proposition appears to have resulted in nothing but talk and quarreling among the Committee of One Hundred.

THAT man is only truly brave, who fears nothing so much as committing a mean action, and undauntedly fulfils his duty, whatever the dangers which impede the way.

MISCELLANEOUS.

Angora Goats.

Capt. S. Wing, of Napa, who lately purchased 108 head of Angora goats, has received the following letter from Mr. A. Eutyichides, of Virginia, importer of Cashmere or Angora goats, in reply to a letter of inquiries regarding the raising and care these goats require:

SPROUT SPRINGS, Appotomatox Co., Va.
August 10th, 1872.

MR. S. WING.—Sir:—Angora are the same as other goats, except that they bear finer wool, called Mohair. They want dry climate in order to thrive; much wet and cold weather not being good for them. In cold weather they should be kept in warm sheds, which should be kept dry and clean. They eat less, and can stand hunger much longer than sheep, and as they are fast travelers and eat every kind of herb, briar and branch, the drought can have no effect on them; indeed, drought is an advantage to them, as it makes the climate dryer than usual.

They live twelve and fifteen years, (if kept on hay, etc.) after the front teeth fall out, which occurs at the age of eight years. Their flesh is excellent to eat—particularly the kid's flesh is delicious. I am astonished at the demand for their wool in this country; there is demand for it all over the world. Where is the mohair in America that there may be a demand for it? A manufacturer recently paid \$70,000 for machinery in England, and shipped it to Philadelphia, but not being able to find sufficient mohair to run his factory, even for a single day, was obliged to arrange his machinery for the manufacture of long wool instead of mohair.

There is a duty of 22 cents per pound on mohair imported to this country from Asia Minor or England, therefore a manufacturer can not afford to import and manufacture mohair. Mohair will have to be sold for exportation until we produce enough to supply one or two factories in our own country.

Any wool broker will buy mohair in New York, at any time, for exporting to England, until America can produce 3,000 or 5,000 bags, at least, so that its manufacture may be made profitable here. Mohair is worth 4 s. per pound in England, and brokers in New York will pay 75 to 80 cents per pound for it; they ship it to England and get a profit from 18 to 20 per cent.

Lately I wrote to a friend in Sacramento to inform me regarding the production of mohair in California, that I might come there and buy. If I could get even 200 bags I would come—but I don't believe I would be able to secure 100.

You ask me about the value of Angora goats. I imported and intend to import and sell them at \$125 each. It is two years since I commenced, during which time I have lost above \$12,000, but I intend to persevere in the business, and will get it back. I do not expect to make money from the goats, but expect to establish their breeding and make something buying mohair—a business my fathers and forefathers have followed in Asia Minor. * * *

If you intend to go into stock-raising, take goats—it is an easy and paying business. The value of the wool of goats depends upon the selection of goats at first beginning. If your common goats be very short, haired black goats, and your buck a real thoroughbred select buck, your $\frac{3}{4}$ blood's hair might be worth 40 or 50 cents, $\frac{1}{2}$ blood's hair 70@80 cents, and 15-16 and upwards go into "fair average mohair," say worth \$1. But if you begin with long-haired, fawn-colored goats, and for economy's sake buy an indifferent buck, or a grade buck you may have 63-64 blood's mohair not worth more than 20 cents per pound. It does not depend upon the grade of the goat, but upon the quality of the wool to bring more money. "Fair average" means fine mohair above 7 inches long, no grey, no yellow, no discolored, no locks nor breaches' wool in it. The manufacturer does not care whether you shear the mohair from a dog, cat, or an Angora goat for which you paid \$2,000, but he is satisfied when he gets fine and long mohair. Yours truly,
A. EUTYCHIDES.

Sweet Potato Vines.

A writer in the Georgia Telegraph, says the Sweet Potato vine may be saved during the winter, and used the following spring in propagating a new crop. He writes: "I have tried the experiment during this year to my entire satisfaction. In the fall (at any time before frost) the vines may be cut in any convenient length and placed in layers on the surface of the earth to the depth of twelve or eighteen inches. Cover the vines while damp with partially rotted straw to the depth of six inches, and cover the whole with a light soil about four inches deep. In this way the vines will keep during winter, and in the spring they will put out sprouts as abundantly as the potato itself when bedded. The draws or sprouts can be planted first, and the vine itself can be subsequently cut and used as we generally plant slips."

There are few articles on which more time and money is wasted, than in trying to raise sweet potatoes from the plants usually forced forward in hot-houses, sent to market with very few roots, and sold from store in a wilted and dying condition. If those who have sweet potatoes would save their own seed, and take a

little pains, in the spring, it would pay them handsomely, meanwhile, the Georgia plan of propagating from the vine is certainly worth trying.

Machinery in Motion.

In nearly all the recent announcements of fairs and mechanical exhibitions, we find a part of the programme is "Machinery in Motion." What is it that makes this so attractive a feature of such displays? Nothing else so generally interests visitors, either male or female. The mere fact that motion is a delight to a healthy mind is not enough to account for the eagerness with which the sight-seers flock to the collection of grim workers, whose glittering levers, shafts, and wheels deftly turn out the most delicate fabrics, crush in their iron jaws the hardest materials, or force stubborn iron and steel to assume forms of usefulness and beauty.

It is the proud sense of power that, either consciously or unrecognized, causes the beholder to dwell with pleasure upon this exercise of brute force. Brute force it is, but force in subservience to the human mind. To the circle of forces in nature the inventor has given his command, and they obey him. The heat passes at his bidding into the steam boiler and is there transformed into expansive force. This force, in obedience to human intellect, passes into the cylinder of the engine, and mass motion is produced. Through and along the ponderous shafting and belting, this motion is distributed to thousands of fingers, eyes, teeth, arms, and cutters, all of which obey the command of mind over matter. Such a display cannot but give an exalted, almost a triumphant, feeling to the observer, which the frivolous do not stop to analyze, but which has its effect upon them nevertheless.

This supremacy of mind over matter, notwithstanding its apparent extent, is undoubtedly only in the beginning of its development. An exchange has recently indulged in some sneering remarks regarding a prediction of a prominent authoress that the time will come when most household drudgery, and, indeed, all other drudgery, will be performed by mechanical agencies; but in view of what has been done and is now doing, he is a bold man who can say there are any mechanical impossibilities, save such as are impossible in principle.

We regard the exhibition of machinery in motion as the most instructive and valuable feature of these otherwise useful exhibitions, and are glad to see that no fair is complete without it. The principal progress of the world henceforth is to be effected through chemistry and mechanics. These are the agents by which civilization is to be advanced; and while we see immense benefits to arise from the exhibition of working machinery, we would take this opportunity to suggest that, in such exhibitions as that in the American Institute, about to be opened in this city, a very interesting and instructive addition might be made to the chemical department, namely, a department of experimental chemistry, in which simple and typical chemical reactions might be exhibited by a competent chemist to arouse a general public interest in this fundamental science. Such a department, presided over by a lecturer of recognized ability, would be no less attractive than the exhibition of a sculptor modeling clay (one of the exhibitions of the American Institute Fair last year), while it would be far more profitable as a means of public education.—*American Artisan.*

Wheat—A Simple Comparison.

California has a surplus of 7,000,000 centals of wheat more than is wanted for the consumption of her people.

Of the six States east of the Hudson, Vermont comes nearest to raising its own bread, producing 451,000 bushels of wheat in 1869, or a bushel and a peck to each inhabitant; taking the army ration of twenty-two ounces of flour per day as a basis for computing the consumption of bread, it follows that Vermont raises bread enough to supply the people of the state thirty-seven days, and that to make up the deficiency they are obliged to purchase 3,836,000 bushels per annum.

Maine makes the next best showing in the cultivation of wheat, producing in 1869, 278,000 bushels, sufficient to last eleven days, and purchasing 8,500,000 bushels. New Hampshire, with a decreasing population, was a trifle behind Maine, producing 193,000 bushels, a little more than half a bushel to each inhabitant—and purchasing 4,360,000 bushels or ten day's supply.

Connecticut makes a much poorer show than New Hampshire, producing 38,000 bushels—enough to supply the people with bread for ten days—and purchasing 7,518,000 bushels. Massachusetts though having a larger area than Connecticut, raised only 34,000 bushels, which, ground to powder, was sufficient to give the inhabitants of the State bread enough for breakfast and dinner, but not enough for supper.

The people of this commonwealth purchase 20,300,000 bushels of wheat. Rhode Island raised 733 bushels of wheat in 1869, and purchased about 3,000,000 per annum. The six New England States together purchase in round numbers from 40,000,000 to 50,000,000 bushels of wheat, and quite as much of the other grains, or in round numbers 100,000,000 bushels of grain.—*Boston Advertiser.*

The Yucca Flaccida.

James T. Worthington, of Chillicothe, Ohio, commends the cultivation of the *Yucca Flaccida*.

This plant, a native of lower Ohio and Mississippi valleys where it is known as "Bear grass," is a hardy evergreen with stout tuberous roots and a profusion of evergreen leaves three or four feet long and one or two inches wide. After being wilted for a day or two the leaves are as tough and strong as leather, so long as they remain moist. It thrives in any good corn land, remains green and flourishing during our hardest winters, and requires no care after being once established, except to thin out the plants when they crowd each other. It attains its full size in three or four years, each plant then covering about sixteen square feet, and sends up yearly for many years hundreds of evergreen leaves which may be plucked freely at any season without injury to the plant.

Every spring it sends up several suckers from which it is easily multiplied. March and April are the best months for transplanting. For supplying cheap, strong strings and bands, it has no equal; is excellent for tying up bacon, hams, corn shocks, vines, bundles of vegetables, mending baskets, and other purposes when a string or band is needed, and requires only to be known to be generally cultivated. About mid summer it sends up a stout stalk six to eight feet high, with branching top and pendent shaped flowers like the century plant, cream colored and fragrant, and is then very beautiful. This variety, and a smaller and less valuable kind, are common in gardens in Kentucky and Southern Ohio. The leaves of the large kind (*Y. Flaccida*) will, I think, be eventually used for cordage, matting and coarse clothes instead of jute and other fibrous materials which we now import.

Filters and Filtering.

In every well-appointed kitchen, there are tin or porcelain funnels. For filtering watery fluids it is only necessary to insert, in the choke of the funnel, a V-shaped piece of fine sponge. All such liquids, on being put into the funnel, will pass through the sponge and become quite clear. When this effect ceases, the sponge must be removed and well cleansed. Vicious fluids are best cleared by filtering through a cone of white blotting paper, shaped by folding a square piece of paper from corner to corner, then folding the triangle into half its size, and opening the folds; it will fit any funnel, which will act as a much needed support to the paper. Wines, etc., poured into this, will run through perfectly bright. In some cases where the wine is only a little thick from lees, cork or other mechanically suspended substance, it can be made quite clear by filtering through a wad of white cotton put in the choke of the funnel; and when this answers, it is much quicker than the paper filter. For jelly and oil, wool alone is the proper medium for filtering. The felted wool jelly bag is pretty well known as the best means of clearing calves' foot jelly, and it also answers for olive and other oil. These bags are, however, too expensive to be generally used; hence they are rarely seen in kitchens. A good substitute for the wool bag is a cullender, on the inside of which a new flannel lining should be fitted, made of double stuff. A wad of white knitting wool, put in the choke of a funnel, will do to filter any small portion of such fluids.—*Scientific American.*

A MAMMOTH ARTESIAN WELL.—There is an artesian well in Paris which is nearly two thousand feet deep, four feet in diameter at the top, and two feet at the bottom, and which discharges upwards of twelve millions of cubic feet of water every twenty-four hours. Throughout Europe, it is stated, much attention is being paid by scientific engineers to this kind of wells; and the opinion is rapidly gaining ground, that they are the cheapest as well as the best sources of water supply for large cities.

Have any of our California engineers considered the practicability and comparative cost of supplying San Francisco with artesian instead of a poorer quality of mountain water?

WORKING IN HORN AND TORTOISE SHELL.—The horns are first macerated in cold water and then treated by heating in water and over a flame to soften them until they can be pressed out and split if necessary. Two methods are described *aplatissage a blanc* and *aplatissage a vert* (white and green flattening). Horn may be moulded by the use of the chippings which are beaten until they become somewhat soft and then considerable pressure applied to make the parts unite firmly. In the same way artificial horn may be made. By mixing horn and caoutchouc in powder, heating and pressing, may also be made another species of artificial horn. The spots on horn made to give it the appearance of tortoise shell, are made by solutions of gold, silver and lead.

SAVING LIVES IN MINING CAVES.—The simple expedient of driving down an iron pipe saved Levi Blanchard's life, who was recently buried in a well in Melrose, Massachusetts. It was three hours before he was rescued, but the pipe gave him air to breathe, and he recovered.

HORTICULTURE.

Pruning Rose Bushes.

A lady friend, who seems only a little less interested in the proper culture of her out-door shrubbery than she does the in-door culture of those charming little specimens of humanity which are daily committed to her charge, asks us when she shall prune her rose bushes. As this is a question that often comes to us for answer, thus evincing not only considerable interest, but considerable ignorance in the subject of rose culture, we will briefly dispose of it here, lest the pruning knife in the hands of the enthusiastic and uninformed *now* may cause no little regret hereafter.

Then when to prune rose bushes depends entirely upon the class or family to be pruned. Without going into a systematic consideration of the rose, for which we have no time just now, we will merely say that there are three grand divisions of the rose genus, each of which requires a mode of pruning peculiar to itself. For the first-class, or those roses that blossom but once a year—summer roses as they are called, we have always found it best to prune them pretty severely as soon as the period of blooming is over, unless it should be very dry, in which case we defer the pruning until just as the fall growth begins.

By this course we get an abundance of young spurs, or shoots, for flowering the next season. For the hybrid perpetuals, or Romontantes, which usually blossom both in spring and fall, we have generally pruned them late in the spring, so as to prevent their first crop of blossoms, and thus secure an extra supply of young shoots for fall blooming, when flowers of this character are scarcer and more desirable. For the true perpetuals—the Teas, Bourbons, Noisetta, etc., it makes but little difference when the pruning is done, as but very little is needed at any time, merely taking out the old wood in winter, and shortening in any extra vigorous shoot, after it has flowered.—*Rural Southland*.

Wild Plums.

EDITORS PRESS.—In answer to L. F. of Stockton, dated June 24th, 1872, you intimate that there are no wild plums in California. In order to throw additional light on the subject, accompanying this you will find a sample of what I think to be a wild plum which I found growing some three miles westerly from Petaluma, in 1855 or '59. And have had them growing in my orchard ever since. In their native State they were very much stunted and scrubby, but when cultivated grow quite thrifty, and bear regular crops every season. The foregoing is a short history of the sample that I forwarded to you by Wells, Fargo & Co's, express.

S. M. MARTIN.

Petaluma, Aug. 22, 1872.

The sample sent us are genuine plums, and we are pleased to receive them. It had been so often told us that neither the plum or crab-apple were indigenous to California, that we began to believe it.

The plums received are a fair fruit and would, we think, be good preserved in sugar or canned. We now hope to hear of a native crab-apple.

SOIL FOR FLORICULTURE.—Most flowers, if not all, succeed best in sandy loam, made rich by the addition of well-rotted manure, which should be thoroughly mixed with the soil. Such a soil, thus prepared, will not become hard or baked, but will remain loose and porous. It will not only afford the small and tender plants chance for existence, but it will also enable them to perfect themselves with vigor and beauty.

If your garden is composed of a stiff, heavy soil, a good dressing of sand and manure will assist it wonderfully in the way of plant development; and some of the most delicate plants that would not succeed at all in such soil, in its unimproved condition, will, after such preparation, flourish in the most satisfactory manner.

TO TRAIN FUCHSIAS.—When a slip has grown six or eight inches high, nip out the top down to the last set of leaves; it will then throw out branches on each side. Let these grow eight or ten inches, then nip them out as before; the tops of each branch, when grown the same height as the others, nip out again; then procure a stick the size of your finger, eighteen inches in length; take hoopskirt wire, twine back and forth alternately, through holes made in the stick equal distances apart; place this firmly in the pot back of the plant, tie the branches to it, and you will have, when in flower, a beautiful and very graceful plant. Having one trained in that way last season, it was the admiration of all who saw it.

"ORIENTATION" OF FRUIT TREES.—It has been suggested more than once that in setting out fruit trees, they should be placed in the same position with reference to the points of the compass as before transplanting. The same idea is brought out in a recent article in *Les Mondes*, where the neglect of this precaution is given as explaining why some trees are weak, contorted, and stunted. They become so, as the writer believes, in the effort to recover their original "orientation." The theory is certainly a plausible, and it is well for those who are setting out trees to make a note of it.

American Grape Vines in France.

Our grape vines are beginning to be appreciated in Europe. L. Laliman, of Bordeaux, who has cultivated with commendable zeal many of our American varieties, is not only getting his reward in the possession of some which resist the ravages of the dreaded root-louse (*Phylloxera vasatrix*) better than any of the European varieties, but in the production of a superior wine. In a late letter he writes:

"The wines which I obtain from certain American varieties age very rapidly, and I may tell you that the Jacques, the Lenoir, the Clinton and Long, [known to us as the Cunningham], mixed together, give me a wine much superior to those I get from our own French varieties. The Delaware, also, mixed with the Taylor, makes a very agreeable wine."

In an article written last April, he further says: "Certain vines of the *cordifolia* (*riparia*) species make a very good wine, and certain hybrids, as well as some varieties of *oslivialis*, produce wines so like our own that we shall find it to our advantage to cultivate them, not only from an alcoholic stand-point, but for an abundance, color and taste which will astonish those who are acquainted with the *labrusca* only. * * * The Americans have made such rapid strides in horticulture of late that, we repeat, they have entirely changed the character of their vineyards. Certain grape growers have succeeded, by hybridization, in so improving their wild vines that their grapes today equal our best products of the kind."

This is not bad for a foreigner. And when we reflect that such of our varieties as have been found to resist the *Phylloxera* here, will be in demand there for grafting purposes, we may hope that our trans-Atlantic brethren will finally get to understand that we can grow good grapes.—*Cor. Rural World*.

HORTICULTURE.—There is a widespread spirit of improvement abroad with reference to Horticulture, and not a few who have engaged in it, have already learned to their great advantage that it is certainly worthy of the most profound investigation—that improvements may be made in this art as well as in others, and that the discoveries of the age, and the developments of science, are furnishing agencies and means for its promotion. And we are pleased to note, that in these days of progress, when, in every department of the arts and sciences, so many new discoveries are being made, and so great advancement is gained, Horticulture is not found lagging. It has, within a few years past, made rapid strides, and is now known and respected as a profession and science in the truest sense of the term; and as such, we may claim that its practical application is inseparably connected with some of the greatest necessities and luxuries of life. But what has already been accomplished, is as nothing to that which remains to be done. This great work must be affected mainly through the dissemination of reliable intelligence, and for this dissemination we must look to the horticultural press.—*Western Horticulturalist*.

REMOVING BULBS.—The *Prairie Farmer* says, that the reason bulbs are oftentimes finer if removed frequently, is that in replanting, each bulb has more space, and open, free ground to grow and perfect themselves in. If left the second year, for example, each single bulb will have become three or more. These are crowded close together. They should, however, give quite an extra number of flowers the next spring, but somewhat decreased in size. If they are left one more year, each bulb will have made efforts to increase itself proportionately, and a general crowding is the result, with still weaker flowers.

THE INFLUENCE OF SPECIFIC GRAVITY ON THE MELTING POINT OF SUBSTANCES.—F. Mohr proves by experiment that substances, the specific gravity of which decreases after fusion, have a lower melting-point, than the original substance. The reversed case cannot well be proved by experiment, as such substances have to pass first through the temperature at which they become more dense, and they therefore can have but one melting point, that is the higher one. The old theory that our silicates are formed by cooling of fluxes he abandons for the reason that natural feldspar has a specific gravity of 2.57 to 2.6 while the same material after it has undergone the melting process has a specific gravity, of 2.3 to 2.35. But other reasons led to the same point, as for instance the fact of the occurrence of feldspar crystals in the trunk of an antediluvian tree, or feldspar crystals fastened to clear calkspar crystals, etc.

NEW METALLIC ALLOY FOR COOKING UTENSILS. It is well known that all alloys containing copper, even in minute proportions, are readily acted on by acids, which makes them dangerous when used for household utensils. M. Helouin has proposed an alloy, under the name of platinum bronze, which is entirely inoxidizable. It is a nickel alloy, prepared from nickel made thoroughly pure by various processes and maceration in concentrated nitric acid. The proportions employed are nickel, 100, tin, 10, and platinum 1—the two latter metals being added to the fused nickel in the proportion of 4 of tin to 1 of platinum, and the remaining 6 parts of tin added subsequently. For bells and sonorous articles, the proportions are slightly varied, viz., nickel, 100, tin, 20, silver 2, and platinum 1.

MISCELLANEOUS.

Illustrations of Instinct.

Dr. Le Baron, the accomplished State Entomologist of Illinois, has recently published his second report upon the noxious insects of the State, a document full of interesting and important facts. The closing paragraphs of the Doctor's first report present so striking a description of what is called "instinct" in insects, that we copy therefrom as follows:

I have mentioned the wonderful instinct of the *Coccus* of the Pine, which prompts the female insects to improve the short period of their active existence, to migrate outwards upon the terminal foliage, where they and the generation succeeding them will find themselves in the midst of the greenest and freshest forage, whilst the males which are to acquire wings, and the consequent power of locomotion, fix themselves indifferently upon the first vacant space that offers, thus indicating a kind of prophetic vision utterly beyond any reach of intelligence which we can reasonably attribute to beings so low in the scale of creation. The student of entomology is continually meeting with instances of this kind, which arrest his attention and excite his wonder, and which baffle his utmost ingenuity to explain.

It is the common instinct of insects which are wood-borers in their larva state, but which have no such power in their subsequent stages, to gnaw their way to the surface of the tree before they stop feeding, so that they can emerge without obstruction after they shall have completed their transformations.

The Plum-gouger (*Anthonomus prunicida*), which in its larval period occupies not the flesh but the kernel of the plum, when it has completed its growth and is ready to transform in the kernel, takes the precaution to gnaw a round hole in the shell, through which it may subsequently emerge. If it did not do so it would be fatally imprisoned, in its future beetle state, within the mature and hardened shell, an event which the Gouger carefully guards against, though the horticulturist might regard it as a consummation devoutly to be wished.

The Disippus-butterfly (*Nymphalis disippus*), lives in its caterpillar state, on different kinds of willow. In this state it passes the winter, inclosed in a willow leaf, rolled into a cylindrical case. But as the leaf would fall like the rest, when touched by frost, or be blown away by the wind, the insect fastens its footstalk with silken threads to the branch on which it grows, and thus securely rides through the frosts and storms of winter.

The larvae of a beautiful East Indian butterfly, the *Thecla Isocrates*, live in companies of a half dozen or more, in the fruit of the pomegranate, and there also pass the pupa state. But before changing to chrysalids, each larva cuts a round hole in the rind, through which the future butterfly, which itself has no teeth, but only a slender flexible proboscis, may be able to escape. and as the worm-eaten fruit would be likely to fall prematurely to the ground the larvae crawl out and make the stem fast to the tree within their web, and then return and go through their transformations.

Now, are we to understand that these insects are really endowed with a prophetic vision? Do they know what will be their own condition the next month or next year, or what will be the future necessities of their offspring which perhaps are yet unborn? We are hardly prepared to attribute to them such superhuman intelligence. If they do not know, then what prompts them to take such wise and far-reaching precautions? Who will answer? I ask the question, but I shall hear no response, for there is no earthly intelligence which can solve the mystery.

I can conceive of the formation of a planet, by the condensation of nebulous matter, in obedience to the law of gravitation. I can form some idea, however unsatisfactory, of the development of organic bodies by the operation of physical laws, responsive to the impressions of surrounding circumstances. But that an insect which was born yesterday, and which will die to-morrow, can, without the invocation of a wisdom superior to her own, adopt a systematic course of conduct having for its object the safety and welfare of her future progeny, which will not spring into active existence till long after she herself shall have perished,—this, it passes the bounds of my imagination to conceive.

It is said that Galen was converted from atheism by the contemplation of the human skeleton; but I confess that nothing has so strongly impressed upon my own mind the presence of an all-pervading intelligence in nature, as the wonderful prophetic instincts of insects.

METALLIC STAIN FOR WOOD.—Soaking the wood in a weak solution of nitrate of silver, and then exposing it to the light, will produce an intense black color. Another way is to boil some chips of logwood in water for about a quarter of an hour. Then wash the piece of wood with it three or four times, allowing it to dry after each washing. Lastly, wash the wood by means of a common painting brush, with a mixture prepared as follows:—Put one ounce of steel or iron filings into two ounces of vinegar, keep the vial near the fire so as to be gently heated for about two hours, then decant the vinegar, and keep it for use.

Combustibility of Iron.

Prof. Magnus, of Berlin, has recently devised a beautiful experiment to demonstrate the combustibility of iron. He takes a straight barmagnet of considerable power, and sprinkles iron filings on one of its poles. These filings, of course, arranged themselves in accordance with the lines of magnetic force, and however closely they may appear to be packed, of course no two of the metallic filaments are parallel, and consequently a certain portion of air is enclosed as in a metallic sponge. The flame of a spirit lamp or gas burner readily ignites the finely divided particles of iron, and it continues to burn most brilliantly for a considerable time.

If the experimenter stands on a little elevation, and waves the magnet to and fro whilst burning, a most magnificent rain of fire is produced. The experiment was first performed in Berlin before the Emperor of Germany and his court, and received much admiration.

The late Professor Faraday used to show the extreme combustibility of iron very strikingly. One of his experiments was to dust fine iron filings through a large copper ring covered with lamp cotton, soaked in alcohol, and set fire to. This produced a very large flame, though by daylight not very visible. The effect produced when the filings fell into it was very fine; the whole flame became intensely luminous as each particle of iron burnt with those brilliant scintillations which are characteristic of its combustion.

As a second experiment, the lecturer would frequently mix some fine filings with gunpowder, and dust the mixture through this flame, or into a dish of burning alcohol. The iron filings burnt at once, as before, but the gunpowder passed through unconsumed, and remained quietly in the dish until the alcohol was nearly consumed, and the flame came in contact with it, when it flashed off with the characteristic puff of smoke, but no scintillations, showing that it was the powder, and not the iron, which had passed through the flame unconsumed. The influence with which the too minute size of the particles, by which a large surface is exposed to the air, has on the combustibility of a substance is well illustrated in pyromorphic iron. If the oxide of iron be reduced, by passing over it a current of hydrogen, the heat employed being less than that of boiling mercury, the metallic iron is left in such a fine state of subdivision as to take fire spontaneously when allowed to fall through the air.

Steamers Without Smokestacks.

It is reported that two Austrian marine officers and a marine engineer have succeeded, by united experiments, in finding a method of conveying away under water the smoke of the furnace of the steam engine, in place of passing it upward through a funnel into the air. They make use of double ventilators, which compress the smoke and force it overboard. For propelling these ventilators they employ, it is said, "according to circumstances, either water-power—that is the pressure of the water between the surface of the water and the place where the apparatus is fixed," or for smaller vessels steam-power. The advantages of this invention are the greater security of ships of war, as in armor-plated ships the only vulnerable part, the funnel, will be taken away. Other advantages will be the saving of space now occupied by the passage of the funnel through the deck as well as security against danger from fire, complete regulation of the draught, and in consequence of that the application of a method for consuming the smoke, thereby effecting a saving of fuel, and finally better ventilation of the boiler. For submarine and torpedo ships, and monitors, this discovery will be of great value, as these last will be rendered quite invulnerable. The trials that have been made have, it is alleged, resulted in a complete success, even to the smallest details.

GERMANY AND THE FRENCH IRON WORKS.—Since the annexation of Alsace and Lorraine to Germany, not a single steel work will be left in the east of France. These various works possess 200 blast furnaces, and 160 puddling furnaces, and produce about 140,000 tons of iron of all kinds per annum. One of the most important of the iron-producing districts of France was the northeastern, which include the country traversed by the rivers Moselle and Meurthe, and which by far the largest portion has been transferred to Germany.

A COLLOSSAL BELL TO RING IN PEACE.—Of the 5,000 French guns taken in the war 22 huge specimens have been set apart for a monster bell to be cast for the cathedral at Cologne. The bell is to weigh 500 cwt., and will be 70 feet high, with a diameter of 13 feet at its base. With the exception of the Ivan Veliki at Moscow, which is a gong rather than a bell, having no clapper, and being struck with a hammer, it will be the largest on the Continent, and will exceed even Big Ben. The casting is to be proceeded with, shortly, in the immediate vicinity of the cathedral spire.

LIQUID INDIAN-INK.—Dissolve the powdered ink in hot water and when deep black add one tenth of its volume of glycerine, and shake well together.

FARMERS IN COUNCIL.

Sonoma County Farmers' Club.

The Club met, Aug. 24th, President Holmes in the chair. The President said: That the excellent attendance of the members of the Club in the past and the interest manifested was an augury of our future success. We must so work that we shall command respect both in the county and throughout the State. From these small beginnings will ensue District and State organizations until the farmers' power shall be felt in the land. Co-operative efforts is one of the features of all industries, and we see daily the good results. By organizing in clubs we diffuse intelligence and promote sociability.

One word as to our club. We have made a code of laws, and obedience to them by every member is essential to good order and progress. We must obtain a suitable room for our meetings, subscribe for the leading newspapers and the agricultural journals, and above all obtain such agricultural and scientific books as are immediately connected with the farmers' interests and studies. By this we form the nucleus of a library which may grow until it shall become an honor to us and to our county.

To-day we must select delegates to the State Farmers' Convention. We are now ready for business.

The Secretary read a communication from the San José Farmers' Club notifying this Club that that Club had reconsidered its action as to electing delegates to the State Farmers' Club and soliciting co-operation in forming a State Convention of Farmers, believing that the present form of a State Club tended to a centralization of power in a few hands.

The question of the day, "Plowing," being in order, Mr. Holmes said: I have been plowing ever since I was a boy and I think I know something of the practical side of the question, yet I cannot say that I have a definite theory which I am constrained at all times to follow. The different kinds of soils and the peculiarity of our seasons as well as their uncertainty make it so difficult and complicated that I doubt if any one theory about plowing can ever be evolved from any known facts. One thing is certain that a thorough manner of plowing is the most important thing to do on a farm; whether you plow deep or shallow do it in the most thorough manner. One kind of soil will admit in one year of one manner of plowing while another year another manner must be adopted, and in this the farmers' judgment must be called into exercise, not because the soil changes but on account of the different seasons or state of the weather. And so with different soils. Our clayey, loamy soil can be plowed when other kinds of soil cannot; so it will not do to say we must plow in the fall or in the spring. In one year shallow is better than deep plowing and vice versa. Thus to form a theory or judgment about the better way to plow we must know all the conditions of soil, culture and season and previous crops. Each farmer must draw from the well of experience the truth of his practice. Let us have the facts first then we may deduce the theory. The experience of each farmer must be called out and I would like to hear from all who have followed each system.

My own plan is to plow as soon as possible and put my grain in immediately. Other farmers have tried summer fallowing with varied success. One season I plowed all summer on adobe land, but it did not work as well as I expected. The rains fell early and continued late and my plans fell through. There is a difference of opinion when to sow grain; one is to plow early, let the soil remain for a short time before sowing; the other is to plow late and sow immediately. There is a right way about this and I would like to learn it and hope those who have tried both methods will give us their experience.

Mr. De Turk—I find it more profitable to raise corn, beans and summer crops than to let land be idle. The farmer's profit will be found not to let a foot of land be idle, raise roots and corn, feed your stock, save manure, enrich your land and recuperate its forces, and leave the land better than you found it.

Mr. Holmes—I think summer-fallow is good, if it can work without respect to seasons. If land is left unseeded or is too late for a crop of wheat, Mr. De Turk's plan is a good one if followed by fall sowing. But equal results will follow if the land is summer fallowed and cultivated so as to get in the grain in the fall. It will not do to say to every farmer, "summer fallow." A system would be easy enough if you were not governed by the seasons. When the law of seasons, of rain and storm is understood, then a system will be evolved which we can all adopt.

Where you do not raise wheat on a large scale it is feasible enough to summer crop. But where you are raising a thousand acres of wheat it is beyond the farmer's power to summer crop but a small portion of his land. To do otherwise would compel him to change his pursuit and become a stock raiser. The truth is we raise too much wheat. We will be wealthier and happier when we divide our land up and devote ourselves to mixed husbandry. By this means we can raise wheat, roots and stock, and if one fails, the others are available and profitable and the land is not deteriorating.

Mr. Whittaker—I find that summer crops clean the land and fertilize it. There is no advantage in land lying fallow. To be sure it

draws some nourishment from the atmosphere but the profit is not immediate. You can summer crop and derive a profit therefrom, while your land is just as rich as if it had laid fallow. I find that you can raise almost twice as much wheat or corn or vegetable land as you could if you continually cropped it in wheat. When you summer crop you are forced to cultivate, and this you do not do on fallow land. You draw more nutriment from the air, keep down weeds, and the manure used that year is in an assimilable form for the future crop of wheat. I agree with Mr. Holmes as to the propriety of diversified crops. I am working on that principle and I find it helps my land.

Mr. Whittaker called on Mr. Peterson to give his experience.

Mr. Peterson said: I am a small farmer and my experience is neither large nor varied. I have some views about the means of success available by every farmer. The fault of farmers is they aim to plow and own more land than they can properly cultivate. Some farmers raise crop after crop of wheat each year gradually diminishing in quantity, burn up their straw and save no manure, and as soon as the crop is harvested sell off, while later their pigs are squealing for something to eat and their cows are dying for food, and they lose more stock in value than the profits of their crop. Farmers have the remedy for hard times within themselves—they grow at Friedlander and monopolies and then play right into their hands. They sell off their crops so close each year that they actually have to buy their own flour at enhanced prices in the winter. I have no doubt sometimes farmers buy their own crop back again. If you want to rest your wheat land, if you must raise and sell wheat, then raise corn in alternate years, manure it deep and rich, cultivate it thoroughly and the succeeding year your harvest will be doubled. Corn is in demand and is a profitable crop. As I say, I only farm a few acres. I sell no grain, never hear a threshing machine on the place—what I raise I feed to stock. I save every atom of manure. I even clean out hen houses once a week, and find it pays in rich manure and health of fowls. I think my neighbors will say that I raise better crops than any of them. Some day we will have to turn over the plowshares to our children, to those who come after us, and as we have received a rich inheritance which it is our duty to transmit to our posterity unimpaired, we have no right, moral or legal, to rob the land as we are doing. We should make it richer that our descendants may call us blessed. If we do not they will write "skinflint, robber, despoiler," on our tombstones. Mr. President, I have found the secret of good plowing; it is to plow good land, whether you plow deep or shallow; and to make good land is to manure it, and the question of deep or shallow plowing is only secondary.

Mr. Davis—Some say that the reason land which is summer cropped produces a better crop is because of the cultivation. I think a piece of land broken up for fallow, if the same amount of labor is expended on it that if cropped, would be a much better crop of grain than if summer cropped. The mere growing of corn does not help the land; it is only the cultivation. Indeed, something is lost; for the corn must take from the soil some element of nutrition, which, unless replaced, leaves the soil in a worse condition than if it laid fallow. Corn and wheat feed on the same food, and one crop of corn must take from the succeeding crop of wheat some of its food. Corn forces one to cultivate, to pulverize the soil, and keep down the weeds; hence, I say that summer fallowing, if supplemented by cultivation will always be preferable to summer cropping.

I cannot say that I have a definite opinion as to the relative merits of deep and shallow plowing; indeed I must say that at some seasons deep plowing is quite detrimental. If there is anything good in deep plowing, it is by the fine disintegration of the soil, by pulverizing and nicely preparing the bed for what you put in. It is the stirring up of the soil and exposure to the sun that imparts to the soil the capacity to produce. Beans and corn absorb the food that wheat requires. We must keep weeds down and then we shall see good effects from summer fallowing. There is no way to get at a strict and logical determination as to the merits of shallow or deep plowing. Their respective merits must be determined by each man's experience on his own land.

I have noticed the effects of the various times of sowing after plowing. If plowing is followed by frosts I wait a week or ten days until the frost shall have pulverized the soil, before I sow, and this accounts for the fact that late yields better crops than early sowing. The ground is more uniformly pulverized by frost than by the plow.

Mr. Holmes—If weeds come on fallow land should you not plow them in?

Mr. Davis—Yes, sir; keep down the weeds. Weeds feed on the soil as much as a crop.

Dr. Gordon—I am an admirer of small farming, but am not a practical farmer myself. I thought it would be interesting for you to know how they farm in other countries. In South America, plowing is done with a crooked stick. I lived for a number of years in Chili, and paid some attention to their manner of farming. They raise the finest crops of wheat imaginable, but they only raise a crop in two years. Commence plowing in August and plow as long as they can, about four or five inches deep, then after the crop is taken off the land lies idle for two years, the third season it is again sowed. The land is also plowed the seasons it lies idle; sometimes a crop of beans

intervenes and then the grain crop is delayed another year. The average yield of land is much larger than that of ours. Some farm on a large scale, but I observed that the small farmers raised larger crops. The land is crossed four times in plowing.

Adjourned to meet September 14th.—*Sonoma Democrat*.

Napa County Farmers' Club.

Club met pursuant to adjournment, Saturday, Aug. 29th, Mr. J. B. Saul presiding. The meeting was more interesting than any previous ones. Subjects of real importance and practical utility, are now becoming the rule. Our space prevents our making even a synopsis of the many excellent remarks made by different members, so we will give only the conclusions, or general sentiment of the Club: Mr. Henning spoke of matters that had been discussed before the Santa Clara Farmers' Club, and said that that Club had proofs thought to be reliable, that a strong effort is being made by the sack dealers, shippers, and others inimical to the farmers' interests, to get control of the proposed Farmers' State Club, and defeat the action of the farmers by getting control of their organization. The Santa Clara Club thought that in the election of delegates to the State Club the county Clubs ought to restrict their action—elect them to attend to one branch of business—none others. Have them consider one particular question alone, and have no power to represent local clubs in any other matters. In this way we can have State Conventions that cannot be controlled by monopolists. This, it was thought, would be better than a permanent organization. In regard to the proposed Farmers' Exchange, the same Club rather disliked it. It was thought advisable to defer any definite action upon the matter till further information be received—especially till after the present harvest.

The report of committee appointed by the Oakland Farmers' Club to consider the advisability of a State organization of the farmers was read. The report demonstrated that the price of grain in Liverpool and other foreign markets was no criterion for prices here. For instance, on the 21st of September of last year, when wheat in San Francisco was quoted at \$2.70, the Liverpool market was less than eight cents more this year, when the grain shylarks, of San Francisco, only offer \$1.55. The wheat speculators are shown to be actually paying \$22 per ton less for wheat this year than last, while there is not a greater difference in the selling market than eight cents. It was claimed by some that the cause of the difference in this and last year's market prices here for wheat was the extra cost of shipping grain. Freight now to Liverpool is \$20 per ton nominally. But the truth of the matter is the ships were all chartered by the great wheat mogul, Friedlander, at from \$10 to \$14 per ton. The freights last year ranged from \$10 to \$12.50. Wheat is now being shipped by steamer from Philadelphia to Liverpool at \$6 per ton. The whole results from a heartless monopoly of wheat sharps, bread buncaneers, who have got control of the shipping in this State and charge exorbitant prices. Whenever they re-charter one of their ships they clear the snugg little sum of \$5 and upwards on every ton.

The report concludes with the following sensible language:

We deem it now too late to perfect any organization that shall be effective the present season. But farmers have the power to make their efforts felt, and at once; and that is by holding on to their grain crop until a fair price shall be offered. Those in immediate want of money can get what advances they may need on their wheat, and sell it when it reaches a living price. Compel these ship-grabbers to pay heavy demurrage on their empty vessels for a few months, and it will bring them to terms.

After this report was read, a communication from the San Joaquin Club, asking for information in regard to the experience of members here using gypsum as a fertilizer.

The question was not discussed, but Mr. Fisher stated that in the Eastern States people used about one bushel per acre. He thought February the best time to sow it here. To get a car to load with gypsum and to bring it out here would cost about \$400. The gypsum in the East costs about six cents per bushel. It would be so costly delivered here that the speaker thought its use, except on garden lands, could not be profitable. The California gypsum he considered entirely worthless. He had used several barrels of it, and formed his conclusion from the results of his using it. There is a mine of reported gypsum in Southern California, and a company importing the same and selling it as a fertilizer. If that sold to him was a sample, he would advise farmers to keep it off their lands. We must look to the East for what gypsum we used that was of a good quality.

Mr. Nash thought that by a proper union of aims and means, much good will result from our local clubs. The clubs already organized in the State, represent a capital of over fifty million dollars, and new clubs are continually being formed. He thought all the material good that could be done the present season, would be to get well organized for next. Mr. Gridley thought measures might be taken the present season to materially modify the farmers' condition. He thought ships might be chartered by the farmers, and something done at shipping grain, independent of the wheat

rings. His experience at shipping was encouraging. Mr. Trubody spoke about the charges made by the railroad Company, on fruit, from different parts of the valley, and showed that the scheme was unreasonable and extortionate. From Sausalito to San Francisco the charges was ten cents; from Oak Knoll, twelve cents (some said only ten); from Trubody's and Yountville, eighteen cents. Here, for a difference of only about one and one-half miles, the railroad charged one-third more. He thought a union of the farmers not to patronize the road, but haul their fruit to Napa and ship by steamer, would be far more profitable, and would bring the Company to terms. Mr. Nash gave as his experience, that such a course can be pursued to great advantage.

Mr. N. Coombs hoped the delegates to the State Farmers' Club would make it their business more particularly to find means to harmonize and unite the farmers—means to enable them to become able to help themselves and be independent. There was no good to come from delegates meeting in Sacramento and denouncing railroads, etc., unless some means were devised of reaching these by becoming independent of them. We have the means within ourselves of bringing these corporations to terms. The way is to unite, combine and assist one another. When we do so, capitalists, ships, etc., will be at our control, and local transportation the same. But so long as farmers do not organize to help themselves it is idle to complain of the railroad.

Mr. Pendegast was called upon to address the Club. He said he knew no class of men who took so little interest in having their affairs represented in the Legislature as the farmers. The merchants, the manufacturers, the corporation, the mechanics, all had combinations to have their interests represented in the Legislature, but the farmers did not. One matter that is of vital interest to the farmers has been overlooked by many—the advantage of having San Francisco a free port. Now it costs a ship bearing 2,000 tons burden, for pilotage and harbor charges, over \$2,000; other sized ships at the same ratio. This had the direct tendency to discourage shipping and commerce. It would be better if the State assumed the payment of all harbor charges and paid the same by a direct tax. As it now is the people pay these heavy charges in increased prices, and the commerce of the State is greatly crippled. Another matter that would go far towards liberating the farmers from the bondage to capitalists is to be found in a Farmers' Bank. Let the various Clubs form a bank, or get some established bank to act as their agent, receive and disburse their money. Let it be understood, that the farmer when he needs money can go to the bank and draw out what he needs, pledging his crops for the same, but have it so that the farmers can keep their crops till prices are suitable for a sale. Men who have means generally get high prices by holding on to their crops. The poor man, by the aid of such a bank, could be enabled to do the same. It is generally understood that the warehouse man who advances money on a crop is to have the same placed at his disposal when harvested. The farmers can only help themselves by multiplying their organizations and sticking to them; make themselves independent by helping themselves. When thorough unanimity is established the whole subject will be under the control of the farmers.

Mr. Saul thought monopolies to-day are the terrors of the farmers, and must be met and fought. He was of the opinion that the people of San Francisco wished to have that a port of entry. But she is the prey of the monopolists, who influence the legislators from the interior.

The greater portion of the business men of that city and the people are using every effort to get to be a free port, but the monopolists, aided by members from the interior, refuse. She has even offered to be taxed to pay all the charges of a free port. She has not always been represented by the right sort of men, but generally she was made to occupy a false position by these corporations whose interests it is to cripple that city and the State so they can have everything their own way.

The same was made the special subject for Saturday, Sept. 7th.—*Napa Reporter*.

Sacramento Farmers' Club.

The Club met on Saturday, September 7th, President Baker presiding.

The report of the committee on the fruit festival held at East Park on the afternoon of Saturday, August 31st, was read and approved.

Stewart moved that a committee of seven be appointed by the Chair to receive the delegates and members of the different clubs of the State that would come to this city during the Fair, and make arrangements for a hall for the meeting of the State Farmers' Club.

Aiken thought the delegates appointed by this club to the State Farmers' Club could act as a reception committee.

Other members thought that the appointment of such a committee was useless. The meeting of the State Club will be held on the 23d inst., and all that would be required was to announce the place and hour of meeting.

On motion of Aiken the delegates appointed by this club were given discretionary power in the matter of procuring a hall and making all other necessary arrangements.

Stewart renewed his motion that a committee of seven be appointed to receive the delegates and members of the other clubs, and the motion prevailed. The Chair appointed on the Committee of Reception, T. K. Stewart, G. T. Rich, J. H. Carrington, Robert Williamson, J.

R. Johnston, P. H. Murphy, and A. H. McDonald.

The Secretary was given until next meeting to submit his report, and he was directed to report at the end of each quarter when the dues are payable.

Greenlaw moved that after the 1st of October the dues of the society be reduced to twenty-five cents per month, and the motion prevailed. The claim of the Secretary for two months' services was allowed.

On motion of Rutter the thanks of the club were tendered to the parties who exhibited flowers and fruit at the festival.

Manlove moved that when this club adjourns it adjourns to meet again on the first Saturday in October, and the motion prevailed.

Stewart moved that the members of the club exhibit their fruit, etc., in the State Fair as a club; that all the fruit exhibited by the members be grouped together—but each exhibitor will have his display labeled with his name. The motion prevailed.

On motion of Manlove the club adjourned.

San Joaquin Farmers' Club.

Club met at 2 P. M. September 7th, President Holden in the chair. G. W. Sperry reported to the Club that Walter Matteson was building a machine for sacking grain at the thrasher, and asking the club to appoint a committee to test its work. Communication placed on file. After a desultory discussion on the subject of a Farmers' Bank, the Club adjourned.

AGRICULTURAL NOTES.

CALIFORNIA.

CONTRA COSTA.

Gazette, Sept. 7: A GOOD CORN PATCH.—Mr. Rosolve Stanford, about a mile south of Pacheco has six acres of corn which is likely to prove a profitable crop. The land is sandy loam, and being almost the only land he had out of water during the floods of last winter, it was so hard tramped by his cattle that herded on it during the wet weather, that it was unfit to plow in season for wheat; and he accordingly plowed it late in the spring and planted it with corn. The first plowing was about four inches, after which it was harrowed; then cross plowed eight inches deep, and planted at the same time by dropping the corn in every third furrow, and finished with two harrowings, which we understand Mr. Stanford, is all the work the crop has had. Five acres of the piece was planted between the 10th and 15th of May, and one acre was planted on the 15th of June. The earliest planted, a yellow variety, is now hard and ready to shell; and the later planting, a white variety, is not yet quite matured. The rows in the field are three feet apart and the stalks will average better than two ears each. It is estimated by competent judges that the yield of shell corn from the field will not be less than fifty bushels per acre, and Mr. Sanford thinks the stalks and fodder from each acre will not be less than seven tons, and will be equal in value, for feeding, to four tons of hay. Now, upon these estimates, and we think they are correct, Mr. Sanford's land in corn, with no more labor, will net him more than four times the profit that could have been realized from it in wheat.

MARIPOSA.

Gazette, Sept. 6: RAIN.—Contrary to the general rule for regulating the weather at this season of the year, we were visited with a considerable shower of rain last Friday night, followed by occasional visitations of the same sort on Saturday. Some apprehensions were felt for the exposed wheat crops in the lower counties, lying about in all stages, from un-threshed and in stacks to the thousands on thousands of sacks piled out in the open air ready for shipment. Persons arriving from Merced and Stanislaus inform us that along the plains the rain-fall was much lighter, and no damage has been done.

MERCED.

Tribune, Sept. 7: OUR WATER FACILITIES.—No part of the State is attracting more attention than the great San Joaquin Valley, in which this county is so conspicuously located. Its water supply is equal to all the demands that can possibly be made upon it for irrigating and manufacturing purposes. The rivers have a large volume all the year round, with a sufficient fall to admit of a general distribution into the uplands and other arid regions, where the soils are rich, and need only this kind of water to make them productive in all the resources of the husbandman. Wherever a canal is dug to drain off the surplus quantity, its supply can be rendered adequate to the propulsion of machinery at favorable points along its entire line. The utilizing of these waters for drenching the soil, need in no respect interfere with their application to the running of machinery. If wasted at one spot, they can be taken up at another, and from their great abundance afford a never-failing power as well for manufacturing as for agricultural uses.

MONTEREY.

Democrat, Sept. 7: SPECULATION IN POTATOES.—It seems to be understood that the potato crop will this year be scant. Speculators, we are told, are buying of farmers on the Cooper ranch at rates of from \$40 to \$60 per acre, buyer to dig and sack.

THE EFFECT.—A convenient subdivision of lands adjoining the highroad from Hilltown to Salinas City is nearly completed. Its effect is

conspicuous, in the thrifty and handsome appearance of the homesteads which now line the road on either side.

RAIN IN AUGUST.—The rain which fell here Friday last was quite heavy. In the roads leading out of town the water was next morning standing in pools. From Castroville we have a similar report, and up the Valley light showers fell here and there. It seems to be accepted as a sign of early rains, and certainly was a very extraordinary occurrence for the season. Of course it will urge forward threshing, but from the immense quantity of grain which is in stack, considerable being also not yet cut, it is hardly possible all will be secured before the fall rains commence.

NEVADA.

Republican, Sept. 7: CAUGHT POACHING.—Mr. Stewart caught an individual yesterday leisurely using the rod and line in one of the fish ponds of Kelley & Stewart near Donner Lake. As the pond has only a few square rods in area, and contains 25,000 trout, the angler was having a good time, until Mr. Stewart suddenly appeared on the ground and put a stop to that kind of angling. The fisherman excused himself by saying that he supposed the fish-pond was merely an extension of Donner Lake. Stewart succeeded in convincing him of his mistake. A compromise was finally made, the poacher paying ten dollars for the fish he had caught—about enough to weigh a pound. The fellow thought it very expensive fishing and probably will be careful in the future how he throws his hook and line into a private fish pond.

SNOW ON THE RIDGE.—Mr. Faust, the driver of the stage running between this city and Omega, informs us that there was quite a snow-storm on the summit range last Tuesday. About one foot of snow fell. This, we believe is the earliest storm on record. It has been known to snow on or about the 15th of this month, but never prior to that time.

A MILK MAN.—In the year 1855 or 1856, or thereabouts, says the Grass Valley Union, we knew a man in Nevada City who milked two or three cows, and who used to walk around the town and sell the lactical fluid. He carried two cans on a wooden yoke which was placed over his neck and shoulders. He has flourished since then, and now has lauds and horned cattle down in Monterey county. He is now engaged in milking 1,200 cows and he makes butter and cheese. Next spring he will milk 1,500 cows. His cows are of excellent stock, consisting of Devon, Short-horn and Alderney blood. The name of this successful milkist and ex-Nevada city man is S. C. Abbott. His property is assessed this year, at \$400,000 and we doubt much if he would sell out at that figure.

SACRAMENTO.

Folsom Telegraph, Sep. 7: A GREAT MILL.—At Pleasant Valley, in El Dorado county, is situated the largest mill for the manufacture of doors, sashes and blinds, on the Pacific coast, made from the best sugar pine in the world, which still abounds in that portion of the State. This establishment is now turning out twelve hundred finished doors per week, besides large quantities of blinds and sashes. The proprietor, Mr. Hooper, is a man of great enterprise and is one of the kind of men that this State is sadly in need of, in other branches of industry, to develop our great resources.

A NEW ENTERPRISE.—We are credibly informed that the Central Pacific R. R. Co. intend shortly to erect a large rolling mill at their works at Sacramento City, for the purpose of working over old rails and the large amount of old iron that they continually accumulate. This will give employment to two or three hundred more men.

A COLONY.—Sacramento county will soon have a colony in her midst. The Tide Land Reclamation Company have made a sale of 8,000 acres of land on Grand Island, in the Sacramento river to a Kentuckian, who is acting on behalf of a company who will divide it up into small farms and settle upon it a colony from that State, which is already formed and ready to start. There will be about 20 families in the colony.

SAN BERNARDINO.

Guardian, Aug. 31: SEVERE WIND AND RAIN STORM.—Monday afternoon, about 2 o'clock, our town was visited by the severest rain and wind storm ever known in this locality. There could be no idea formed of the incalculable injury it would have done had the terrible storm continued half an hour longer, fortunately, however, it was not of long duration, the severest part of it lasting only about twenty minutes, but even in this short time considerable damage was done to some buildings, fruit and shade trees, fences, corn crops etc. For three or four days previous the weather had been extremely close and sultry, and on Monday morning early, dark and heavy clouds began to gather around the mountains east and south of town. About 2 o'clock in the afternoon the storm came in all its fury, accompanied with lightning and heavy peals of thunder.

SAN JOAQUIN.

Independent, Sept. 7: "Parties in Merced, Fresno, Tulare and Kern counties, who planted cotton this year are expecting it to yield at the rate of a bale per acre. It can be cultivated with comparatively little cost, and at the present prices will pay a net profit of from forty to sixty dollars per acre. Land capable of producing cotton should therefore be devoted to its growth. Without doubt it will be ascertained that other crops can be more profitably raised on a large portion of the land now wholly

devoted to the cultivation of wheat, and our farmers should make experiments to test the capabilities of their soil, to produce a greater diversity of crops so as to become more independent of the fluctuations of the wheat market.

SOLANO.

Chronicle, Sept. 7th: HEAVY SHOWERS.—On Friday of last week when the lowering clouds threatened rain in this vicinity, Lake county was visited by a heavy shower of two hours' duration. No damage has been reported to the crops.

THE ELEVATOR.—The Elevator has had steam up for the past three days, and its bins are being stored with grain in bulk. The Elevator has a capacity for storing several thousand tons of grain in bulk.

GRAIN MOVEMENTS.—Sixty-three car-loads of wheat, 630 tons, arrived at South Vallejo yesterday.

STARTED UP.—The barrel factory, after a short suspension, has again resumed operations.

PORKERS.—The *New World* was considerably behind time in her departure from South Vallejo this A. M., owing to a heavy shipment of hogs. A large number of these animals are being shipped lately.

WINE SHIPMENTS.—A large amount of wine is going through this place for San Francisco at the present time. Hardly a day passes without a heavy shipment. The wine growers in the upper country are now clearing their cellars preparatory to receiving the new crop.

STANISLAUS.

News, Sept. 6: A BIG DAY'S WORK.—We have often heard marvelous stories told of feats performed at wood cutting, mowing grass, cutting grain with a cradle and other old-style manly performances, but for threshing grain, the following surpasses any thing we have yet heard of in our neighborhood. On last Friday, August 30th, Mr. John Murphy moved his Pitt's threshing machine, run by Harbin & Loyed, one mile and a half and threshed, in good order, 2,280 bushels of wheat, and moved four times to different stacks. This extraordinary day's work was done on Mr. Murphy's farm, about nine miles from this place, and from grain that did not average over thirty bushels to the acre. There were but two feeders to the machine, Harbin and Loyed; two forks managed by Alfred Germain and Ed. Rivard; Tablemen, John Morton and Patrick Tobin; sack sewer, George Wilkinson; Engineer, C. D. Hoffman, the whole force amounting to thirteen men. This work, we are assured was actually done without working unusual hours, the machine being stopped in the evening as soon as others in the same locality. If this work can be excelled or even equalled, we would be pleased to hear of it, as we consider it an item worth chronicling.

Nails vs. Screws.

EDS. PRESS.—An item in the *RURAL* with the above title reversed, leads me to give my own experience in such matters. No doubt screws should be much more generally used by mechanics on inside work; but upon outside work, or any work exposed to wetting and drying, screws are of little use. They soon rust, rot the wood around them and draw out, looking like screws without threads.

Dipping them in thick paint or tallow as they are driven will help the matter much. I never drive screws without thus dipping the points; or if in soft wood and inside work, dip in glue; there is nothing better than this to make them hold well in dry, soft wood; and the labor saved in driving them fully compensates for the trouble of dipping in either of these substances.

Upon machinery where there is much vibration or reciprocal strain, screws should not be used. Either bolts, rivets or treenails should be substituted and especially if the wood be soft. Cleats to a wagon box should be secured with either rivets or small bolts. These small bolts are now very cheap, generally good, and should be used much more than they are.

For the farmer, good wrought nails possess several advantages; they are cheap—12½ cents will buy as many as \$1.50 will of screws—they can always be driven and clinched down securely with the hammer, without previous boring or countersinking; and for all rough, outside work will really hold better than screws.

D. M. LOCKE.

Sant Cruz, Cal.

FARMERS, ATTENTION!—Do not rub linseed oil on your fork, shovel and rake handles, do not paint your plows and reapers, do not use any rust preventive on the iron and steel parts; and above all, leave everything out of doors. You really have no idea how soon you will possess a new set of tools, provided you have a balance at the bank, if you abandon that most objectionable structure, the tool-house.—*Ec.*

The natural laws that govern the fruitfulness of all tilled ground, meadows and pastures, are the same everywhere. Let us study them. Why did the Incas of Peru decree that death should be the punishment of any one who should kill one of the guano birds, whether on land or water? Because a great moral principle rests on the necessity of feeding the soil that feeds mankind.—*Dr. Daniel Lee.*

The Tomato.

There is nothing that can be grown in the garden so easily and so quickly, which can be prepared for the table in so many ways as the tomato. On many new farms and some old ones, there is no fruit; for the housekeeper thus situated we have much sympathy, and while waiting for fruit trees to grow she will find the tomato the best substitute for fruit of every kind. Though not particularly fond of its flavor we have learned to prize it very highly for the table. If skillfully prepared in some one of the many ways in which it may be cooked the most fastidious will find it very desirable where the fruit is not abundant. When nearly full grown, before ripening, it may be sliced with onions cooked thoroughly, seasoned with butter, salt, pepper, a few bread crumbs added; this is a good breakfast dish, or when ripe, cook in the same manner, seasoning only with butter, salt and pepper and place on buttered toast.

We have seen small bits of dough in the form of dumplings dropped in while cooking, in which case they will require more time, but much cooking does not spoil tomatoes. It may be preserved either green or ripe, if green, much ginger should be added which will give the appearance and flavor very similar to the foreign ginger preserves. There are many ways in which it may be made into pickles, both sweet and sour; it may be put up in brine for future use, or dried or canned, and then used in any of the many ways so often published in books and papers. After a slight frost has killed the foliage, the vines may be gathered, hung up in any outbuilding, where all the larger tomatoes will ripen before cold weather. It is very showy in the fruit-basket where the scarlet, crimson, white and yellow varieties form a pleasing contrast, and when upon the table sliced, awaiting cream and sugar they are certainly attractive. We give two methods of our own for cooking the tomato which we have found very satisfactory as a substitute for the apple.

Tomato Pie.

Line a plate with good crust, take half a cup of vinegar, tablespoonful flour, mix evenly, pour this on the prepared plate, then slice in tomatoes till full as you wish; the white or yellow varieties are best for this purpose; season with cinnamon or whatever you like, cover and bake nicely. Be sure and have good crust; there can never be a good pie of any kind with poor crust.

Tomato Dumplings.

Slice in a stew pan or basin two good-sized tomatoes, put them on the stove to cook while preparing the following batter: Take one cup full of sour cream, half a cup of sour milk, half a heaping teaspoonful of saleratus, a little salt, make very thick with flour and spread over the tomatoes, set in oven to bake. This should be eaten with some sauce, such as sugar-water thickened with flour, seasoned with butter, nutmegs, lemons, or enough good vinegar to make it slightly sour.—*H. M. B. in Jour. Farm.*

Cattle Peddlers.

Says the *Western Farmer*: In nine cases out of ten those who buy from cattle peddlers are swindled. There are two ways in which they swindle the people. In one case they buy a lot of grade animals and forge pedigrees. In other cases they buy a few thoroughbreds and obtain certified pedigrees from the breeder. These they pretend to have lost, and write him and obtain another set complete. They have now two sets of pedigrees, and buy up a lot of grade cattle resembling in external marks the animals described in the pedigrees, and start on their travels selling these grades as the animals to which the pedigrees refer, giving the purchaser one of the written pedigrees obtained from the breeder from whom they purchased the thoroughbreds. The real animals they leave at home, and sell on on the Herd Book record, after they have sold two grades on the written pedigrees. Don't buy of a cattle peddler. Every reputable breeder can sell his surplus stock at home; and the man who picks up a lot of cattle bred by somebody else to peddle around over the country, is not to be trusted for a moment.

SHEEP FOR FOOD.—The cost of producing mutton, after allowing for the food, is much less than that of beef; yet good mutton sells in the market for nearly as much as beef. The demand for good sheep in this country for the butcher is active, and near large towns the mutton and early lambs can be made the largest source of profit. There the grades of the combining wools will be found most profitable, owing to their greater size and early maturity. The Southdowns will pay equally well for lambs and mutton, but will not pay as well for wool. In England, where the population is dense, it is one of their chief sources of animal food for its inhabitants. Even in Australia it is beginning to furnish a source of profit, instead of this being confined entirely to the wool. Some idea may be formed of the demand in this country when we reflect that there were sold, in the markets of New York city, for the year 1871, an average of over 25,000 sheep weekly, or one million three hundred thousand during the year.—*Hon. E. Stilson.*

Interesting Lecture on Preserving Fruit and Other Articles.

By E. S. CARR, M. D., L. L. D., PROF. AGRICULTURE AND HORTICULTURE, UNIVERSITY OF CAL.—BEFORE THE OAKLAND FARMING, HORTICULTURAL AND INDUSTRIAL CLUB, AUG. 3RD, 1872.

[Reported for the Press].

Ladies and gentlemen, I propose to give you a talk on the preservation of food in general, so as to place before your minds some of the leading ideas that lie at the foundation of the subject—that of meats and vegetables as well as that of fruit. The entire object of all processes tending toward this end—the preservation of food—is to prevent its decay. It is of course a well-known fact that organized substances, vegetable as well as animal, are much more prone to undergo change than purely mineral ones. This arises from their structure and the composition of the materials that enter into them. When we examine into their composition we find that they are more prone to undergo decay than those of mineral masses. These substances that enter into the composition of food are principally four in number. One is carbon, which is found in a pure state in the diamond, and in charcoal, and which forms, in the state of carbonic acid gas, the greater proportion of all vegetable substances; oxygen, which forms by weight nearly a fourth of the atmosphere. Nitrogen, which forms by weight about three-fourths of the atmosphere, and hydrogen which forms eight-ninths of water. Now these elements form the greater proportion of all organized substances. There are others which exist in small quantities, but we may leave them out of consideration. Take the three which are found in a pure state only as gaseous bodies. Hydrogen is the lightest, and all in their elementary state are gaseous bodies. Let me call your attention to one of them. Nitrogen is the most indifferent substance in nature. All bodies that contain it are more prone to undergo decomposition than others. It exists in common nitrates as one of the principal ingredients of gunpowder, and we all know how readily it there undergoes decomposition. In combination with it no compound is so stable as otherwise. All organized bodies contain more or less of it. Starch does not contain any of it, nor sugar either. This is one reason that neither starch nor sugar decay in a pure form. But fresh meat and fruits will, because they always contain more or less of it. Carbon is evolved by combustion and by decay, and it is well known that

Combustion is Only One Form of Decay.

All solid and liquid bodies that contain nitrogen are much more prone to undergo decomposition and decay. So we see from the very nature of the materials that form the fruits, vegetables, and meats, the reasons why they are prone to undergo decay. And this is what we try to prevent by all processes of preservation. I have put down on the blackboard the

Circumstances Favorable for Decay.

In order to have decay we need the presence of air, water, and heat—heat of from 40° to 200°. If we have such a temperature and have water and air present, we have all the conditions necessary for the decomposition and decay of the substances of food. If we have only one of these conditions absent, decay will not take place. If we have the usual temperature, between 40° and 200°, and have water but no air, no decay takes place. The reason is this, that air only, contains in a free state the elements which can

Tear to Pieces Organic Substances.

Vegetable and animal; oxygen is the great leveler—it tears to pieces organized bodies, but only in a free state—only free oxygen can do this. You all know many of its characteristics. It makes gas burn, and oil and candles. It takes hold of them and tears them in pieces; and burning is one form of it. So it is with all ordinary decay of animal and vegetable matter which is placed in the soil or remains on the surface—oxygen causes it. If it is moist and we have oxygen present then it goes to work and tears it in pieces and produces ordinary decay, whence arises new and simpler combinations than before. Suppose we have oxygen and water but

A Temperature Below 40 Degrees.

Down to 32°, where water freezes, we have no decomposition. Even above that point at which water freezes we can have no decomposition, and the oxygen cannot work. If air is present and the proper temperature, but no water, decay will not take place.

When we Dry Our Meats

We may have a high temperature and all the other necessary conditions, but there is no decay. We must have water to produce fermentation and motion. A substance that causes decay must come into contact with that which is acted on. When there is water present it overcomes the elastic force of oxygen so that it can corrode and tear away. Take away the water and air cannot come in contact with it. We must have air, water, and a temperature of from 40° to 200°.

A Temperature above 200 Degrees.

It is too hot for this decomposition. If we understand this, we understand all that

is necessary to attend to in drying meats. Let us look in the first place at the influence of water. We preserve a great deal of food by drying it. We cannot take the water away entirely. Take a piece of wood, ever so well seasoned, and we can take from it from fifteen to twenty per cent. of water; there is so little left, that it will not readily decay. We preserve food by exhausting the water from it—by drying it. This we do gradually by an elevated temperature, though water will pass off at the freezing point. Ice in a dry atmosphere will show signs of vapor. We get rid of the water that exists in substances which we wish to preserve by applying heat, and driving it off in vapor. Take a piece of meat, dry it and the water will evaporate and pass off, leaving so little, that it will not decay because the oxygen cannot come into contact with the hydrogen. In some dry climates nothing will readily undergo decay. The atmosphere is very dry, so that it will readily take away water in the form of vapor. You are aware of course that in such climates water will dry off the body more rapidly than elsewhere. In the desert places of Arizona, people can hardly live twenty-four hours without water. It passes off so rapidly in that dry atmosphere, that intense thirst is quickly produced. So that when meat, fruit, vegetables, etc., do not dry readily in ordinary circumstances we must use artificial heat and mechanical appliances; of these that exist there are various kinds. There is

An Excellent Process for Drying Fruits

Which has been introduced on this coast at Sacramento, and Santa Clara. It consists of a tunnel five feet square and fifteen feet long, where the fruit is dried after being prepared by having the stones taken out, the skins peeled off, etc. The fruit is placed in tiers in the tunnel, on shelves, one above the other. The air in the bottom is heated by pipes to 180 degrees—at the top it will be about 120 degrees. The mechanical arrangements are such that the shelves fit in nearly air-tight, and move by four continuous chains that have brackets connected with them on which the shelves rest. As the chains revolve the shelves come down, and are discharged in rotation near the bottom. The shelves are so arranged in the tunnel that a current of hot air passing through takes away rapidly moisture enough, so that the fruit will be able to be kept a very long time. They are thus dried more rapidly than if exposed to the air at an ordinary temperature, or even warmer air. We can by this method rapidly prevent changes that represent incipient decomposition in the process of drying and preserving, better than under any other circumstances. The process was patented in 1860 or 1862, in Baltimore. Some one in New York two or three years since got a patent for pretty nearly the same process. It is a simple and quick method, and one by which we can get rid of the moisture and preserve the natural qualities of the fruit without being impaired as they are in the ordinary process of drying. Fruits of all kinds after treatment present almost the same flavor as the fresh fruits themselves. The same principles that are applied in drying fruits, are also applied in drying and preserving meats. We may make use of artificial warmth to get rid of the moisture but the meats will only keep good a short time. All these substances that are used as food may be

Preserved by Excluding Atmospheric Air.

It is several centuries since the first attempts were made to preserve meats and fruits by excluding the air. All have for their object the getting rid of the air, as we may have water, and the proper temperature for chemical change, but if the air is excluded, there will be no decomposition. It matters not whether substances are liquid or solid, we can preserve them by excluding the air. In the common process of drying fruits by exposing them to atmospheric air, we have a kind of incipient decay setting in. Exclude the air from fruits, and there will be no decay, they will last a thousand years. There may be a favorable temperature and water but there will be no decay, because the oxygen is excluded in excluding the air. It is the same with solid articles, and with all animal and vegetable substances. We may get rid of the air by pumping it out. This process of preserving is often used in connection with others. The whole process of preserving fruits in jars or cans depends upon it. Let a jar of this sort, (holding up a common glass jar), be filled with fruit; we put in syrup which excludes the air by filling up the interstices between the pieces of fruit, there will still be a little air in the upper part, which we expel by heat. We cannot apply a heat of 212°, or the glass will break. But we put the jar in a vessel of cold water and accumulate heat till we elevate the temperature sufficiently to drive all the air out. The water made into vapor is too driven out. Then put the stopper in to prevent the air from going in. Now if this is done perfectly, the arrangements we make use of will not allow the air to pass in, and the fruit will keep a very long time. In this connection let me call your attention to a

New Kind of Jar

Handed me this evening, more simple in construction than the ordinary one, with a projecting rim of glass on the inside. It is covered simply with a metallic cover, japanned on the inside so that the acid of the fruit can act only a little on the projecting metallic parts. It comes against the inner projecting parts and fits tightly. India rubber fitted on the upper surface of the glass makes it air-tight. Through a small opening on one side we can let the air in by inserting the point of a knife between the cover and the India rubber.

By putting the knife on the top of the India rubber, and pressing downward, the air can be easily admitted and its pressure, which is equal to fifteen pounds to the square inch, easily removed. In the case of the ordinary fruit jar, the fruit is put in and covered with syrup and heat applied while the jar is opened. In this jar the cover is kept on loosely while the fruit is heated. By heating the fruit in an open vessel some of the flavoring qualities will escape. If we heat it in a confined vessel we obviate the difficulty. It is said that this jar effects this desirable object. It is placed in cold water, and heated a certain length of time, which depends on the material to be preserved. Strawberries would not take long; corn would take longer. The vapor passes out through the opening on the side of the jar. In fact this method is resorted to in preserving meats. Put meat in a metallic or tin vessel, and stop it, subjecting it to a temperature of 212°. The heat will cause the oxygen to be consumed by uniting with the elements of the organic matter, and the heat will cook the meat and preserve it from decomposition. Have a perfectly tight jar and strong enough to resist the pressure of the steam on the inside and the heat will change

The Material that Tends to Undergo Decay.

So that it will not decay so readily. Cooked food, meat and vegetables will not decay so readily as uncooked. Have a temperature in the neighborhood of 200° and the white of an egg will not decay so readily as before cooking. So heat excludes air, by expansion, driven out, and it also acts in the organic matter of vegetables and on the part in meat like the white of an egg, and renders them less liable to decay. By having a confined vessel in which you can make use of applied heat, you will use up the oxygen by that process, and the heat will change the nature of the food so that the principle of decay born of it will be destroyed. It was used a few years ago exclusively to preserve meat. Australian meat was put up in and subjected to an elevated temperature of from 212° to 240°. The cans were made strong enough to resist the small amount of steam generated during the process, and by which the food became cooked. The vapor generated on the inside passed out through the small opening. The operation was repeated two or three times. Sometimes the meat preserved by this process is over cooked. Then there is another process by which the diminished pressure of the air it can be cooked at a lower temperature. Sugar is made more quickly and at less expense of fuel by diminishing the pressure of the air in vacuum pans. Take the pressure of air from water and it boils at 70°, although it will feel cold at 70° to the hand. By having the vapors pumped from the upper part of the vessel, while the heat is being applied we can get rid of the air that subjects meat to overcooking. Sometimes alcohol has been put in. Alcohol boils at a less temperature than water. There are a variety of other methods to prevent overcooking.

The Whole Process of Preserving

Depends on excluding the air, and changing the structure of the food, so that it will not decompose rapidly. This is done by heat and by the process of cooking. A great variety of arrangements are resorted to, to produce this. Let me call your attention to one or two points in this connection, more especially with regard to meats. We use materials of antiseptic or preventative decay character. The most common is common salt. If we sprinkle our meats over with it they will be preserved. Olive oil preserves in this way animal food. When a quantity of salt is sprinkled over it, it abstracts the moisture, and protects the fibre from the action of the atmosphere, and solidifies it so that it will not undergo decomposition from the action of the atmosphere. But meat is not as nutritive this way. It always becomes hardened. It will keep through the hot season but it is very hard when we come to eat it. Now the water in which it is kept, and meat consists largely of water, holds in solution the juices of the meat. Press them out and we have a nutritive substance, which we take out in making beef tea. The nutritive matter is taken away and only the solids remain. You can skim it off when you boil the liquor. This is like the white of egg, and forms the nutriment. By preserving in this way, meat is rendered less nutritious and is not so easily digested on account of being hard. A small amount of salt will preserve meat a long time, and not impair the quantity much.

Smoke and Creosote for Preserving.

It is also well known that smoke is used for preserving. There is in smoke a substance called creosote. It is that substance which makes the eyes smart when exposed to smoke. I have creosote in this bottle. It is of such a nature that when brought in contact with organic substances it hardens them. Take a piece of meat and expose it to smoke, and it penetrates through the mass of the meat, and gives it the flavor and by acting on the organized matter renders it more insoluble. I now put the white of egg in contact with creosote and the white of egg, which is liquid, will undergo changes. [Dr. experiments]. You see that the white of egg coagulates and looks as if it was boiled. The substances that exist in the juices of the meat is of like character to white of egg, and the vapor of smoke hardens it; so smoke preserves articles of food, particularly animal food, from decay. There is another substance possessing something of the nature of creosote. It is extracted from coal tar.

Carbolic Acid

Is one of the most purely preservative substances in nature. This is generally used as a disinfectant. If we use a little of it dissolved in water, it will act on the substance we wish to preserve and will prevent its decay. If I bring it in contact with the white of an egg, we shall find that it will be affected in the same manner as by creosote. (Experimenting.) Let me wet the end of a rod with it or pour a little liquid on it only. I put only a single drop on a part of the white of egg on the side, it coagulates it, and you see that nearly all the bottom part is coagulated. This then preserves it and prevents it undergoing decay. This substance remember is only sometimes used, as the flavor it gives meat is a little different from that of creosote and is offensive. But if from one to four parts of carbolic acid be put in 1,000 parts of water, meat may be exposed to its effects without any offensive resultant odor. It is sometimes used on a limited scale to preserve meat.

A Variety of Other Substances

Are also used. Alcohol is used and acts in part the same way. Suppose I put a little white of egg in a vessel. I might take brandy containing 50 per cent. of alcohol, and bringing it into contact with the white of an egg the latter would coagulate at once. Alcohol acts like carbolic acid—alcohol affects white of egg in nearly the same way. In all animal and vegetable substances there are bodies like white of egg, the nature of which is to undergo decay when brought into contact with the oxygen of the air, with water, and when exposed to a favorable temperature. Alcohol preserves not only by hardening and making substances difficult to decompose but it also prevents the growth of infusorial vegetable substances. This substance in the juices of animal and vegetable matter, like white of egg, takes oxygen from the atmosphere, and then begins decay. There is a vegetable growth found in wine formed during fermentation. This is the

Yeast Plant.

It is as much a plant as a tree. It consists of a cell. Alcohol, if it exists in any considerable quantities, will prevent the growth of this vegetable substance. This is why we never can make wine beyond a certain strength, as far as alcohol is concerned. We may have sugar enough to form from 25 to 30 per cent. of alcohol in the juice of the grape, but we never can form 20, because

Alcohol Prevents Formation of the Yeast Plant.

And so it is in the juices of meats and plants. Always in connection with the decay of animal substances there is found a little new plant. It is a little vegetable substance, but in alcohol that substance cannot be formed. You will have a substance there acting on a substance like the white of an egg, and another substance preventing the formation of the yeast plant. You can preserve fruit by having 20 per cent. or more of alcohol. Ordinary liquors have 50 per cent. of alcohol, and wines from 10 to 20 per cent.; weaker ones from 6 to 8. California wines possess from 6 to 10 or 13 per cent. This is not enough to prevent decomposition. If we have 20 per cent. it will, and the more the better. There are a variety of materials that act on animal and vegetable substances in the same way as this.

Animal and vegetable substances are much alike in the matter of decay, and the same principles are involved in their preservation. There are several other materials besides those I have mentioned that prevent decay. Some are of a poisonous nature. We cannot use them in ordinary preservation, but we can in the preservation of articles not intended to be used as food—flesh, skins, etc. We may make use of certain.

Poisonous Substances.

Such as arsenious acid, blue sulphate of copper, sulphate of zinc, chloride of mercury, etc. I will show you how they act on albumen, for albumen is the matter that goes to decay in plants and animals, as mentioned before. I bring corrosive sublimate dissolved in water. It consists of quicksilver and chlorine, a greenish gas, and is used for making blue glass. I put a little in contact with the white of an egg and it acts like alcohol. Now it is a very valuable preservative substance. It will preserve fruits, meats, etc., but it poisons food. It makes substances insoluble. Blue vitriol acts in the same way. I take some in a tube, bring more white of an egg and it acts in a precisely similar manner. I will pour blue vitriol on, and it will cook the white of an egg. [Experimenting.] See, it is completely cooked, as completely cooked as when I put in corrosive sublimate. Now if I wet the white of an egg with it, soak wood in it, I can prevent its decay, and so

We Preserve Timber,

Just as we do by creosote. If we take the vapor of coal tar, and apply it to wood, it will act in the same way also as I have shown in the experiment. It will harden the substance in the sap that is like the white of an egg—it will harden it so as not to undergo decay, and the wood will remain unaffected by ordinary decomposing influences for a long time. Blue vitriol or corrosive sublimate applied to wood accomplishes the same object. If we apply this to the lower end of a tree trunk, it will absorb it, and the entire trunk will be more or less saturated, so that it will not undergo decomposition for a long time. These substances cannot be used for preserving food, but are

used when we wish to preserve for other purposes. I have shown that

Heat Prevents Decomposition.

I will put some albumen on the table and make a simple experiment. All I have to do is to heat it. I do the same as is done in heating when the temperature is elevated. By continued heating it is converted into a solid mass, and cannot then be torn to pieces by the oxygen of the air so readily as before.

I have thus presented to you a few points in connection with the principles involved in these operations in a very desultory way. I may add a few more remarks.

Preserving Meats.

By dipping fresh meats into paraffine melted at a temperature of 240° degrees the paraffine will form a coating by which the air is excluded. Meats are preserved in Australia in melted fats. We can thus preserve the meats of sheep and cattle that we formerly killed for the hides and tallow. By taking these and dipping them in melted fat at 240° degrees, we expel the moisture from the surface, then putting in casks and filling up with melted fat it will keep for a long time. And so other agencies are made use of in the same way to accomplish the same end.

USEFUL INFORMATION.

Bridging Joists.

A great many builders omit bridging joists, simply because they have never been able to understand and appreciate the advantage of such a practice. It is not uncommon to see pieces of boards nailed between the joists of every floor, about midway from the joints where the joists are supported, as a substitute for bridging. The object of bridging joists is to give stiffness and solidity to the floor after the boards are laid. Pieces of board as wide as the joists, extending from the other, near the middle, in lieu of bridging, will give but little stiffness to the floor. When bridging is done by nailing pieces of thin plank, or pieces of small scantling between every two joists in the form of the letter X, any superincumbent pressure applied to any one joist will be sustained, more or less, by two joists on each side of it. Hence when a person walks across the floor, the joists of which have been bridged, his weight will be received by five joists instead of one, as would be the case were the joists not bridged. When the joists are not properly bridged, a floor will sometimes spring and vibrate to such an extent, when one walks across it, as to give a tremulous motion to every article of furniture in the dwelling. When the joists are not bridged, the wall or plaster beneath will frequently be broken loose from the lath in places, so that large patches will fall to the floor.

PAINTING FLOORS.—For painting floors the mineral paints are exclusively used. Paints which contain white lead are too soft, and wear off very easily. If a floor painted with colors wears off unreasonably fast, it is sure proof that the paint contained white lead. This generally happens because such colors cover better, and are more easily applied. Even the use of varnish boiled with litharge is to be avoided, and one boiled with borate of manganese preferred. As a rule it should have two coats, but the greatest care should be taken that the first be perfectly dry before the second is put on.

After the floor has been painted, in order to give it a polish and make the surface more permanent, it is coated with what is called "floor-lac," which may be made thus: Dissolve one ounce of shellac in one-fourth of a pound of 80 per cent. spirits, and add to the solution one dram of camphor, and strain out the lees in a linen cloth. This lac is used after the paint is dry, and gives more tenacity to the surface. A fresh coat of lac may be applied from time to time, as it wears off, and you have always a fine polished surface, which can be washed.

DURABILITY OF SHINGLES.—Except in few localities, good, shaved pine, or cedar shingles are not obtainable. Where they are to be had at reasonable rates they are the best of all common materials for roofing farm buildings. Well laid, first-class shingles will make a good roof for half a century. On the other hand the common sawed hemlock and poor pine shingles will last scarcely three years. Nevertheless these latter must of necessity be used, and such means as are available should be employed to add to their durability. First the slope of the roof should be steep, as a good pitch will add half to their lasting quality. It is probable that crude petroleum could be used with good effect to saturate the shingles in cases where tainting the water would not be objectional. Moss can be kept from roofs by sprinkling them with lime.

AN AMERICAN SUBSTITUTE FOR GUM ARABIC.—It is said that the mesquite gum of Western Texas is almost identical with gum arabic, and during the past year has become an article of export, some 12,000 pounds having been gathered in Bexar county, and as much more between that and the coast. This gum exudes from the stems and branches of the mesquite, a mimosa, several species of which grow in Texas, New Mexico and Arizona.

DISTINCTION BETWEEN WINE AND FERMENTED FRUIT-JUICES, such as cider and perry. The detection of malic acid is not sufficient to prove a sample of wine to be adulterated, since it is naturally present in grapes. The most certain procedure is to filter and add ammonia in excess. The fruit-wines, when this has been done, deposit crystals, which adhere to the sides of the test-glass. Genuine grape-wine, on the other hand, deposits a powder, much less in quantity, not adhering to the sides of the glass, and, to the naked eye, devoid of crystalline structure. Both these deposits are soluble in dilute acetic acid. Under the microscope, the fruit-wine deposit appears to consist of tubular crystals, with parallel sides; that from grape-wine forming minute stars. When dissolved in dilute acetic acid, the deposit from cider and perry was found to contain lime and phosphoric acid. In grape-wine, lime is also present, but in smaller quantity. In this case, if the precipitate given by oxalate of ammonia is filtered off, a fresh addition of ammonia gives a further precipitate. This is not the case with cider and perry. If perry and wine are mixed in equal proportions, a deposit of crystals is found on the sides of the test-glass, on adding ammonia. In cider and perry the phosphoric acid is present, in combination with lime, whilst in wine it is combined with magnesia. The most characteristic reaction is that with ammonia.—*Mechanics' Magazine.*

FACING OIL STONES.—A correspondent of the *Scientific American* says: "I have in the course of my life spent a good deal of time in facing off my oil stones. I have used sand on a board, wet and dry, or an old millstone, or a hard brick. If the oil stone was soft, it could be cut or rubbed down in a short time; but if a hard one, it was a serious job. The thought struck me about two years ago that emery would be the thing to quickly cut a hard stone which I have. I dressed off a white pine board, put a thin coat of glue on it, when dry put on another, sprinkled coarse emery on the glue, rubbed it in well, and when dry put on another coat of glue and emery. I have been using it every since; it does not take one-tenth of the time to face off that stone than it formerly did with sand, etc. This may save some one some hard rubbing."

ALBUMEN CHARCOAL.—A preparation called albumen charcoal has been devised for the purpose of clarifying sugar syrups, and for which it is said to answer an excellent purpose, a very small quantity only being required. Its application in clarifying wines has been suggested, although it is not stated whether it is exactly suitable. To prepare this substance, finely powdered and purified animal charcoal is to be mixed to a stiff dough with white of an egg, and torn apart into small pieces, dusted with the charcoal, dried and pulverized, and again kneaded with egg albumen to a dough, which is to be dried and powdered anew.

GRAPE SUGAR may be detected in a solution by adding about five cubic centimeters of a solution made by the mutual decomposition of concentrated basic lead acetate, and dilute copper acetate. The solution turns yellow on boiling and in a short time deposits a yellow precipitate if only 0.001 per cent. of grape sugar is present. Milk sugar, if the solution is quite dilute, gives the same reaction. In concentrated solutions, however, the grape sugar gives an orange colored solution and precipitate, while milk sugar gives a red color.

SMALL WATER POWER.—A pipe which will deliver 53-4 gallons of water per minute will furnish about 85 hundredths of a one-horse power, sufficient to drive a moderate sized machine such as could be worked by a boy. The size of a turbine adapted thereto would be, say, 8 to 9 inches inside diameter of casing, with 7-inch diameter of central wheel from outside to outside of buckets. Twenty buckets would be better than a larger number.

A CEMENT to stop cracks in glass vessels to resist moisture and heat: Dissolve caseine in cold saturated solution of borax, and with this solution paste strips of hog's or bullock's bladder (softened in water) on the cracks of glass, and dry at a gentle heat; if the vessel is to be heated, coat the bladder on the outside just before it has become quite dry, with a paste of a rather concentrated solution of silicate of soda and quick lime or plaster of Paris.

TO GIVE PLASTER OF PARIS HYDRAULIC PROPERTIES.—It has recently been discovered that plaster of paris or anhydrous sulphate of lime, when heated to 500° Cent., acquires true hydraulic properties, and, when mixed with a due quantity of water, will at the expiration of about three days, set into a white, semi-transparent mass of great beauty.

TO BLEACH FLANNEL.—Soak for an hour in a weak solution of bisulphite of soda, then add a little diluted muriatic acid, stir well and cover the vessel for twenty minutes. After this, take the flannel out, rinse in plenty of soft water and dry in the sun.

DIP the hand in a finger-glass until the temperature of the water therein is raised one degree. An amount of energy is withdrawn from that hand sufficient to project that water to a height of 772 feet above the earth's surface.

A STEEL CARRIAGE WHEEL has been invented. It is very light and much stronger than a wooden one.

GOOD HEALTH.

The Philosophy of Good Health.

Man deals with life pretty much as he deals with his teeth. In youth, and while they are sound, he values them somewhat,—in name, and for their uses and their comeliness,—but does all he can to injure them. When they ache and torture him, he cannot extract and throw them away fast enough. But, when there only remain to him two or three old snags, mere apologies for teeth, which it were better for him to be without, he treasures them as if they were invaluable possessions.

It is so with life. In the first periods, when we seem to tread Elysian fields, and dance like blossoms in the zephyrs of a perpetual spring, full of a vigor that we think is unfading, we cannot live too fast. We sail for every shore, and landing, burn our ships behind us. But when the years increase, when age draws nigh, and, in its ever lengthening and deepening shadows, strength fails and functions decay, and the sparkling fountain is wasted to a slow trickling rill, what a change comes o'er the spirit of our dream, and how tenaciously we cling to the last poor fragmentary leaves of the dog-eared volume! And at last, when decrepitude lies prone upon us, when we have received the "three sufficient warnings," and are come to the last scene of all in "the eventful history," friendless, alone, deaf, lame, and bent like sickles, sans eyes, sans teeth, sans everything, how sordidly, eagerly, desperately, we cling to the worthless mockery of life, as if, the simple habit of living, by being long indulged, had grown into a passion for existence!

So also do we deal with health, the attribute and the privilege of youth. There is nothing we fling so recklessly away while we possess it; there is nothing we strive so desperately to secure when our follies have put it beyond our reach. How strange it seems that we should never come to estimate good health for what it is worth until it has almost or quite forsaken us. There is not an invalid anywhere but would make any sacrifices and yield up his dearest possessions to recover what he might have felt its value at the proper time. Yet it is not strange neither, for man is not capable of appreciating what has cost him no labor to secure. Even liberty itself is no treasure save where it has been purchased by battle and privation. How shall man know what health is until he has lost it, when he has no consciousness even of his nerves, until some shock has impaired or preternaturally aggravated their action?

Nevertheless, health is more than a blessing to man,—it is a necessity. It is "indispensable to almost every form of human enjoyment; it is the grand auxiliary of usefulness; and should a man love the Lord his God with all his heart and soul and mind and strength, he would have ten times more heart and soul and mind and strength to love Him with in the vigor of health than under the palsy of disease." Man, in fact society, the living world in which we pursue our activities, is but an aggregate of individual men, and if the members be unhealthy, doubt not but the body will be unhealthy likewise. He was not an unwise philosopher who said that domestic happiness owed more to digestion than to morality.

The boon of good health is more possible of achievement now, and nearer within man's reach than ever it was in any previous age. "If you are careful with it," says the proverb, "glass will last longer than iron." Modern enlightenment endows us with a large store of the very kinds of knowledge needed to teach us how we may bestow proper care upon the preservation of our good health. We know the causes of our disorders, of many of them at least. The capacity of human nature to accommodate itself to untoward circumstances and to resist unfavorable influences, to lay down old habits and to take up new ones, is very remarkable. Surely that same flexibility of function which enables the sedentary sewing-woman to violate every law of health and yet live; which saves the sedentary smoke-dried German student from premature paralysis, and enables the London fashionable to preserve bloom and vigor while turning night into day and day into night; which sustains Livingstone in the sweltering jungles of Africa, and made existence possible to Kane and his companions frozen fast to the Glaciers of Greenland—surely an adaptability so great will put it in man's power to change his mode of life from a disorderly one against nature to an orderly one in accordance with nature, and will make it quite tolerable for him to put his belly-gods pre-emptorily away, quench his unruly appetites, and master the whole secret of a blooming and unfettered old age.

Nor are the means for procuring health far to seek nor difficult to attain. We must go back to nature—not indeed in Rousseau's sense of returning to savagery and unkempt nakedness, but, by using art, to discover the curative processes our instincts naturally pursue, and the philosophy of the regimen they require us to adopt. This, in effect, is to enforce upon our lives, our habits, our very thoughts, the scrupulous, sedulous, daily constant exercise of right reason. He who corrects and controls his appetites, gets something of the divine nature thereby. A proper regimen, a proper mode of motion and of rest, a proper sobriety of ap-

petite and a sweet continence of temper, and the whole tale of illimitable physical and moral regeneration is told at once. Surely there is no difficulty here. Surely the simplest man amongst us, or the most obdurate in passion and in unreason can if he try pursue

"The rule of 'not too much,' by temperance taught,
In what thou eat'st and drink'st; seeking from thence
Due nourishment, not gluttonous delight.

SALT—ITS EFFECT ON THE BLOOD.—Dr. Stevens, a French physician, saw a butcher killing a pig. He observed that he stirred the blood of the animal, and added a handful of common salt to it while stirring, which immediately made it crimson, and the stirring being discontinued, remained fluid. The change of color awakened his curiosity. The butcher could give no explanation of the phenomenon, except that it kept it from jelling and spoiling. Dr. Stevens seized a vessel, caught some blood, and made several experiments by putting salt into it, and found that the blackest blood was instantly changed to a bright vermilion by salt. "And," said he, "here is a fact that may lead to a practical rule." He has observed, in cases of yellow fever in the army, that the blood drawn was very black and fluid and on adding salt it became vermilion and retained its freshness; whereas, putridity of the blood is one of the characteristics of yellow fever. He therefore abandoned the usual mode of treating it, and gave his patients a mixture of various salts, and in a very short time reduced the mortality of fever in the West Indies from one in five to one in fifty.

TOOTHACHE, EARACHE, ETC.—It is a bad practice to put cotton wool, soaked in laudanum or chloroform, into the ear for the relief of toothache. It is true that it may sometimes prove effectual, and procure a night's rest, for the connection between the teeth and the ear is very close. But let it be born in mind that the ear is far too delicate an organ to be used as a medium for the application of strong remedies for disorders of the teeth, and that both laudanum and chloroform, more especially the latter, are powerful irritants, and that such applications are always accompanied with risk. The teeth should be looked after for themselves, by some competent dentist; and if toothache spreads to the ear, this is another reason why they should be attended to at once; for prolonged pain in the head, arising from the teeth may itself injure the hearing. In earache everything should be done to soothe it, and all strong irritating applications should be avoided. Pieces of hot fig or onion should on no account be put in; but warm flannels should be applied, with poppy fermentation externally, if the pain does not soon subside.

EFFECTS OF MESMERISM.—A gentleman residing in an interior town in Pennsylvania states that recently while a mesmeriser was performing in his place his neighbor's little daughter, a pretty, bright child, became a very interesting subject; and during the stay of the professor was nightly under his influence, sometimes for two hours. Her mind seemed in a strange way the day after he left, and in two days she was taken with a severe headache with darting pains; these terminated in a stupor, and, for about six months, she has been under medical treatment. The physicians say she has no disease. The poor child is an object of pity, having pined away to a skeleton and become perfectly helpless and idiotic. She does not know her own wants; never asks for food, merely opens her mouth when it is touched, and takes it like a young bird.

A NEW, BRIGHT AND NOT POISONOUS GREEN.—It is announced that a green of nearly the same brilliant shade as Paris green may be obtained by taking twenty parts of oxide of zinc and one of sulphate of cobalt, mixed into a paste with water, and exposed to a red heat. If so, the invention is of considerable value, as the Paris-green is subject to the grave objection of being highly poisonous; and cases of fatal poisoning occur repeatedly by its use. Our readers will know that it is arsenite of copper, according to the detailed information given in previous numbers of this paper in regard to its manufacture.

POISONED BY WOOD.—John L. Norman was recently employed by the St. Louis and Vandalia Railroad Co. to assist building a depot, during which time he was so severely poisoned that he was physically ruined for life, for which damage he has sued the company for \$25,000. The timber employed in the construction of the depot had been saturated with arsenic and other poisons to prevent decay. Five or six workmen died from the effects of the absorption of poison into their systems. Eleven other workmen filed suits against the company in Belleville, Ill.

AMMONIA FOR HOOPING COUGH.—Since it has been shown that the inhalation of air charged with the vapors of ammonia are beneficial in cases of whooping cough, M. Grotham, of Paris has been experimenting on the effects of boiling strong ammonia in the room where the patient was, with decided success.

POISONOUS WALL PAPER.—It has been found that the deleterious effects of green wall paper are most noticeable in rooms lined with flock paper, from which particles of wool, with, of course, the green coloring matter, are constantly getting detached. Green paint is not so hurtful, and the idea of varnishing it is a very good one.



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SAN FRANCISCO:

Saturday, Sept. 14, 1872.

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State Fair.

On Thursday of next week, Sept. 19th, the California State Agricultural Fair opens at Sacramento and will continue for ten days, closing on Saturday the 28th. There never has been a season before when the prospect equals the present for a grand and successful Fair.

Never at any former Fair has so much excellent blooded stock been entered for exhibition and premium as now, as shown by the book entries and the largely increased number of stalls that have been fitted up for its accommodation. The simple display of stock will be grand and worth all it will cost any one to give it their inspection.

At the pavilion a much more attractive display of art, industrial, agricultural and floral objects will be on exhibition than ever before seen at our State Fair, as a special effort has been made to call out a largely increased amount of all manner of manufactured goods and the products of our dairies, grain fields and gardens, by liberal premiums.

It is important that those having stock, or articles of home product or manufactures for exhibition, should be on hand early, and secure their entries in time to be among the regular competitors for the Society's premiums, and thus helping to alleviate that unpleasant rush of business so common on the first day or two of the Fair.

SPIKENARD (Nardus) is a fragrant grass, affording the ointment mentioned by Solomon and St. Mark. It was used by the rich Jews in their baths, and feasts. It abounded in Persia, where it still covers large tracts of ground, making the air faint with excessive sweetness.

Editorial Notes at the Fair.

Leaving San José on Wednesday at 4 p. m., we arrived at Marysville on Thursday at 3 p. m., just in time to see the last and closing heat of a very exciting racing race between three local horses, "Handy Andy," "Prussian Maid," and "Montague," "Andy" winning the second, third and fourth heats, and the race, in 2:32½; 2:33½; 2:35¼. We found the attendance very good and everybody in good humor, especially the President, S. T. Brewster, the Secretary, Mr. Donly, and Mr. Marcuse the Treasurer. And we have seen enough about fairs to know that when these officers are in especial good humor at fair time, the fair is a success—and we are glad to state that this instance proved no exception to the general rule. We have attended a number of fairs at Marysville under the auspices of the Northern District Society, and we think this in many respects was superior to any we have ever witnessed. The excitement of the day being over and our time being limited, we repaired at once to the

Cattle Stalls.

Where we had been assured were to be seen some cattle who knew how to carry first premiums and sweepstake ribbons at the same time. The first animal we came to was, sure enough, Sweezy's famous bull, "First Duke of Yuba," who has taken the first premiums and sweepstakes at the fairs in this district every year since 1869,—when he was a calf—and who, at the State Fairs of 1869-70-71, as the records show, carried off the first premiums as a calf, grading at 2-year old, and in the last named year was also awarded the sweepstakes as the best bull of any breed or age. The next animal was "Beauty," who also has a good record, having taken four first premiums and three sweepstakes in this district; and four first premiums in her class at the State Fairs, and in 1870-71 having been awarded the sweepstakes as the best cow of any breed or age. This we think pretty good for a starter, and it increased our interest to see more of this herd. Mr. S. also shows a 4-year old roan cow, "Amelia," and heifer calf, "Ione, Second," 2-year old calf, Fourth Duke of Yuba," a nine-months bull calf, out of "Beauty," weighing 835 lbs. "Daisy" and "First Duchess of Yuba," two very promising heifer calves, aged respectively 7 and 8 months; also "Amelia Fourth," a seven-months' calf. The "Second Duke of Yuba" is a yearling out of "Beauty," and by "First Duke of Yuba," weighing 1,400 lbs., and we think will be hard to beat in his class; also "Butler Duke," a red and white calf. The above are the representatives of a herd of 22 head of thoroughbreds. Mr. S. also shows three head of grade cattle, and will show the above with some additions, at the State Fair. Before leaving Mr. Sweezy's exhibition it is but just that we should remark that but few men, if any in the State, are entitled to more credit than he, for his unflinching perseverance in holding on to his cattle and improving them with the same care when they were considered of no especial value in this State, as he does now, when each animal is worth its hundreds and some its thousands of dollars.

This herd of cattle are of the celebrated Walsh importation. C. G. Bockius exhibits one heifer calf five months old, "Nelly Jones," by "First Duke of Yuba."

We were then shown the herd of R. F. Sparks, of Yuba, at the head of which stands his magnificent 4-year old bull, "Monkey John." This bull is a dark red and seems to be an especial favorite with all who see him. He is indeed a fine fellow and will be a very hard competitor to beat in the severe contest that will take place at the ensuing State Fair, for the grand sweepstake prize.

Mr. Sparks' herd were all imported last year, and when shown at the State Fair, were in very poor condition. It will surprise our cattle men to see the improvements they have made.

Mr. Sparks also shows bull calves, "Stonewall," "Bismark," and "Alexis," all by "Monkey John." As cows, he exhibits "Maggie," an aged roan cow; "Miss Morgan, a red;" "Alice," red and white, and calf; "Ula Lee," a 2-year old that took the first premium at the State Fair last year in her class; also "Maggie Third" and "Maggie Fourth." These are the representatives of a herd of 17 thoroughbreds, owned by Mr. Sparks.

Mr. Sparks is an old cattle breeder, and don't know what it is to raise inferior stock, and says he never intends to learn.

The largest cow we ever saw is a graded animal five years old of Durham stock. She has a calf by her side and is in rather poor condition, but weighs over 2,200 pounds. She is exhibited by General Bidwell.

John McIlmoil, of Sutter county, shows a deep red bull, 2 years old, called the "Duke of Sutter." He is taken out of a herd and is in poor condition, but shows good points. He also shows a two-year old cow "Queen of May" and calf, all from the Sweezy stock.

Horses.

There are some good blooded, and well-bred horses in this district. One of the most successful breeders J. S. Gluckauf, whose place is on the Houcut. He shows a very valuable stable of thoroughbred horses and mares—

among which may be mentioned first, on account of her age, and as being the mother of most all the rest "Black Maria," a splendid breeder—the mother of "Osceola," who on Tuesday ran a mile in 1:45½, also "Trout," a fine four-year old colt by "Rifleman"—and "Acrobat," a two-year old by "Norfolk"—and "Orient" a splendid sucking colt by "Norfolk," "Antelope," also by "Norfolk," and out of "Black Maria" is a very promising three-year old. Mr. Gluckauf also shows "Pastora," a most excellent breeder, who took the first premium in her class at the State Fair in 1870, also the sweepstake, as best mare of any age. The same year she was shown at Marysville and Chico, and carried off the same honors at both places, "Pastor" is out of "Pastora" and by "David Hill"—a yearling of great promise. This stable of fine horses have quarters at the State Fair, and will claim some of the honors on that occasion.

G. E. Britton, of Sutter, shows a fine stable of mares and colts. "Peerless," by "Norfolk," out of "Fanny," dam of "Bloomfield," is a fine and valuable animal, and won the first premiums as one and three-years old.

"Waketa," a 2-year-old, same dam and sire, is also a very promising animal and has also won laurels at the Fairs.

But if Mr. Britton has a runner, we think it is "Prudence," a fine sorrel 2-year old filly, by "Norfolk" out of "Liz Davis."

Other Stock.

There were a large number of mares and colts of good qualities on exhibition but as the Directors had seen fit to withhold from the cards tacked on the stalls the names of the owners, and as we found no one at any of the stalls to give any information, we are unable to make reliable mention of them. The idea of withholding these names, we are informed, is that the judges may decide the award of premiums without fear or favor; but the plan in our opinion is not effectual—the animals are not examined by the judges at their stalls but while in the hands of their owners or his employes at the grand stand, and consequently the names of the owners are always known to them before they render their decision. Consequently there are no advantages but many disadvantages in this practice and we hope it will not be continued.

Grand Parade.

We were present at the grand parade on Friday morning and counted four double teams, seventeen buggies and sulkies, and forty-three horses to halter, and thirty head of cattle.

Sheep and Swine.

G. E. Chittenden exhibited 16 head Spanish Merino rams and 12 head of ewes, imported this season.

Joseph Glide exhibited four head of each, also imported.

While T. Brewer exhibited some 20 head of Cotswolds and graded sheep.

R. M. Sparks shows a bore and sow and eight head of very fine Berkshire pigs.

At the Pavilion.

The exhibition was not large but was very creditable to those who made it. In the Horticultural department Mr. Sweezy showed a very fine display of apples, pears, figs, grapes, peaches, raisins, Zante currants, dried figs, etc., etc.

Messrs. Bockius, Blodgett and Bidwell also each made a very fine exhibition of fruits and agricultural products.

In Agricultural Implements

The show was meagre, but all the articles exhibited were of home manufacture and of great merit. Best & Brown showed their most popular grain separator. Hill & Knaugh showed some of their superior gang plows, and Meyers & Gammaw show their celebrated subsoiler, while J. R. Hammer, Geo. P. Hunt and Hill & Knaugh show some very valuable express, pleasure and lumber wagons, all of superior workmanship.

Cashmere Wool.

One of our subscribers, J. H. Carpenter, has received a sample of Cashmere wool from a friend in Wisconsin, who wants to know if such wool is being manufactured or bought in California, and its value here. And if there is no market here, wants to know where there is.

Mr. C. sends the sample to us, a fine, white, silky and lustrous wool and it does seem as though there ought to be a market for it somewhere at some price. The Wisconsin gentleman also wishes to know what full bloods are worth here that will shear from five to seven pounds.

We don't wish to have it appear as though we were crowding this matter of Angora goats and their wool upon our readers in excess; but we feel it a duty to answer questions fairly put, in relation to them when the general interests of stock breeders seem to require it. Will some goat grower respond, in reference to the value of goat wool and full bloods?

No NONSENSE.—We have received from Capt. Robt. W. Simpson of North Bend, Oregon, a list of subscribers for the RURAL PRESS, one of whom, says he takes it, because "that Editor puts no nonsense in his paper."

Chickory Culture.

M. B. Granger, of Alvarado, who has for some five years been engaged in raising chickory, for the California Chickory Company, has just completed a new drying house, the one formerly used having been destroyed by fire last year. The present crop now ready to gather consists of fifteen acres, and will yield probably ten tons to the acre, which in drying will loose about three-fourths of its weight, and will furnish about thirty-seven tons of marketable product.

Mr. Granger planned for a much larger crop this year, having planted fifty-five acres, but time developed the unfortunate fact that forty acres had been

Planted with Lettuce.

The mistake was not discovered, however, until all the ground had been carefully weeded over twice, and then it was too late in the season to replant. The seed was furnished by the parties with whom he contracted to cultivate the chickory, and was procured by them part in New York and part in Europe. I believe it is not known where the mistake was made, the two seeds are identical in appearance.

The appearance of chickory in the field is similar to that of beets, although the leaf is not quite so broad and smooth, the root is white like parsnip, and on being broken or cut gives out a thick milky juice which is bitter to the taste. The plants penetrate to a great depth, many of them being from three to four feet in length.

It is too much labor to dig them out whole, so a plough is used that cuts them at a depth of about ten inches, when the top part is pulled out by hand, cleaned and chopped by machinery, and put into a hopper-shaped bin lined with brick, that will hold from three to four tons at a charge, and exposed to the heat of a furnace underneath, till dry, when it is sacked and ready for market.

The further roasting which is necessary before grinding, is done in the city where it is prepared for use. Horses and cattle are fond of chickory and fatten upon it more rapidly than when fed with either beets or carrots, but the milk of cows fed upon it, has a bitter taste.

Convention of Farmers' Clubs.

We would urge the necessity of a very general attendance of delegates from the several County Farmers' Clubs, to the State Convention to be held in Sacramento during the State Fair. It is important that every Club should be fully represented by talking, as well as thinking men, who have given the subjects likely to be discussed their serious consideration.

Bear in mind that the Convention is to meet on Monday, the 23d inst., and be on hand ready with argument and reason in support of what may be proposed as a remedy for evils that seem to be weighing so heavily against the prosperity of the farmers of the State; men who having done their part in the production of what constitutes the chief wealth of a people, find themselves "cornered" in their desire to put their surplus wealth of products at paying rates, upon the markets of the world.

Alfalfa and Irrigation.

A correspondent at French Gulch, Shasta county, says of alfalfa, that it never produces a crop with them, much less a second crop in the same summer, without irrigation. Speaks of an instance in which a field of it is growing where the bed rock is within 5 or 6 feet of the surface and the surface of the rock always wet by spring water, and yet the alfalfa will do comparatively nothing unless irrigated upon the surface.

It is difficult for us to account for the phenomenon, as requested, without an examination of the soil. It is generally considered one of the very best clovers for our dry climate, because the roots penetrate deeply in all soils. It may be possible that in the instance alluded to, the alfalfa from the first, has been grown under a constant application of surface water in abundance, and therefore the roots having no necessity of going downward have spread out only in the surface soil.

This being the case, and the irrigation suspended, the plant suffers from lack of moisture to its roots to bring on rapidly a second and third crop without a renewal of surface irrigation.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING AUGUST 13TH, 1872.*

CUTTER FOR SOLES AND HEELS OF BOOTS AND SHOES.—Samuel Graham Browne, S. F., Cal. SELF-ACTING WAGON-BRAKE.—Oliver Fisk, Coulterville, Cal.
HYDRAULIC NOZZLE AND TURN-PIPE.—Dennis L. Gorman, Michigan Bluff, Cal.
HYDRAULIC DERRICK.—Dennis L. Gorman, Michigan Bluff, Cal.
LOCK-NUT.—Joseph Scott Kirkpatrick, Punta Arenas, Cal.
ELECTRO-MOTOR FOR SEWING-MACHINES.—Abel T. McClure, San Francisco, Cal., assignor to himself, Thomas B. Shannon, George McDonald, George Stevius, Henry E. McBride, and Samuel D. Wood, same place.
MEDICAL COMPOUND OR BITTERS.—George W. Brown, Portland, Oregon.
MEDICAL COMPOUND FOR THE CURE OF DYSPEPSIA, ETC.—Daniel Mayon and Erastus Champlain, Cloverdale, Cal.
SASH-HOLDER.—Henry Polley, San Francisco, Cal., assignor to himself and Anthony Rosenfield, same place.
WAGON-BRAKE.—Joseph Pavey and Marshall Martin, Walla Walla, Washington Ter.
STOVE-PIPE DAMPER.—Warren Wasson and George W. Dungan, Genoa, Nev.

*The patents are not ready for delivery by the Patent Office until some days afterward.
NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

Sheep in Vineyards.

Sheep seem to have a strong antipathy to, or a love of, weeds; it matters to the farmer but very little which, so that they destroy almost every pestiferous weed they find growing within their range; leaf, seed-pod, the small limbs of all weeds, large or small, are alike to them, and by them are converted more quickly than by any other practicable process, into one of the most fertilizing manures known to the farmer.

Sheep fed with dry food in winter always prefer a leafy hay full of the leaves of weeds, vines and clover, to one of long straight stalks, as of Timothy or Red top, however nutritious the latter may be for larger animals. Farmers would do well to take advantage of this weed-destroying propensity in sheep, to clear their land cultivated or uncultivated, of noxious weeds.

A Matter of Importance.

We are not careful enough to extirpate weeds before they go to seed and particularly in unplowed and ungrazed fields. Hence new seeds are ripened and annually self-sown broadcast over other portions of our farms; and particularly is this the case with very many vineyard lands. Large rank weeds are often seen peering even above the grape vines in many places.

Now there is no more effectual way of destroying the weeds, large and small in these same vineyards, than by turning in droves of sheep immediately after the vintage, and if you have not got them of your own, borrow a flock of your neighbor who has, and turn them in. When they have destroyed every weed and bunch of wild grass, they will feast upon the drying leaves of the vines and the smaller and weaker shoots, but with not the least injury to the vine as regards grape-producing another year, and will leave a considerable quantity of valuable manure just where you want it.

Himalaya Barley.

In our issue of August 3d we gave a description of a new kind of wheat or barley, forwarded to us by L. B. Hopkins, of Julian City; we had never seen the grain before and described it as looking very much like wheat in a barley head.

Our traveling correspondent having interviewed Mr. H. Clausen, of Point Reyes, formerly a resident of Sweden, Europe, the latter says the grain described by Mr. Hopkins is Himalaya barley; much heavier than the common varieties of barley; requires a rich barley soil; will give more weight to the acre and nearly as many bushels.

It is the best barley for flour; is used in Sweden and Germany, both pure and mixed with wheat in all kinds of cooking. It grows all over Sweden, Denmark and Germany, even in the extreme north, and thinks it a valuable grain for any country adapted to its growth.

Malva as a Forage Plant.

We are desired to make further mention of the Malva plant or tree; for with us it assumes the proportions of a tree and maintains itself green under any conditions of drouth as most trees do, by their deeply descending roots. Botanically, the natural order *Malvaceae*, contains 39 genera and as many as 1,000 species.

The entire family with all its species abound in mucilage, and are therefore nutritious as food for animals, as not one of all its varieties is known to possess unwholesome qualities. The common mallow, — *Malva sylvestris* — the one under consideration, is an evergreen with broad succulent leaves with purplish flowers, and of very rapid growth in a suitable soil.

Having once become established upon a farm it soon takes possession of every unoccupied nook and corner and along the fences, and yet is easily subdued or kept from becoming a nuisance, while at all times its green leaves are a luscious morsel to almost every animal of the farm, and when the tree is but three or four years old will furnish an excellent fuel for the house.

What Animals Eat It.

Every one who has had the Malva growing on their premises as an ornamental flowering



THE MALVA.

bush or tree, knows how eagerly horses and cattle devour it when they get a chance at it. Not only the leaves but they find the young twigs and limbs sufficiently succulent for a tempting bite and will eat them the size of a pipe stem as readily as the leaves. Sheep and goats are equally fond of them.

Fed to dairy cows in the late summer months, it increases the yield of milk as well as its richness, and a few acres of one or two years old trees would go far towards keeping the cows in good condition for wintering to the best advantage, and this would apply equally to any other stock. They might first eat the leaves and if these didn't hold out they could go at the stalks and with no injury to the vitality of the tree at that season of the year.

When the winter rains come on and the grasses start, turn them out of the malvas, and if much broken, prune, trim and clean up, and they are ready to supply you with fresh leaves when the dry season comes on again.

Its Further Value.

In addition to the value of its leaves for forage and its wood for fuel, its flowers which are produced in the greatest profusion from early spring to autumn, furnish an excellent pasture for bees, from which they gather a honey of superior quality.

The bark of the malva—or mallow as it is sometimes called—produces a strong fibre that can be worked into a variety of useful forms, for coarse sacking and for making paper. The roots possess valuable medicinal properties, and from its purple flowers, the Chinese make a blue dye said to be equal to indigo.

Habit of Growth.

It is a wide-spreading bush, and when planted four or five feet apart, will in two years completely cover the ground, or with only narrow

paths just sufficient for the animals to make their way between them, and from five to eight feet high. The form of the flower, and the leaf in miniature are shown in the engraving.

The best soil for the malva is good sandy loam, but it will flourish in almost any soil that will produce ordinary farm crops, and its yield of leaves is simply enormous, and after the first year the plants require no kind of attention, except to see that they are not wholly denuded of their leaves during the months of July and August; but in September and afterwards they can be fed as closely as desired, without destroying the vigor or life of the tree.

The People's Pump.

The importance of a good and cheap pump is nowhere better understood than in California. In the pump we here illustrate, is found simplicity, durability and efficiency. There are two varieties made, but both act upon precisely

Fig. 1.

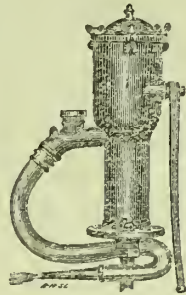
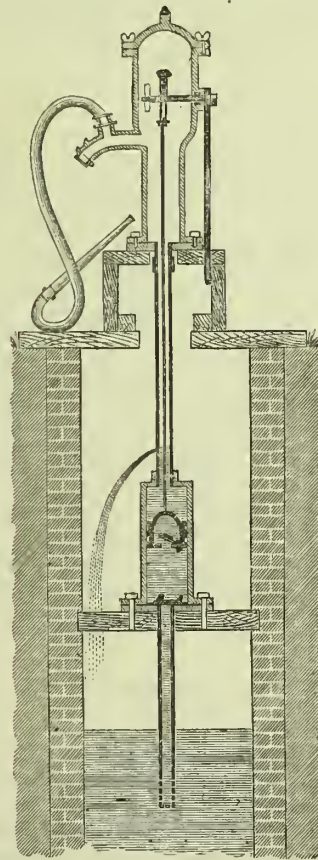


Fig. 2.



Fig. 3.



the same principle, and differ from all ordinary pumps in this, that the plunger-rod, instead of working through the top, is operated by a rocking shaft running through the side, to the outer end of which is attached the handle, thus enabling the top to be closed with a hinged lid, and secured by three thumb-screws, forming an air chamber for forcing, as seen in Fig. 1. This engraving represents the

In-Door-Pump.

These pumps combine the two principles, suction and force. The spout has two outlets to one of which may be attached a pipe for conducting water to attics for bathing purposes, etc.; to the other, a hose for throwing water in case of fire, washing carriages, watering gardens and lawns. The prompt action of this pump, its reliability and simplicity of construction, give it a character for excellence unequalled. Having an air chamber, it combines the principles of a double-acting fire engine of great power.

Deep Well Pump.

This pump the same in principle, differs from Fig. 1, in having the valve portion, Fig. 2, secured to a plank or timber down in the well within suction distance, about 25 feet above the water, and connecting with iron pipe above the same and with iron or lead pipe below; in this way they can be applied to wells of any depth.

A sectional view of the deep well pump with all its connections is shown in Fig. 3. These pumps are made of two sizes, one with a capacity of 15 gallons and the other of 30 gallons per minute. For purposes of irrigation, the watering of stock, and as security against fire—its presence always affecting favorably the rates of insurance—this pump has no superior, whilst its cheapness places it within the reach of all.

Conroy, O'Connor & Co., 109 Front Street, San Francisco, can give all further information needed as regards the effectiveness of this invention, and having ourselves seen it in operation, believe it possesses all the merit claimed for it.

Our Grazing Lands.

California with her present system of stock husbandry, or rather lack of system, is rapidly approaching a crisis which but few anticipated as coming quite so soon; and yet one that must be met and provided for. It cannot be said that we have too much stock for our population, so long as beef commands the high rates it now does.

Equally strange it is that with what we call "our system," of feeding stock, we are actually unable to keep much that we do raise, from a half starved condition for several months of the year. One or the other condition must be the true one, either we have too much stock, or with our present system of feeding, not a sufficiency of forage for what we have.

Effects of Climate.

It is an undeniable fact that we have millions of acres of land, fertile only in the production of useless weeds and other herbage; that in almost any other temperate climate than ours, or where they could feel the revivifying influence of summer rains, would be clothed with luxuriant and nutritious grasses, that here are but barren grounds, within the meaning of the stock growers' vocabulary, and this in the very midst of summer.

No country in this world is more beautiful in its wealth of vegetation in spring and early summer time than ours, and yet but few are more parched, dry and cheerless than are our unwatered plains and hills during the late summer and autumn months. We have all the light and heat of a tropical summer without its rains, and this has given us native grasses as peculiar as is the climate; grasses and weeds, for the greater part annuals, and such as are not, have their season of rest or cessation of growth during the summer and autumn months, rather than in winter.

Effect of Close Feeding.

The effect of grazing closely these annual grasses before they can perfect their seeds, is causing their complete extinction over immense ranges, that were formerly among our best feeding grounds; and as no substitute can be provided, whilst the present system of farm husbandry is continued, it becomes a matter of serious inquiry as to where we are to look for that large increase of cattle over the present, so imperatively required by an increasing population.

It may be said that the numbers of animals will increase in a corresponding ratio with the increase of the farmers. But where are they to be fed? If there is not sufficient forage for the present stock, how can a larger one be sustained? Our increasing population will need them and must have them. We shall resume the subject in our next number; in the mean time we hope to hear from some of our cattle growers on this subject.

THE HIPPODROME.—Last week we dropped in to see Chiarini's Circus, now holding forth on Jackson Street Lot, and were considerably amused and at the same time edified with what we saw. His trick horses are perfect marvels in their performances, and well illustrate to what degree the noble animal can be educated, and we think there is much truth in the idea that between reason and instinct, it would be hard to say where one leaves off and the other begins. The graceful and daring riding, and the difficult and wonderful poses of the acrobats and tumblers, evince a degree of perfection not attained except with much study and careful training.

BEEF SUGAR WORKS.—We learn that the beet sugar works at Alvarado have commenced operations on the new crop of beets, running as heretofore, successfully. Lux & Miller have taken a drove of cattle to the works to be fed and fattened upon the refuse of the beet, after sugar is extracted. Hay to some extent is fed in connection with the pulp, and when procurable a proportion of oil-cake meal is sometimes added with advantage.



The Childless Mother.

I lay my tasks down one by one,
I sit in the silence in twilight's grace;
Out of its shadow, soft and dun,
Steals like a star my baby's face.

Mocking cold are the world's poor joys,
How poor to me all its pomp and pride;
In my lap lie the baby's little toys,
In this very room the baby died.

I will shut these broken toys away
Under the lid where they mutely bide;
I will smile in the face of the noisy day,
Just as if baby had never died.

I will take up my work once more,
As if I had never laid it down;
Who will ever dream that I ever wore
Motherhood's fine and holy crown?

Who will deem my life ever bore
Fruit the sweeter in grief and pain?
The flitting smile that the baby wore
Outraged the light of the loftiest brain.

I'll meet them in the world's rude din
Who hath outlived his mother's kisses,
Who hath forsaken her love for sin—
I will be spared her pain in this.

Man's way is hard and sore beset;
Many must fall but few can win,
Thanks, dear Shepherd! My lamb is safe,
Safe from sorrow and safe from sin.

Nevertheless, the way is long,
And tears leap up in the eyes of the sun;
I'd give my world for a cradle song,
And a kiss from baby—only one.

Mary Clemmer Ames.

Have an Object in Life.

Every one who is content with life has, we take for granted, an object in life. He perhaps—may probably—does not know what it is, and if questioned will be almost certain to hit upon the wrong thing; but an object he has, because existence is not endurable without this stimulus. The popular notion of an object in life is, however, at variance with this universality of the rule. A few persons are rather distinguished from the many by this one characteristic, that they have a mark at which they aim, with one continuous unabating endeavor; that is, their object keeps its shape while the object of most people is protean in its changes, retaining, however, throughout, the same bias in the mind which bears on it. The object of such a one is to get on; but the weaker nature fluctuates as to the means and amuses itself with a variety of shadows; the strong will stands by its first choice. It is this persistence that men admire, quite irrespective of the worth of the thing aimed at. The object may be good or bad, great or contemptible, reasonable or absurd, but it is pursued with vehement unflinching obstinacy; the pursuer is ennobled by his tenacity of purpose. The amount of sacrifice is the gauge of heroism. When great spirits hit upon an object which, though above their present powers, is not above their reasonable hopes, "and still their purpose holds" against impediments which would discourage meaner men; we see men almost at their best—not quite, perhaps, for then self is lost sight of altogether; but we see the temper which governs men, subdues the world both of matter and mind, and leaves its mark for good on future generations. It is composed of two things which are equally powerful—keen appreciation of the object, and personal ambition. The philosopher loves truth, and pursues it for its own sake, but he also desires to found a school. Dr. Livingston no doubt feels more strongly than others the importance to the whole human family of exploring the earth's unknown regions, but it is also the object of his life to be himself the successful explorer. It has been long settled that happiness is nobody's or next to nobody's object; but if not happiness, at least amusement is the common object of mankind, though they may have very little perception of what will amuse, and make the constant blunder of mistaking purchased pain for pleasure. As a rule, nobody makes his

business his object in life; it is only his means toward gaining it, his road to his end. This does not hinder business being the real pleasure and happiness of existence where not tainted by cruel anxieties; but the occupation of life cannot also be its object, against which it often seems to run counter.

A Defence of Pretty Women.

After all, is the world so very absurd in its love of pretty women? Is woman so very ridiculous in her chase after beauty? A pretty woman is doing a woman's work in the world, but not making speeches, nor making puddings, but making life sunnier and more beautiful. Man has foresworn the pursuit of beauty altogether. Does he seek it for himself, he is guessed to be frivolous, he is guessed to be poetic, there are whispers that his morals are no better than they should be. In society resolute to be ugly, there is no post for an Adonis, but that of a model or guardsman. But woman does for mankind what man has ceased to do. Her aim from childhood is to be beautiful. Even as a school-girl she notes the progress of her charms, the deepening color of her hair, the growing symmetry of her arm, the ripening contour of her cheek. We watch, with silent interest, the mysterious reveries of the maiden; she is dreaming of a coming beauty, and panting for the glories of eighteen. Insensibly she becomes an artist, her room is a studio, her glass an academy. The joy of her toilet is the joy of Raphael over his canvass, of Michael Angelo over his marble. She is creating beauty in the silence and loneliness of her chamber; she grows like any art creation, the result of patience, of hopes of a thousand delicate touchings and retouchings.

Woman is never perfect, never complete. A restless night undoes the beauty of the day; sunshine blurs the evanescent coloring of her cheek; frost nips the tender outlines of her face into sudden harshness. Care plows its lines across her brow; motherhood destroys the elastic lightness of form; the bloom of her cheek, the quick flash of her eye, fade and vanish as the years go by. But woman is still true to her ideal. She won't know when she is beaten, and she manages to steal fresh victories even in her defeat. She invents new conceptions of womanly grace; she rallies at forty, and fronts us with the beauty of womanhood; she makes a stand at sixty, with a beauty of age. She falls like Caesar, wrapping her mantle around her—"buried in woolen! 'twould a saint provoke!" Death listens pitifully to the longings of a lifetime, and the wrinkled face smiles with something of the prettiness of eighteen.—*London Saturday Review.*

What to Do When You are in Trouble.

Many persons attempt to drown trouble in drink. You might as well attempt to drown a fish in a trout's stream. It is the element in which trouble lives and thrives. Others nurse their trouble in idleness. They say "I don't feel like doing anything." No doubt about that. The first effort of trouble is to absorb all your energies, and make you feel that all effort is difficult, perhaps useless. But it is effort which cures trouble. Work is the only certain remedy for it. If misfortune has come upon you, work must retrieve it. If sudden calamity has struck you hard, you must strike something else hard, or it will crush you. If you have met with losses, you will need all your energies to make them up, and these you cannot have if you lie awake thinking about your troubles. Every sleepless hour at night takes half the value out of every waking and working hour by day. Do not mope over your dinner, but eat it and away to your work again.

Don't spend your breath in telling unsympathising friends of your misfortunes. Don't disturb your wife by useless groanings in the night season. Work off your troubles during the day, and you will be certain to sleep them off during the night.

There are some troubles which time only can heal. Some perhaps, which no time can heal, but there is no burden of trouble which will not be made lighter, by good, hearty honest work. Try it and see.

GREAT workers are silent. Little minds fume and fret, making a mighty fuss with their pretty doings.

Every Mind has its Special Capacity.

Emerson says: "I am of the opinion that every mind that comes into the world has its own specialty—is different from every other mind; that each of you bring into the world a certain bias, a disposition to attempt something of its own—an aim a little different from that of any of your companions, and that every young person is a failure so long as each does not find his or her own bias; that just so long as you are influenced by those around you, so long as you are attempting to do those things which you see others do well, instead of doing the thing you can do well, you are so far wrong, so far failing of your right mark. Everybody sees the difference in children. They very early discover their tastes. One has a taste for going abroad, another for staying at home; one for books, another for games; one wishes to hear stories, another to see things done; one is fond of drawing, the other cannot draw at all, but he can make a machine. This difference, as you advance, becomes more pronounced. You are more distinct in your conception of what you can do—more decided in avoiding things which they cannot and do not wish to do. Now, I conceive that success is finding what it is that you, yourself, really want, and pursuing it—freeing yourself from all importunities of your friends to do something which they like, and insisting on that thing you like and can do."

TRUE GREATNESS.—Mere decision of character, taken in a worldly sense, is insufficient to produce true greatness of character. What is further needed is a clear, commanding view of duty as one and unalterable, to be the pole-star in the heavens. It is therefore hard to overrate the importance of cultivating this distinct and unclouded apprehension of right and wrong as a permanent mental habit. In order to attain this we must be often thinking of moral questions, and settling principles before the hour of trial. In this, likewise, men widely differ. Happy is the youth that begins early to meditate on such subjects, and to clear his notions as to what he ought to do in given emergencies. He will find the bracing influence of such views in moments when all are shaking around him. Looking only at the principles of eternal right, he will go serenely forward, even in the face of adverse popular opinion. While weaker minds are halting, to collect the votes of the masses, he will bare his bosom to the shower of darts and march up to the requisitions of conscience, in spite of all opposition.

FASHION never issued a more objectionable decree within the range of our observation than that which requires ladies to wear long dresses in the street, and yet it seems nearly all ladies obey it, as if they had no right to exercise their own reason or taste. The usage is not merely inconvenient and extravagant, but it is worse; it deserves no better name than foul. Let anybody look at our sidewalks, even when in their cleanest condition, and think how much dust, spittle, mud, and all kinds of stuff lie there to be swept up by the ladies sailing along in their elegant dresses. If cleanliness is akin to godliness, what name shall we give to this fashion? It is impossible to associate the thought of cleanliness with the skirt that returns from a promenade. And who shall clean it after its return; or shall it go uncleaned? Oh, Fashion! what filthiness is committed in thy name!—*Alta.*

DRESS.—No dress should be worn habitually which prevents free egress into the streets, the garden, or the forest. Quite enough time is taken up in changing the shoes; and in putting on hat, mantle and gloves. If exercise out of doors has to be preceded by elaborate preparation, it will gradually fall into disuse.

In a late vacation letter, Henry Ward Beecher enumerates as among the delights of summer rest the privilege of wearing old clothes. This is a privilege that a good many clergyman have the whole year round.

From lowly daisies learn, O men! how ye may be both good and beautiful, humble in heart and free.

If a man has any religion worth having, he will do his duty and not make a fuss about it. It is the empty kettle that rattles.

A FOUNDLING left in a Boston street car has been appropriately named "Oscar."

TEMPTATIONS are enemies outside the castle, seeking entrance.

Young Folks' Column.

Do as I Do.

This game, if properly managed, must be a very amusing one. A company of children sit in line. One, the leader, sitting in front, begins the game by moving the right hand up and down, and saying, "Massa sent me to you, sir." The first in line answers, "What for to do, sir?" The leader replies, "Do as I do." Questions and replies are repeated until all have their right hands in motion.

Second, the leader, moving both hands, asks the same questions, getting the same replies, until all have both hands in motion.

Third, the leader lifts his right foot up and down until all have their right feet moving, meanwhile asking questions and getting the same replies.

Fourth, leader moves his head, then opens and shuts the eyes, and lastly the mouth. By this time the scene is so ludicrous that all are unable to keep from laughing any longer, and the game is suddenly brought to a close.—*American Agriculturist.*

"Keep Still."

A Declaration for a Small Boy.

Keep still! That's what they always say to us boys. Just as if there never had been any noise in the world until we were born. Haven't old folks all been boys and girls once? Didn't some of them ever get boxed on the ears at school? Didn't some of them drum on the milk pans, or crack nuts with the flat-iron, or slam the doors, or come down stairs sliding-down-hill fashion? Everything that is smart goes off with a bang. This would be a dull world if it were not for the racket the boys make. Noisy boys are not always saucy. Some are; but we don't train in that company. We belong to the "Boys' Rattle-te-bang Society of Good Manners," and we invite all our young friends to come and join us.

A Boy's Experiment.

Some one says, I know a boy who created a sensation by breaking in upon the gravity of his guests in this wise: Entering the room, he commenced, "The class in Natural History are invited to witness a living curiosity. Even the learned Agassiz has never explained the reason why, if you take a guinea pig by the tail, his eyes will drop out. Please walk out into the kitchen and look at Cay." They all rush out and behold the little fellow with black and orange spots in the kitchen as announced. "Let us see his eyes drop out now," says Tommy. "Lift him up by his tail and see," says the young showman. But Tommy makes but indifferent progress, for lo, a guinea pig is found to have no tail!

A RICH LITTLE GIRL.—Little Nelly L. had lost her father, and her mother was poor. Her sweet temper and her winning ways gained her many friends. Among them was an excellent lady, Miss N. A glimpse of Nelly's bright face peeping in at the door always brought a smile of peculiar tenderness over Miss N's placid features. She loved to sit by the child, softly stroking her hair, and while looking thoughtfully into her smiling eyes would often say, "Poor, poor Nelly!" When Nelly shook her head, with a heart too happy to forbode evil, her friend would caress her still more fondly, and then say, "Poor little Nelly!"

The child's heart seemed troubled by these pitying words, for she asked one day, "Why do you call me poor? Please don't, Miss N—. I'm not poor—why, I've got twenty-five cents, and a good mother!" "Rich little Nelly," said her friend. A good mother? Ah how long I was learning what this little one already knows!

"A good mother"—could any earthly treasure have made her so truly rich?

"Boys," said a school teacher the other day, "what is the meaning of all that noise in school?" "It is, Bill Smith, sir, who is imitating a locomotive." "Come up here, William, said the teacher; if you are turned into a locomotive, it is high time you were switched off."

A LITTLE GIRL was told to spell ferment, and give its meaning, with a sentence in which it was used. The following was literally her answer: "Ferment, a verb, signifying to work. I love to ferment in the garden."

Editorial Notes at the Fairs.

As the fairs of the Santa Clara Valley Society at San José, and of the Northern District Society, at Marysville, come off at the same time, we determined to be at both—at San José the first part and Marysville the latter part of the week. If our reports are not full, our excuse is that we can not be at both places at the same time. We arrived at San José at 2.30 p. m. and after lunch at the Auzeais House, we in company with Mr. Doake, President of the San Joaquin Society, found our way at once to the stock ground, where we found the first race, a trotting race, mile heats, 3 in 5, purse \$500, free for horses that never beat 3 minutes, on the docket under the immediate direction of President "Billy Wilson" who, though rather too heavy for a sulky or skeleton wagon, delights in a "square trot" as much as any man we met of.

The entries were Haywood's "Lady Blanchard" and Smith's "Lady Lee." The race and money were won easily by Lady Blanchard in three straight heats; time 2.36½; 2.38 and 2.36. Next came a

Pacing Race,

Purse \$250, free for all horses that had never shown better time than 2.30. "Trifle," "Wonder," "Capitola," and "Swindler," were entered and all started. The race proved a very exciting and interesting one. The first and second heats were won by St. John's Trifle in 2.35¼ and 2.32½, the third and fourth heats were won by Goodwin's Capitola in 2.33¼ and 2.36. The fifth and last heat and race was won by Trifle in 2.39. Wonder was distanced in the second heat, and Swindler in the third.

While the races were in order, everybody was looking on and so we went with the crowd, and judging that our readers would be interested we give them the notes. The races over we went for the

Stock.

In this department we found the exhibition a perfect success. The exhibition of horned cattle was really much superior to what we had expected even for Santa Clara valley noted as it is for good cattle. The exhibition would even have been a credit to the State Society, and really did great honor to the county, there being in all something over sixty head—Durhams, Devons, Holsteins and Alderneys.

Chas. Clark showed his bull "Lincoln," by "Jeff Davis," (curious names to be appropriated as sire and son), who won the first premium for 3-year old Durham bull at San Francisco, also six head of excellent graded cattle—same as shown there.

Col. Younger exhibited the same as at San Francisco, with the exception of one sold, and in addition he had two calves—his fine cow "Sprightly" having dropped a fine red roan heifer calf on the last day of the San Francisco fair, and "Lady of the Lake," a deep red bull calf on the first day of this fair.

Besides these additions he has here "Peggy First" and calf—"Nan" the mother of "Planet" and "Nelly," and calf "White Oak." As those exhibited at San Francisco have made a good record so far, we will put it down here for reference. "Glencoe" won the first premium as a 4-year old bull, also the sweepstake as the best bull of any age or breed. Also the premium for the best bull and five of his calves under one year old, and stood at the head of the herd that won the Society's Gold Medal for the best exhibit in the stock department.

The calves shown with "Glencoe" and that helped to win the herd premium were "Red Oak," "Planet," "Moon Light," "Gem," and "Lady Booth."

"Sprightly" won the first premium as best 4-year old cow, "Glen Rose" the first as a 3-year old, "Norma" as best 2-year-old, "Lady Booth" as best heifer calf, "Tempest" the first premium as best yearling bull, and "Moonlight" as best bull calf. This is certainly a good starter for one week's work, and considering the great number and high character of the cattle they had to compete with a high recommendation.

S. B. Emerson, of San José, shows a thoroughbred Holstein bull "Opendoes" 12th and cow "Opendoes" 8th,—both black and white, also a bull and heifer, a cross between thoroughbred Durham and Holstein—both very fine animals. The bull is dark roan and white, and the heifer pure black and white, and in form and appearance they combine the points of both breeds of cattle. The Holsteins are claimed to be the best cheese makers, they are Dutch cattle and in this quality seem to be made purposely for the Dutch, who are great cheese eaters.

Wm. Buckley, of San José, shows a fine graded cow and calf by "Glencoe." The calf is a deep red, and should be christened "Beauty," to correspond with her appearance. John L. Pearl shows two graded bulls, a cross with the Durham stock—a two-year-old and a yearling. Jackson Lewis shows an 8 months graded Durham calf, weighing 1,010 pounds.

Major Veron shows "Dandy Jim," a bull just imported from Illinois, a fine specimen of his stock, and though but two years old he has won at the several fairs he has been shown at, the round sum of \$1,940 as premiums. He is a dark roan and certainly a very fine two-year old.

We shall hear from him, as the Major says

he intends to show him wherever good cattle are to be seen. He goes to the State Fair.

B. Fisk shows a very fine and large Devon bull "Billy," imported from England. This bull would go hard for a first prize at the State Fair, and we expect he will be there to contend for it. He weighs 1,900 pounds.

C. B. Polhemus exhibits two Durham bulls one-year old—both red roans—named "Capt. Jenks" and "Phil. Sheridan." They are representatives of Polhemus' herd of ten Durhams. Mr. P. also exhibits three Alderney cattle, a bull, cow and calf, representatives of a herd of seven of this breed.

Wm. Quinn shows six head of Durhams. A bull and five cows—representatives of a herd of some 20 head owned by him.

Thos. Blake shows a three-year old Devon bull, "Billy," imported from England; also 3 graded heifers. Jessie D. Cier, of Monterey, shows 6 head of Durham cattle; 2 2-year old bulls, "Rome," imported from Kentucky last year, and "Butterdale" by Col. Younger's "Glencoe." His cows are "Laura" and bull calf "Dixie," and "Maud" and heifer calf "Daisy." These also go to the State Fair.

Horses.

The stable of John Hall here, as ever, embraces some very fair thoroughbred stock, first among which we mention his 4-year old stallion "Ironclad," by "Woodburn." He expects to win the first premium for aged stallions, and we shall be disappointed if he does not. Also an own brother "Alex"—after the "Russian Prince"—a 2-year old, also a yearling, not named, and a sucking colt, "Captain Harris," all by Woodburn. Of mares, he shows "Peggy Ringold" and "Moss Rose," both brood mares; also a 2-year old filly, "Lady Frank" and a yearling, "Belle Mory," and a mare colt "Lady Washington," foaled on Washington's birthday, in 1870, also a grade mare by "Dashaway."

Wm. Hamilton, of San José, shows 20 head of horses. At the head of this stable stands his fine stallion Ethan Allen, Jr., and then came 5 brood mares and 14 head of their colts, among which, is one 3-year old filly, "Bess Allen," the winner of the premium for the best 3-year old roadster, at San Francisco. Also a 2-year old filly, "Fannie Allen," who also won a first premium at San Francisco. This filly Mr. H. will match against any colt of her age in the State. Also a year-old stallion, winner of a first premium in the class of graded colts at San Francisco. His stock goes to the State Fair.

Jessie D. Carr shows his imported 3-year old stallion, "Membrino," a very promising young horse.

Daniel McCraig shows an English draft horse, "Black Lance" and two 2-year old geldings.

Chas. Murphy shows three fine mares, "Peri" and filly, "Omah," and "Mary Watson."

Alex. Anderson has Stallion "Abdalla" and six of his colts, shown as a family.

S. B. Whipple exhibits "Ajax," "Lady Blanchard" and "Moscow," all trotters.

There were many other large or small stables of horses, but for want of time we could not examine and report on them. Sheep and goats were also well represented.

The Hall.

Though this society is in a more easy position financially, and has a greater abundance of land for track and buildings than any other society in the State, still it owns no hall for the exhibition of agricultural products or machinery. The Society intend building in a few years a fine pavilion on their ground in front of the cattle ground, also a large amphitheatre in which to show stock.

In the mean time they hold their indoor exhibition in rented buildings in the city. This year in Music Hall, a very commodious and appropriate place. To this we repaired after tea. The exhibition is held in four rooms; one a large one, perhaps 40x80 feet, the other three smaller. The exhibition in the large room is well arranged, and the articles particularly well displayed. We can only give a few of the exhibitions and the names of their owners.

Plants and Flowers.

The first thing that attracted our attention was a floral design in a pyramidal form near the centre of the room by the pioneer florist and horticulturist, Wm. O'Donnell. The center and apex of the pyramid consisted of a beautiful blue gum tree at least twelve feet high, and around this was clustered smaller trees of many varieties, mostly of evergreens, finally coming down to evergreens, variegated, ornamental and flowering plants, finally bordered with a wreath of Monterey cypress interwoven with a choice collection of high-colored cut flowers, making as a whole a most attractive and pleasing feature.

Immediately behind this, L. Sanders has a table of choice flowering plants, evergreens and ferns, artfully arranged and well displayed, also a fine collection of cut flowers. In an adjoining room John Rock, the nursery man, has a table of fine appearing evergreens, flowers and pot plants. S. J. Hensley also exhibits a number of the flowers of the magnolia grandiflora, one of the most magnificent of flowers, also branches of the Java coffee tree, the persimmon and other rare trees and plants.

Fruits.

On either side of these tables are the fruit tables well loaded with fine specimens of the standard fruits of the valleys, including apples, pears, plums, peaches, grapes, blackberries, and several kinds of nuts. In this line Capt.

Pebles, J. Q. A. Ballou, D. M. Harwood, Dr. Smith, O'Donnell and some others were the principal exhibitors. The exhibition is a creditable one.

Wines.

C. H. Lafrank has a fine exhibition of a variety of wines—which we know are good—having tasted them at his house some months since. O'Donnell also exhibits some wines, cider and brandy. The latter gentleman being a Director shows nothing in competition.

Vegetables.

The exhibition of vegetables is small but of good quality. People seem to take it for granted that everybody knows we can raise big pumpkins, cabbages, melons, tomatoes, etc., and are careless about exhibiting.

We noticed 3 sacks of wheat, the only grain we saw on exhibition. In this the farmers are certainly at fault. Such things should be exhibited and studied by themselves and for the benefit of strangers.

Mechanical.

In this department the exhibition is very light. D. McKinzie being the principal exhibitor. He makes a good display of iron and brass castings of good design and finish; also some agricultural implements—among which we noticed an iron-framed harrow, the frame being cast hollow to give it durability and lightness and a tute cutting plow.

Sarwain Tonnar exhibits some beautiful rustic furniture made mostly of the buckeye wood, ornamented in a very artistic style with shells and bright colored stones, highly polished and varnished. They will do well for arbors, porches or parlors, and we see them in many of the most elegant front yards about the city.

Silk.

Mons. Saufrignon makes a beautiful display of cocoons in brush, in cases and silk in the reeled state, also silkworm eggs. In this line lack of exhibition of the late Mr. Prevost is noticeable. His exhibition was always an attractive feature of their Fair and generally of the other fairs, of the State.

The Fine Arts.

In this department Messrs. De Long, Combs & Co., make a very considerable display of marble work—mantle, headstones and medallions—also several plaster busts. The work on some of these articles is exquisite, showing good taste and execution.

Mr. Ward shows some very fine photographs, plain and colored, and oil paintings.

On the whole the exhibition is a decided success, doing great credit to the management and the citizens generally.

DOMESTIC ECONOMY.

Taste in Household Matters.

In an article entitled the Art of Beauty, in a late number of the *St. Paul's Magazine*, we find some hints and suggestions on this subject so highly interesting and withal so practical for the household, and so common sense a character, that we have extracted from it the most striking of these, and believe that our readers, of the fairer sex at least, will find them interesting if not instructive. Speaking of the decoration of rooms the writer says:

Too much cannot be said of the pale, glossy, or white papers so much in fashion for drawing rooms and boudoirs. They are ruinous to any material, to any picture hung upon them, to any complexion. The same must be urged against white ceilings, and still more against white carpets. A pale carpet not only destroys everything in the room, but it visibly decreases the size of the room. A light ceiling may pass unnoticed, since we have got out of the habit of ever looking upwards in a room, owing firstly, to the glare, and secondly to the certainty of there being nothing to see; but a light floor cannot be forgotten. It forces itself on your attention whichever way you turn, casts up unpleasant reflected lights upon the polished legs of chairs, and destroys the colors and forms of all the furniture by its own obtrusiveness.

A dark crimson wall, especially in flock, fine as the effect is, is not to be recommended for any evening room, as it is so difficult to light. Scarlet lights well; but crimson absorbs light to such an extent that hardly any amount of candles, lamps and gas-jets are able to make the room properly clear. I can only tell my readers that flock paper is a splendid foundation for a painted wall, as it then has the effect of a wall stamped or indented, and not papered. A red room with a black ceiling starred with dull sea-green or yellow, is very bright and good. Any drawings, or pictures, or furniture against scarlet or pale red walls, are wonderfully set off, either by night or day. A room painted with murrey color, a kind of white lilac, warmed up with amber hangings, may also have a very delicate and beautiful effect.

Let me also warn my patient readers against grained painting. This is a very odious fashion, which we may suppose came in for cheapness sake. But let me not treat the introduction of real woods; there are many inexpensive ones, and the markings in them are inexpressibly

lovely. Even plain deal stained with some semi-transparent varnish (this is much used in ecclesiastical decoration nowadays) is a very clean, durable, and beautiful ornament for walls, floors and ceilings.

Now let me say a word about carpets. Pale ones I ignore. But the pattern and the colors even of the dark ones! What is to be done with a room whose carpet is grass-green, with large red spots or big flowers on it? What is to be done with any "cheerful" patterned carpet? Nothing—but to part with it to some member of that tribe whose armorial bearings are the Three Hats. Reader, if you wish to buy modern carpets, buy some moss pattern, or something very dark and neat, else you never will make your drawing-room other than a grief of heart to any cultivated person who may come into it.

But my advice on the whole is—send away all your carpets, get a quantity of the common rough matting for your rooms, and lay on it at intervals one of the rugs made by the Orientals. Turkish, Moorish, Indian or African carpets, especially the antique make, will never fail to look right, for they are the most perfect in color and design that can be procured.

For curtains and coverings get whatever stuff you like. Chintz or velvet is always good. In patterns be wary. Patterns suitable for a hanging are not always suitable for a chair seat. For instance, to be sitting on a bird or butterfly is an unpleasant sensation; a vase of flowers on a curtain is absurd. Italian patterns are usually debased. Stout boys standing upon scarfs attached to boughs in an impossible manner—swans perched on twigs of plants that never could support their weight—butterflies rather bigger than the storks beside them—are bad, because ridiculous, they hurt our sense of propriety, and worry the eye. Choose good patterns—common sense will guide you—and let your hangings be equal in tone with that of your walls.

And now I will close with a few rules, for color, which I think will be found equally applicable to dress and to furniture.

Consider, when choosing a color for any purpose, where it will have to be seen, in what quantity and in what substance. If you are going to paint a ceiling with it, choose a tint lighter than you mean it to appear; for a ceiling is always in shade, and a very dark color will be in that position hardly distinguishable from black. If you mean to veil it with white, choose a brighter, deeper tint than that of the unveiled trimmings which you intend for it, as it will otherwise not match them. If for dress or furniture, consider the material—a yellow which looks gorgeous in satin is detestable in cloth; a pale tint which in flannel would look like dirty white, may in a rich silk or fine cashmere have the most elegant effect. Never put green and red of equal intensity in juxtaposition; although these are complimentary colors, there is no more disagreeable mixture. A pale dull sea-green goes admirably with a rich crimson or Indian red; a pale dull red with deep green—but they must always be of very different intensity to look well together, and are always difficult to mingle pleasantly. Turquoise, the antique yellow-blue, mixes very sweetly with pale green; ultramarine, being a red blue, almost like in the shadows, is horrible with green. Pure pale yellow is a very becoming color, and will harmonize with purple; with blue the contrast is too coarse.

COMPOSE OF ORANGES.—First pare the rind of three oranges as thin as possible, and cut each paring into very small strips; then put a large handful of loaf sugar to boil with a small cupful of water. When the syrup boils throw in the orange peel, and put it by the side of the fire to remain hot, but not boiling, for an hour. Carefully peel the above three oranges and three more, leaving not a vestige of the white rind on them. Cut each orange in about eight pieces or more, removing the pips and middle pith from each. Put all the pieces in a dish, and pour the hot syrup over them. Serve when quite cold.

ICE CREAM.—Poor ice cream is not worth making. To a gallon of cream allow two pounds of loaf sugar. The flavoring must be quite strong, as the freezing destroys it in part. If you wish to give a strawberry or raspberry flavor, add sugar to the berries, wash them, and strain the juice. A quart of berries will flavor a gallon of cream. If you prefer milk to cream, to a gallon of milk allow ten eggs. Boil half the milk; beat up the eggs; turn the boiling milk into them, stirring them all the time; strain it, and then add cold milk, the sugar, and the flavoring.

TO MAKE LEMON PIE.—Grate the rind of two lemons; peck off the white skin; chop the lemon up fine; add two cups of sugar; beat up two eggs, and stir it all together. Roll out thin a rich paste, line a tin plate with it, and fill it half-full with the lemon; then roll out another thin crust, cover it, and fill up the plate with the lemon; cover it with a rich puff paste, and bake twenty minutes.

TO CLEAN FURNITURE.—An old cabinet-maker says: "The best preparation for cleaning picture-frames and restoring furniture, especially that which is somewhat marred or scratched, is a mixture of three parts linseed oil and one part spirits of turpentine. It not only covers the disfigured surface, but restores wood to its original color, and leaves a lustre upon the surface. Put on with a woolen cloth, and when dry rub with woolen."

Our Wheat Product.

Receipts at San Francisco and Exports for a Period of Seventeen Years, Beginning July, 1855, and Ending July, 1872.

Famed as one of the grand wheat-producing regions of the world, it was not till some years after the settlement of the State, that its people began to appreciate their great agricultural resources, and to find that in them they possessed something even more important to her future welfare, than her mines of the precious metals, great and apparently inexhaustible as they then seemed to be. We

Imported Flour and Wheat

From various places, but principally from the East, as late as 1856-57, strange as that fact may now seem to be. In 1853 we imported 299,597 bbls. of flour and 199,143 centals of wheat, and in 1854, 150,420 bbls. of flour and 67,349 centals of wheat. Of course the first American settlers thought only of gold, and their heads run wild on the subject of rich and inexhaustible placers, so that they had little time and less inclination to think of the cultivation of the soil. Hence importers made fortunes. By and by, thinking men saw that more was to be made by supplying the wants of the miners than even by mining itself, and from 1850 to 1857, our wheat product increased rapidly in amount till in the latter year we had practically ceased importing. Our

Receipts of Wheat and Flour in this City

From 1st of July, 1855, to 1st of July, 1872, have amounted in the aggregate to 2,148,135 barrels of the former, and 40,917,783 centals of the latter—equivalent to 47,362,188 centals of wheat. The value in wheat of this has been equal to ninety-three million, six hundred and thirty-six thousand, and thirty-one dollars. The total production of the State for the same time is probably about 50 per cent. more, and the probable total value of the wheat crop of California for that period approximates one hundred and thirty-five millions of dollars. As may be seen by the accompanying table the receipts both of wheat and flour have, despite the interruptions occasioned by droughts, been steadily increasing for the last seventeen years. Those of wheat which were 463,672 centals in 1855-56, decreased owing to unfavorable seasons to about half that quantity in 1857-58, but doubled the amount in 1859-60 and more than quadrupled it in the succeeding year. Then owing to a succession of medium and unfavorable years and to the preceding eighteen month's drought it decreased to the amount nearly of 1855-56, in 1864-65. Next year it recovered and the succeeding one the amount was double that of any former year, and in 1869-70 it equalled three times the amount of 1855-56. Three bad years unfavorably affected it again till last year the amount received did not exceed much that of 1860-61. This year, however, the receipts will exceed by one-third to one-half that of any other and will be at least eighteen fold that of 1855-56. Besides receipts from Californian sources, our stocks of both wheat and flour have been largely supplemented from Oregon. In the matter of flour especially we have received more in some years from Oregon than Californian sources. Our

Total Exports

Of wheat and flour reduced to a wheat basis have, for the last seventeen years, from July, 1855, to July, 1872, amounted to 37,559,627 centals, or over two-thirds of the receipts at this port. The value of this has been about \$70,775,426. The wheat exports have amounted to 27,608,609 centals, and the flour to 3,317,206 barrels. From the tables it would appear that during several years we exported more flour from this city than we received. This is owing to exports of Oregon flour being mixed up with those of California, and to the fact that a considerable quantity of the wheat received has been manufactured into flour for exportation. Our exports of wheat may be said to commence in 1855-56. That year we exported 8,815 centals, a very small amount when it is considered that estimating as nearly as possible

We Will Export a Thousand Times the Quantity This year. In 1856-57, the quantity was more than doubled, but it went down to 3,801 centals next year, and the one following to 123 centals. The drought being at an end and a bountiful harvest having blessed the land, it rose next year to 381,769 centals, or seventeen fold that of any previous year. Next year this amount was quintupled, but the following year the export was only one-half the quantity. Increasing to

1,043,752 centals in 1862-63, and a little more the following year, it fell to 25,347 centals in 1864-5. Next year the export was forty fold this amount, and it steadily increased till in 1869-70, we exported 4,863,880 centals, the largest quantity ever exported up to July 1872. Bad harvests decreased this quantity to 1,404,464 last year; but

This Year

It is variously estimated in round numbers at from 8,000,000 14,000,000 according to the varying estimates of the crop. These figures, however, include all wheat available for export as wheat or flour, but the lowest estimate exceeds by fifty per cent. the largest export of any previous year, while the highest is almost three fold. Flour exports exhibit nearly the same fluctuations of wheat though in a less marked degree. We exported a very large amount of flour when we exported but little wheat, our principal market being Australia.

The Countries Taking our Wheat

Have been principally Great Britain, the East, Australia, China and British Columbia. The table given of the exports to various countries does not represent the exports for harvest years but for current years. From it, it may be seen that on the whole Great Britain has been our best customer, taking from January, 1859, to July, 1872, not less than 21,407,417 centals. The East comes next with 2,548,960 centals, and Australia follows with 1,455,669 centals. In 1859 we exported principally to Australia, to East China and Peru. Australia being our best customer. We continued to send large quantities thither till 1869, since when the export in that direction has almost ceased. The reason is that Victoria and New South Wales now grow their own wheat. But a market will open up in New Zealand and Queensland to compensate for this. We exported to New Zealand 60,116 centals in 1868; in 1869, 43,675 centals. Exports to the East have practically ceased since 1870. There were exports thither during the three years following 1862, and practically none till 1866, when we exported to New York and Boston, nearly one-half of the whole quantity sent there for thirteen years. Exports to China have practically ceased since 1869. Japan has never taken much, yet Japan and China with Great Britain, must be our principal customers in the coming years. France and Spain have taken a cargo now and then, but France herself exports wheat this year. It is interesting to observe the fluctuation in

Prices

For the last sixteen years. Taking highest prices obtained for milling wheat we begin with \$4.87½ in February, 1857. This fell to \$3 in July of the same year. February, 1858, it rose to \$6.75, the highest ever attained, but it fell rapidly from that figure to \$2.87½ in December, of the same year. During 1859 it continued to fall till the highest price obtained in December was \$1.75. It rose to \$2.93 in January, 1862, and in 1864-65 it reached \$4.25 in October, of the former year, and \$5.30 in February, of the latter. It fell to \$1.60 in August, 1866, and rose to \$2.82½ in September, of last year. It has steadily fallen this year till \$1.55 was the highest price obtainable many days during the month. The lowest price ever paid was \$1 for distillery wheat, in November, 1860. The highest prices obtained have been in 1858 and 1865, and the lowest in 1860 and 1870. The average price of wheat since July, 1855, has been \$1.91½, nearly. The following table exhibits the average prices since 1859:

1859.....	\$2 17	1860.....	\$1 45
1860.....	1 61	1861.....	1 87½
1861.....	1 55	1862.....	2 55
1862.....	2 25	1863.....	1 79
1863.....	2 03	1864.....	2 12
1864.....	1 74	1865.....	1 85
1865.....	2 42		

Horticultural Society's Fair.

This week closes the Horticultural Society's Fair in this city for the season. It has been a success, in all that pertains to a magnificent Floral display, and we believe the same can be said of it financially.

Its management has been a credit to the judgment and good taste of those having it in charge, at the same time that it has contributed to the happiness of thousands who have daily and nightly thronged the beautifully decorated hall of exhibition.

The return of spring-time we hope will bring a renewal of the Society's efforts to promote the interests of the Floriculture and Horticulture of the State, and we hope too, that our citizens will be even more ready than ever before to extend it their patronage.

Cotton of 1872.

We have further information in regard to the Merced cotton crop. Mr. Byron Purinton of Plainsburg, writes to Dr. W. L. Twichell of this city, in substance as follows:—The cotton of which I sent you a sample was raised on the Hegleton ranch by Henry McClure, from a field of 25 acres; there are 75 acres in all on this ranch, and it is all equal to the sample I sent you; very many of the stalks have a hundred bolls each and upward.

It has been grown entirely without irrigation, and without any extraordinary pains taken with its cultivation. It seems to make the best stand in the sandy loam or sedimentary soil, well pulverized and of a nature that will not crust or bake, as the plant is rather delicate at first. Should be planted early in May or immediately after the late spring rains. There is now every appearance of an excellent yield.

Temperature at San Rafael.

From the weather record of three daily observations at the Tamalpais House, we condense the following

Notes of Temperature.

1872.	9 A. M.	12 M.	3 P. M.	6 P. M.
January...	High, 65°	Low, 46°	High, 65°	Low, 47°
February...	58	43	62	47½
March.....	58	45	68	48
April.....	66	51	78	52½
May.....	72	56½	85	60
June.....	76	60	87½	61½
July.....	71	59	79	65
August....	70	58½	81	64
September	69½	58	80½	65½
October....	72	59	81	60½
November.	68	49	80	54½
December.	58	41	64	49

In addition to this very uniform temperature, San Rafael has no fog and little wind. It is fast building up with fine suburban residences. All the land not covered with more than nine feet of water, at low tide, has been taken up. It is distant from San Francisco 14 miles,—11 by ferry to San Quentin, and 3 by rail to San Rafael. It is quite a resort for invalids, and not the least of its attractions is the excellent first-class hotel, the Tamalpais.

Best Way to Prepare Salt Fish Dinners.

Cut the fish in rather small pieces, wash it thoroughly in warm water, and leave it in cold water over night. Early in the morning remove the skin from the pieces, wash again, and put them in cold water over a fire, and let come very gradually to a boil. Then remove the vessel further back on the stove, and let it remain at an almost boiling point. Actual boiling hardens the fish. Change the water once during the process, adding hot water; keep it at the same temperature, letting it boil only once for a few minutes when nearly done. While the fish is cooking, pare nicely as many potatoes as necessary, removing carefully every imperfection from the surface, and put them as fast as pared into cold water, with a little salt in it.

Boil in separate utensils small onions, beets, or parsnips if in season. Put the potatoes into boiling water half an hour before dinner time, add a little salt to the water, and do not let them remain covered after they are fairly boiling. While the vegetables are cooking, remove the fish from the water, carefully take out every bone, and with a sharp chopping knife mince the fish to an even fineness throughout, then put it into a deep dish, add to it half a cupful of hot water with a little butter melted in it, cover closely, and place in a hot oven until dinner is ready. Prepare drawn butter for sauce, being careful not to let the butter boil, as it will become oily. Boil eggs hard, if they are liked. Some persons prefer the eggs added to the melted butter, cut in circles; others add them to the fish as they prepare it on their plates. When the potatoes are just done (not too soft) pour off the water, take the kettle to an open door (where the wind is blowing) and mash with a wooden pestle.

Replace the kettle on the fire, and do not cover it. The potatoes will keep hot and nice for one or two hours, if necessary. When dinner is served, place the dish of fish and the hot potatoes on the table last things. For dessert after a fish dinner, a deep apple pie without an undercrust is most suitable, or ripe apples, if in season, are better still.

If those who dislike fish dinners because they are troublesome in the preparation, and doubly so in serving at the table, especially where there are children to be served, will try this way, they will find there is no trouble or annoyance at the table, as all is hot and easily served, and it becomes a dinner desired by all members of the family.—*Cor. American Agriculturist.*

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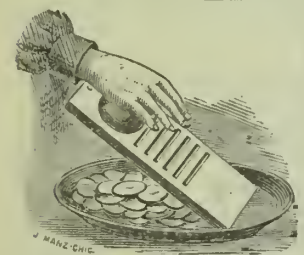
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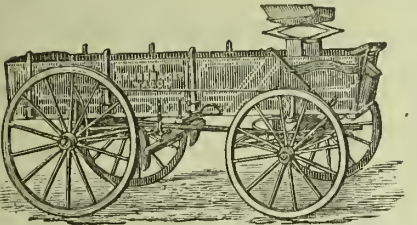
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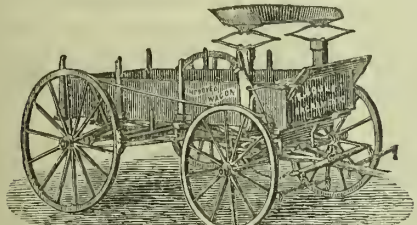
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Thimble Skein
IRON AXLE
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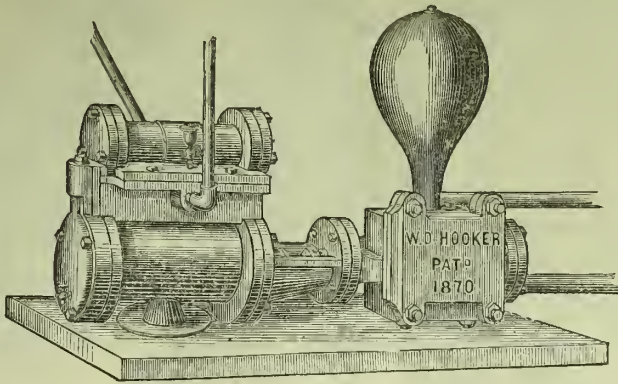
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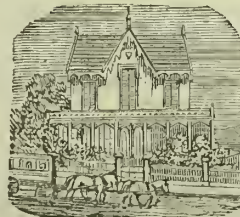
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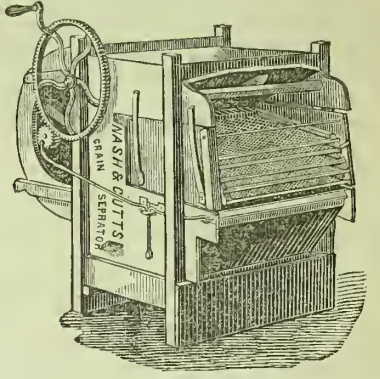
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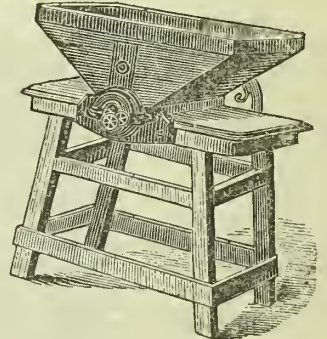
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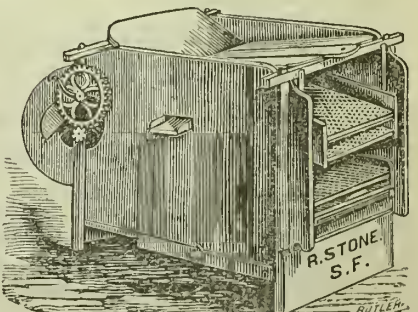
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Volume IV.]

SAN FRANCISCO, SATURDAY, SEPTEMBER, 21, 1872.

[Number 12.]

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The conservatory of the Horticultural department is 140 by 150 feet, and forty feet in

height, with roof and sides of glass. The most liberal premiums are offered in this department, and the competition on the premiums for displays by States must be exciting, because of great interest.

There should have been a much larger exhibit from California than is made; but the distance and cost, and risk of transmission is so great that many are deterred from exhibiting, who would otherwise have been glad to have presented their products in honorable competition with those of the East.

Favorable arrangements were made for reduced rates of fare with over twenty thousand miles of river and railroad, radiating from Cincinnati; but we have seen no notice from the Central Pacific or Union Pacific railroad managers, offering to take goods or persons to this great National Fair, at any reduction from ordinary rates.

From the latest information received, the Fair is a grand success, and worthy the attention of Californians having the time and desire to attend.

UPPER SACRAMENTO AGRICULTURAL SOCIETY.—From the Secretary we acknowledge the receipt of a complimentary ticket to the fourth annual fair of this society.

FARMERS' CLUBS.—We are desirous of obtaining the names of the officers of the several Farmers' Clubs throughout the State. Will our friends oblige us by sending them forward?

Attention! Farmers of California.

It is a matter of the first importance that you attend the State Fair now in progress at Sacramento. Never before in the history of the State has there been so lively an interest felt in all that pertains to our agricultural progress as now. Farmers are everywhere waking up to their interests.

The grain-grower, in view of the immensity of product capable of being produced from his fertile soils, under a proper system of cultivation, is making every effort to secure the best machinery for his purposes, and studying the best application of it in the preparation of soils and the harvesting of his crops; and as new and improved machinery is now everywhere the order of the day, and as the very best of

attention to wool growing and bought up all the sheep they could find or pay for. A depression in wool values followed soon after, somewhat abating the ardor of many as to a further enlargement of their flocks.

It gave them time to think a little and fall back on their better judgment, and resulted in an earnest inquiry into the relative values of the different breeds best to be introduced, in case they enlarged their flocks at all; and particularly was this apparent with those who had never kept sheep but were determined to do so.

Hence the unusual inquiry for the best breeds for the simple matter of the largest profit to the grower, for really that is the base of all our calculations in the raising of stock. A more full and complete exhibit of sheep of all breeds and of the best blood of the country,

aging article on the growing of mohair and interests connected with it.

Fruits and Grains.

We are getting a considerable immigration this year and many of those coming and to come, are addressing us letters of inquiry as to varieties and qualities of our best fruits, with the view of engaging in fruit culture for home and Eastern markets.

To all such as are already among us and to any of our citizens who contemplate fruit growing, we would urge the importance of an examination of the wonderful excellence and great variety of fruits on exhibition, and take copious notes of everything that pertains to variety, time of maturity, keeping quality and fitness for transportation, from the fruit growers themselves, who are always present at intervals during the Fair, and ready to impart any information desired.

The indiscriminate growing of all sorts of wheat and other grain without reference to their peculiar fitness for certain soils and other conditions pertaining to seed time and culture is a matter that has not secured that attention with us that it has in most older countries or that it deserves. We have had twenty years in which to experiment and yet a great diversity of opinion exists.

Go to the Fair and see the different grains, and talk with the growers as regards their relative values, based upon the general yield per acre, their quality and value in the market, and

the same of the numberless vegetable products on exhibition.

Dairy Products.

If you would know how to make better butter than you are now making, better cheese, better of everything that is made by the skillful housewife in the line of preserved and dried fruits, than you are now making and getting only a low price for, when you might just as well have the highest, go to the State Fair and you will see it is done, and you can learn how it is done, and much to your gratification and profit.

And finally that you may do your part in the great movement for the protection of the farming interests of California, give us the support of your presence at the first Farmers' Convention assembled in this or any other State in the Union, to be held in Sacramento on Monday next, the 23d inst.

SACRAMENTO SUGAR.—We learn that the factory of the Sacramento Valley Beet Sugar Company is in successful operation for the season, turning out a splendid article of sugar. With beets sufficient for four or five months operations, at from 50 to 75 tons per day, the result cannot be less than 2,000 barrels of No. 1 sugar; besides a large quantity of syrup, suitable for distillation.

Let all who visit the State Fair this week and next, after noticing the sugar on exhibition, go and see the works in operation, and judge whether there is money in the business.



BUILDINGS AND GROUNDS OF THE CINCINNATI INDUSTRIAL EXPOSITION OF 1872.

those machines are on exhibition at the Fair, every farmer should go and see them.

The Stock Interest.

This great agricultural interest, hardly second to any other, is receiving everywhere unusual attention. The dairymen are puzzling their brains to find out which is the best breed for milk under the peculiar conditions of soil, climate and food of their respective localities.

The Short-horn or Durham, the Devon, the Ayreshire, the Herefords, the Holderness, the Jersey, are all being studied into with regard to their particular merits and qualities, with an earnestness never before exhibited by Californians.

Farmers everywhere seem to have learned that it is a great deal better and more profitable to raise good stock than poor, and are determined to do it, though it may be attended with a little additional cost at the start; and all are looking around to see where and how they can make the desired improvement.

Now, there never was a better opportunity offered to the people of this Coast to examine and compare the merits of the different breeds of cattle, than is presented this year at the State Fair, as a larger number of the best improved breeds were never before placed on exhibition.

Sheep and Their Values.

On account of the high price paid for wool early in the season many farmers turned their

was never before made in California and should be seen by every sheep grower.

Angora or Cashmere Goats.

Something amounting almost to an excitement, has been apparent in the States and Territories west of the Rocky Mountains in regard to the growing of the Angora goat. For several years past a few enterprising breeders have given their attention to the introduction of pure bloods and crossing them with the common goat.

Hence we have a considerable number of full bloods and a great many more of all degrees of low grade. By some means it has become generally believed that an unlimited demand exists for goat's wool—mohair—at high prices, and this has had the effect to greatly increase the desire to invest in this animal.

For a number of years, flocks of these goats have been increasing in several of the Atlantic States with no profit to the owners except that derived from occasional sales of the animal to others wishing to experiment with them; but down to the present writing, without any market for their mohair at paying prices.

Owing to the present excitement on this subject, these Eastern flocks are now being transferred to this side the continent, and splendid samples of them and of California growth, will be well worthy the attention of amateur stock growers, visiting the Fair. On another page of this number of the RURAL will be found an encour-

CORRESPONDENCE.

Marin County.

Intending in gathering information among the farmers to discuss only the most practical questions, our observations will be upon the improvement of stock and of pasturage, the restoration of exhausted soils and the quality of dairy products as affecting their prices in market.

Coming lately from the East we were very agreeably surprised to find so good an average of dairy cows. Many of the citizens are showing great zeal in still further improvement knowing that the cost of keeping a poor cow is the same as for a good one and then some cows will produce at least three times as much as others. The Durhams and Devons have been extensively used for improvement and almost all the stock show signs of one or the other of these breeds.

Mr. C. H. Simes has the last one of a herd of fourteen thoroughbred Durhams, that a San Francisco gentleman sent out to Antioch to be kept. Thirteen of the noble animals were allowed to starve to death, and this one only remains, but is in good hands and may yet be the means of establishing as good a herd as the old one. Mr. S. has a fine calf named Abraham, calved Dec. 9, 1871, which girls 5 feet 5½ inches and measures 5 feet from horns to root of tail. He shows many excellent points but his owner seems very reluctant to show him at the fair because the pedigree on the side of the dam was not preserved, and so the calf cannot be entered either as grade or thoroughbred.

Mesquite Grass.

At Olema we found Mr. N. H. Olds much interested in an experiment with mesquit grass. He has about four acres sown on bottom land which shows a very heavy stubble and green leaves about the roots. This seems to be a characteristic of the mesquite wherever we find it, while almost all the native grasses are as brown as can be. His neighbors are very incredulous about the possibility of doing anything in the way of improving their grasses. But let them remember that, "he who makes two blades of grass grow where one grew before is a benefactor of his race." It seems quite probable that such an end may be gained in Marin county, for upon careful inquiry we found that there is generally allowed ten acres of pasturage to the cow, and the present condition of many herds would go to show that it was little enough.

We saw as good crops of potatoes, turnips, carrots, beets and tomatoes growing without manure on land that was supporting a cow to ten acres, as we ever saw in New York on land that was keeping a cow to every three acres.

This led us to believe that something might be done and to investigate grasses very closely. We should expect to see every acre of the flat land about Olema and Bolinas worked to its utmost capacity and irrigated wherever possible, so as to produce green food to keep up the flow of milk at this season of the year, when butter is bearing, and always will bear so good a price. We hope to see corn, alfalfa, or something better one of these days.

Corn, Games and Ducks.

Corn does not generally do well here, but in a little valley on Bolinas Bay Mr. L. P. Weeks has a field of corn that would do credit to Ohio or Illinois. He modestly says that all is due to the soil; and he raises such crops every year without any difficulty. Fowls seem to thrive here as well as corn. Mrs. Weeks has a splendid collection of games, but does not dare to advertise them yet, for fear she would not have enough to supply the customers that the Press would be sure to bring her.

Just below is Mr. McKennan's duck ranch, where we are told they sometimes keep as high as 2,000 ducks, and one told us that he saw the owner buy 30 tons of wheat for his fowls at one time. The ducks are let out at just such an hour every day, and their quarters thoroughly cleaned. The bay seems as well adapted to raising useful fowls as sea sides, and some time we shall be able to produce what eggs we consume.

Scientific Dairying.

Returning to Olema, we visit the dairy of a thoroughly progressive man, Mr. W. O. L. Crandell, who is doing his very best, and yet trying to find better methods. From the report of the American Institute Farmers' Club he concluded that it was better to work butter only once.

He tried careful experiments with four different lots, and lost on the average 6½ per cent. by the second working. To test the comparative quality he put away on June 7th a lot of each kind to see which would keep best. He put it in the worst place he could find, and in 14 days the lot worked twice began to show a strong taste, while that worked once was un-

mistakably better. The next year he tried a similar experiment, with the same result.

Mr. C. is one of those who recognizes that it requires a large number of careful experiments to establish a general law, and that every detail must be taken into the account. He does not conjure up a theory from his imagination and then try one or two experiments, with the determination that they shall prove it. From the number of quarts of milk set for each churning and the amount of butter made for 11 months to the quart of milk for each month:

Jan. 1,489, Feb. 1,416, March 1,271, May 1,385, June 1,386, July 1,421, Aug. 1,432, Sept. 1,602, Oct. 1,627, Nov. 1,544, Dec. 1,584.

How Long Should Milk Set?

From the same milking which had been mixed thoroughly in the tanks he let a part of the cream stand 36 hours on the milk, and a part 48 hours. That which set 36 hours gave 1.5 ounces to the quart, and that which set 48 hours gave 1.402 ounces to the quart. Of course temperature, amount of water in the atmosphere and wind would vary the proper time for setting milk, but ordinarily he reasons as follows: After about 36 hours there are formed globules of butter, each of which is encircled with a thin film of caseine. After this time the film thickens, and if allowed to stand much longer becomes so tough that it is not broken in churning, and so the globules are carried off, butter and all, in the buttermilk. Some experiments have gone to show that more butter could be made from milk set 48 hours, but such increased amount was produced by caseine, and not by pure butter. He uses Allen's Butter Worker and Moulds and a box churu. He prefers a churn that will bring butter in about 45 minutes, as giving the best product.

Cooling Milk.

Mr. C. has used the Empire cooler somewhat modified, but does not think the quantity of butter is increased though the quality is a little better. If he was to try another cooler he thinks he would like something made on the principle of the machine for condensing the juice of sorghum. The object of any cooler is to deprive the milk of its animal heat as soon as possible and milkmen about New York are compelled to use them in hot weather, if they would have their milk keep sweet until they can get it to their customers.

A New Method of Dairying

Is being carried out on a large scale by Mr. H. Clauzen who has been a dairyman in Germany, Denmark and Sweden for the last 35 years. He has been on his present ranch on Point Reyes two years and is following a system practiced in Philadelphia, described by Willard, practiced in Europe, but not that we have heard, by any other in this section.

He sets his milk in spring water at a temperature of about 58° using cans 22 inches deep by 20 inches across. These cans have covers which allow of ventilation but give no chance for any dirt to get into the milk. He might as well lead the covers to some one who needs them for the milk room seems so cool and clean and the air so pure that we can hardly believe that fly or dirt was ever seen there. The cans are set in vats made with their tops level with the floor and the flow of water can be regulated according to the temperature.

Cheese Making.

After the milk has stood 36 hours and the cream is still sweet, the cream is removed and the milk made into cheese. This operation is conducted in a separate room and great care is taken not to have any odors escape from one room to the other. The apparatus for cheese-making is of the most approved pattern and the cheese much better than some that we have seen made from milk not skimmed.

Whatever they make is uniform in quality, and as good as the material will make. In Sweden they do not consider their daughters initiated into household matters when they have learned all their mother can teach them, but they are sent out to serve in other houses and dairies to complete their education. As the result of this system we see in Mr. Clauzen's daughter the

Model Dairy-Maid

To whom all the man-butter makers that we meet thereabouts yield the palm. Herself, the model of system and neatness, there is not to be seen a symptom of dirt about her realm. With a man to assist her she has the whole charge of the milk of 200 cows. Mr. C. has engaged an adjoining dairy which he proposes to put his son in charge of, and says he will have another for his daughter, another year, as he considers her the most competent member of the family in the management of a dairy.

A Wonder of a Landlord.

Mr. C. rents of Mr. Howard and in consideration of the great pains that he has taken to improve the place, and to put in perfect fixtures, his landlord has reduced the rent of his own accord from \$30 to \$27.50 per cow.

The Bulletin reporter represents Mr. C. as claiming 15 to 20 per cent. more butter by setting the milk in spring water. Mr. C. made no such claim but stated to the reporter that such a statement had been made by Mr. Jewett in page 487 of Willard's Dairy Husbandry.

He claims that with pails, pans or cans, with or without water, he can get all the cream. That is as much as any one can expect. The object in using water is to preserve a more uniform temperature, improve the quality of the butter, and preserve the milk in good condition for cheese. In Sweden they prefer to have the milk stand at a temperature of 40°, and he

would try it here if he could get the ice without too much trouble. The cream should stand 24 hours before churning in a room at a temperature of 60°.

No visit to the dairy regions can be complete without a call upon Capt. Allen, generally recognized as the Father of improvements in California dairying. His place and his life have been so well described in a recent number that it compels us to make a short story, of a long and very pleasant visit. He has paid considerable attention to the subject of grasses, and has many specimens preserved and almost every kind of grass growing somewhere about the place.

Kentucky Blue Grass

Sowed early with barley did very well until the barley was cut. It was very dry at the time and the sun seemed to scorch it, so that it wilted down and was finally killed. He thinks it might perhaps be made a success by sowing it with grasses that would shade it for two or three years until it would get fairly rooted.

Orchard Grass

Stood in the shade of the dairy house and presented a fine growth and green appearance, where native grasses were all brown. This variety he looks upon with much hope. He has two varieties of mesquite grass, one much larger and coarser than that commonly seen, and said to thrive better in wet land, producing twice as much feed as the other. His experiments with mesquite have been encouraging.

Alfalfa

Has generally been supposed not to do well in as cold districts as Marin Co., but Capt. A. says it has done better for him than any other grass. He sowed it in the fall with oats and the second season he cut it twice. Thirty days after the first cutting it measured two feet high. He thought it produced at least two tons per acre each cutting. The hay seems very good. We never saw tea leaves brighter and the flavor was very good. The soil was good but not very wet. In the wettest places the alfalfa drowned out. He had a specimen of one year's growth with a root two feet long.

Filaree

Grows very much like alfalfa and is a choice morsel for the cattle. The plant seems to be smaller and the root bears a greater resemblance to sweet clover. Capt. Allen's reputation enables him to secure ten to fifteen per cent. above the market price for his butter, but if those who consume the butter could examine the different dairies as we have done, they would make four times that difference. It is pretty hard to spoil butter in such an even climate and with such a quality of feed as there is in Marin, but the different dairies present appearances all the way from perfect neatness to thorough filth.

People Will Pay Well for Good Butter.

Those who take least pains claim good prices for butter, but we think there will come a time when even San Francisco people will learn to discriminate between a good article and a poor one. We know enough of Eastern markets to feel assured that if the butter from Point Reyes, or any other locality that we have visited, is bought indiscriminately to send East it will be heard from. There the poorest layer in a firkin of butter determines the price of the whole.

If a poor article of butter comes from California it will injure the sale of the whole shipment and those which follow it.

Mr. George Waring gets 75 cents per pound for his butter when common butter, called pretty fair, brings not more than 25. There is a certain class of people in Boston, New York and Philadelphia who will always pay a fancy price for a fancy article. Through the months of January, February, March and April we don't think they can be as well supplied with butter from any other section as from the fresh rich grasses of California. It is a trade worth having and we hope there will be no more blockades to break it up this year and that the dealers will be careful to keep the reputation of California butter high.

Among other noted dairies which we had not time to visit, were those of Mr. Pierce and Mr. Evans, as well as that of S. B. Crandell, which we just glanced at. We presume many others make as good quality of butter as those we have mentioned, but we are sure that many do not.

We hope the farmers of Marin will experiment with different kinds of grasses more extensively, and let us hear the result. Do not forget the native grasses, especially the

Bunch Grass.

Which starts first in the spring and forms so good a sod. We are inclined to think that for the hill lands a mixture of various kinds of grasses will do better than any one kind.

When one kind is gone let another come up to take its place. Be careful to have something that will form such a sod that the rains will not wash it out so easily, or short feeding destroy it for next season, or the tracks of the cattle in wet weather uproot so much as of the wild oats. To save the native grasses will require that a patch be fenced and the seed gathered by hand to get some that is pure to start with.

The experience of those whom we have met has been in favor of seeding before the rains or early in winter, and in connection with some crop.

Of Tomales, conquering sorrel and restoring worn-out soil, we may speak in our next. C.

Mendocino County.

Eds. Press:—It is with much interest that I have read your valuable paper for the last year, or rather from its first number, more especially the issue of Sept. 7th. Though not at present engaged in farming operations, still my interest in aught that concerns the agriculturist of the day is second to none. I have always been a reader of works devoted to the farmer's wants, and am a thorough believer in "book farming," if as practical as theoretical.

I look upon the Press as the best paper ever issued for the benefit of the farmers of the Pacific slope, and next to it was the California Cultivist of a decade ago.

A Comparison.

The latter was rather too much an expression of one man's views, as influenced by his immediate agricultural operations, while the Press seems to be that tempered by the combined operations and experience of many. I was a careful and enthusiastic reader of the old Cultivist, and still have most of its numbers, and my regret at its demise was not lessened by the fact that I had just made a small advance payment of subscription.

The reports of the meetings of the different Farmers' Clubs are full of interest and information to us frontier farmers, who are sixty miles from the nearest organization of the kind. Mr. Webster's article on summer fallowing is worthy of attention from all our farmers, but I would ask: might not profit to the pocket and benefit to the soil be united by planting the ground to corn? I quit farming about four years ago, and have rented my place since, upon the express terms that corn should occupy the land alternate years, and in that way have received more wheat as rental than I would have done had it all been in wheat each year, and the corn amply pays for all labor, even in the poorest of the ground.

Several Important Inquiries.

I would like some information about alfalfa and mesquite grass. I have high, sandy land, covered with fine bunch grass and resin weed or wild sunflower, and I have sandy loam bottom, and wet black clover ground. The upland by summer fallowing will produce 10 or 15 bushels of wheat; the black land, if not too wet a season, will produce 30 to 40 bushels. Can I put the latter in alfalfa and the former in mesquite? What is the best time and manner of sowing either? We have freezing weather in December, January and February; when it is clear, as a rule, say about two degrees below freezing—seven degrees below being the minimum in the last twelve years.

Some attempts with alfalfa in the fall, on poor land, failed. Mesquite has not been tried here. We have but little fog, and but for the sea breeze and cold nights, have summer weather akin to the Sacramento valley.

What can pure, reliable seed be obtained for? Hoping you or your contributors may answer this, I remain yours, etc. c.

Ukiah, Sept. 8, 1872.

We are very sure our readers like to read an occasional article similar in spirit and fact to the foregoing. It elicits inquiry and thought, and calls upon those who are familiar with the topics discussed to proffer their opinion in answer to the queries suggested; and while for the present we answer only the last one—the price of seed—we hope our practical farmers will forward their thoughts on the other points of inquiry. In this way we bring out a kind of Farmers' General Club discussion, through the columns of the Press, that must be interesting to a large majority of our readers, and a help to the advancement of agriculture everywhere.

To DEVELOP TALENT.—Place a man in a position that will fearfully tax him and try him, a position that will often bring the blush to his cheek and the sweat to his brow, a position that will overmaster him at times, and cause him to rack his brain for resources. Place him in a position like this. But every time he trips go to his rescue; go not with words of blame or censure, but go with manful words of encouragement, look him boldly in the eye and speak them with soul and emphasis. This is the way to make a man of a boy and a giant of a man. If a man has pluck and talent, no matter if he ever filled a given position or not; put him in it, if worthy, and he will soon not only fill it, but outgrow it. But put him in a position with a faint heart. This is the way to kill him. Put him in grandly with most unmistakable confidence. Drop no caveats, but boldly point the way, and then stand by with the will and countenance of a true friend. Thus try twenty men, such as have been named, and nineteen will succeed.

CAN THE LEAVES OF PLANTS ABSORB WATER?—Cailliet has shown that if the soil be sufficiently moist, the roots take up all the water the plant requires; if not, then the leaves absorb it in the liquid state.

POULTRY NOTES.

Poultry and Parasitic Insects.

EDS. PRESS:—Deeming it a duty to do what we can in advancing the interests of our fellows, and at the present as that of the gallinaceous family appears to be closely allied or identified therewith, any and everything effecting it favorably is of a corresponding benefit to man. With this preface we will at once to the subject.

The fact is conceded by all who have had experience that California, however favorable it may be for grain raising and the production of the varied fruits, is not so with poultry breeding. We are reminded of this by the figures ruling in our markets, where we quote 40c. @ 75c. per doz. for eggs; 50c. @ \$1.25 each for broilers and birds for the pot, as well as the item of crates of eggs appearing on the manifests of each Oregon steamer and on the P. R. R. freight bills, exciting remark and inquiry from our Eastern visitors, who cannot understand why such extreme prices should exist in a land where everything else is so abundant and cheap.

The Reasons or Cause.

First, the protracted drouth of our summers, which favors the production and growth of an infinite variety of parasitic insects. Second, the want of pure water and green food, coupled with that of silicious and calcareous gravels and sand, want of proper shade and roosting places. Third, want of care in renewing or crossing the breeds, which by constant inbreeding become weakened and disposed to disease. Also by allowing the flock to become superannuated by continually selecting the young and vigorous for the table or marketing.

With the first cause we can do nothing—with its effects, everything. There is but one reliable remedy that we have found for freeing poultry of the vermin that infest them as well as their habitations and homes.

A Certain Remedy.

This is the spent lime, or gas-house lime as it is generally known, which is highly charged with carbolic acid; it retains for a length of time after being drawn, giving off the fumes gradually which are most destructive to the whole list of animal or vegetable parasites. The free distribution of this lime around the premises, roosting places, nests, etc., as well as mixed with wood-ashes for a wallowing place—and there will be no more trouble from lice—it is excellent for sprinkling in out-houses, barns, granaries, in fact any and everywhere that we wish freed of insects or vermin.

Having tried carbolic salts in solution and dilution, crude brimstone, sulphur, kerosene, quick-lime, fish-oil, hot water, soap-suds, in fact, everything suggested; without permanent benefit. Spent-lime has solved the problem with me and as it is not patented, or absorbed by a joint stock company, it can be used, and is free to all.

By supplying the wants as cited as the causes for the second and third reasons of failure, there is no doubt of our State proving able to supply her home markets with the luxuries, or necessities rather, of healthy and cheap poultry and eggs, as well as supplying an abundance for exportation. G. C. PEARSON. South Vallejo, Sept. 12th, 1872.

FOWLS kept in confined space should have soft food once a day, say the first feed in the morning, and plenty of green food; lettuce during the season is excellent, also cabbages; the heads should be thrown whole to the fowls, not chopped—it will not afford them employment. Meat should also be supplied, or they may eat each others feathers. A skewer run through is a capital plan; it enables the birds to pick off the meat in mouthfuls, without its being dragged all over the yard. A change of food occasionally is always desirable.

RULES FOR REARING CHICKENS.—1. Keep your chickens in a warm, dry coop. 2. The coop should be cleaned out and dry earth thrown in every day. 3. Let the chickens out after the morning sun has removed the wet from the grass. 4. Feed them suitable food, and frequently. 5. Keep pure water where they can get it easily. 6. Keep them away from decaying fruit and vegetables, and stagnant pools.

FOOD FOR CHICKENS.—Thomas Heathwood, a successful breeder of game fowls, gives the following as the proper food for young chickens: One egg, with the shell, beaten into a quart of raw oatmeal, and wet up with new milk. Feed them from four to six times a day, according to age. Lettuce, onion tops, or fresh grass, chopped fine, should be given them at least once a day.

HEN'S NESTS should be made by placing in the bottom of the nest-basket or box a cut turf, and a shovelful of dry earth or ashes; on this place short straw, first hollowing out the earth in the shape of a nest. A more even temperature is obtained for the eggs than in straw nests alone. Such nests are particularly adapted for early setting when the weather is cold.

EGGS.—A good egg is made up of ten parts shell, sixty parts white, and thirty parts yolk. The white of an egg contains eighty-six per cent. of water, the yolk fifty-two per cent. The average weight of an egg is two ounces.

Experimenting With Layers.

In the *Poultry World*, Isaac Lynde, of Ohio, gives the result of an experiment with different breeds of pullets in laying for six months, and the cost of their feed. On Sept. 1, he took ten pullets of each of the breeds mentioned below, about six months old, gave them a yard forty feet square, with a comfortable house, and kept an exact account of eggs and feed, as follows:

The Dark Brahmas ate 369½ quarts of corn, oats and wheat screenings, laid 605 eggs, and weighed 70 pounds.

The Buff Cochins ate 406 quarts, laid 591 eggs, and weighed 73 pounds.

The Grey Dorkings ate 309½ quarts, laid 524 eggs, and weighed 59½ pounds.

The Houdans ate 214½ quarts, laid 783 eggs, and weighed 45½ pounds.

The Leghorns ate 231½ quarts, laid 807 eggs, and weighed 36½ pounds.

To make this experiment more complete, and to show what lot gave the most profit, including both eggs and flesh, we have supposed the fowls to be dressed and sold at the end of the six months at twenty cents per pound; also, that the eggs were worth twenty-four cents a dozen (two cents each), and that the cost of the feed was two and one-half cents per quart, or eighty cents per bushel. The figures would then be:

	Cost of feed.	Value eggs.	Value meal.	Total value.	Total profit.
Brahmas.....	\$ 9.22	\$12.10	\$14.00	\$26.10	\$16.88
Cochins.....	10.15	11.82	14.60	26.42	16.27
Dorkings.....	7.72	10.48	11.90	23.38	14.66
Houdans.....	5.35	15.66	9.10	24.76	19.41
Leghorns.....	5.77	16.19	7.30	23.44	17.67

The greatest profit on the investment is thus in favor of the Houdans, with the Leghorns next and the Dorkings least. It would have been interesting, however, to know the weight of the eggs laid by the several varieties, to see what actual difference there was in the amount of food furnished by them and its value at a fair estimate by weight. On such a basis it is quite probable that the Brahmas would have shown the greatest profit. And another item to be considered by investors is, that where the fowls must be confined, a four-foot fence will answer for the large breeds, while for the light bodied breeds eight or ten feet will be necessary, and even then their wings will have to be clipped. In addition, it is the general verdict that the large breeds bear confinement the best, and are more easily kept in good health and from those vicious habits of plucking each other's feathers and eating their own eggs. But all breeds will give trouble enough in confinement, if not furnished with plenty of employment, water and food.

Fattening Cattle Quick or Slow.

There appears no room for questioning the fact, that an animal fattened quickly makes much finer eating than an animal which has been fattened slowly, or which has remained fat for some time. The meat in such cases is sweeter and juicier, but whether it possesses any more nutriment is not quite so clear. There are many people who have had the privilege of partaking of the flesh of prize animals, which had been maintained in high condition for a long time, and they have generally reported the flesh as hard and tough; and probably they did not judge it as harshly as they would have done had they purchased the same "cut" from the nearest butcher's stall.

During a somewhat extended connection with the public press, we have at various times been favored with slices from "Christmas cattle," which are generally pushed for a couple of years at least before being regarded as ready for the shambles, and in all such cases have been profoundly disappointed with the results realized at the table. We never yet had such a piece of meat prove as good as the "cuts" we were able to obtain every day from the regular family butcher. The best meat is certainly to be found where an animal has been fattened with the utmost rapidity.

Aside from the matter of quality, there is a question of economy which is well worth considering. An animal requires a certain amount of food daily to sustain life and supply heat and the waste of tissues. It is only the excess of food over these requirements of nature which go to make fat or increase flesh. And if too great a time is expended in the aggregate food consumed by the animal is expended in the supply of the natural requirements of its system, and a less proportion devoted to the increase in weight, than if the fattening process were hastened.

In short, a great deal more food will be required to make 100 pounds increase in the weight of an animal, if 30 days are taken for it, than if the feeding operations are confined to 20 days, and so on. There is where many make a grave mistake. Animals in course of preparation for the shambles, should not be stunted in food. They should be fed all they will eat and assimilate properly. And the more an animal will eat and properly assimilate in a given time, the more profitable he will be for feeding purposes, other things being equal. The money in feeding is all made by "forcing" animals to the utmost, whenever their preparation for the shambles has been once undertaken.—*Live Stock Journal*.

MISCELLANEOUS.

Associations for the Advancement of Science.

The American Association for the Advancement of Science, commenced its 21st annual meeting at Dubuque, Wednesday, 21st ult., 150 members being present. Professor Asa Gray, of Cambridge, the retiring President, called the meeting to order, and Prof. J. Lawrence Smith, of Louisville took the chair. A number of new members were admitted, and eighteen papers were filed for future reading. A reception meeting was held in the evening, at which United States Senator W. R. Allison delivered a welcome address, and Professor Gray responded. We shall make further reference to the interesting proceedings of this body in future numbers.

European Science Associations.

An association has been founded in France on the model of the British association, and the first meeting is appointed to be held at Bordeaux, on the 5th day of September, 1872. The Council of Administration consists of Claude Bernard, President; Broca, Delaunay, d'Eichthal, de Quatrefages, Wurtz, Cornu, Secretary, and Masson, Treasurer. The founders say that one of the greatest intellectual wants of France is a decentralization of science. They wish to encourage by every means in their power the creation and development of scientific centers in all of the large towns of the provinces, and they propose to hold meetings in different cities of all persons who take an interest in scientific study and have anything to communicate; in other words, they desire to establish a republic of science, and to break down the monopoly of the Institute. Already a large number of members have been enrolled, and more than \$20,000 subscribed. The movement is an important and significant one, and the first meeting at Bordeaux will be watched with interest by scientific men everywhere.

The British Association convened this year at Brighton. The first general meeting met Aug. 14, when Prof. Sir William Thompson, F. R. S., resigned the chair, and Dr. W. B. Carpenter, F. R. S., assumed the Presidency, and delivered an excellent address, from which we may hereafter furnish extracts.

The forty-fifth annual session of the German Society of Naturalists and Physicians was held in Leipzig during the week of August 12th and August 18th, 1872.

DISTILLATION BY COLD.—Alfred H. Smea, the inventor of the battery named after him, has communicated to the Royal Society a method which he has devised, and which he names "distillation by cold," which promises to have a useful application in the arts, and by which he believes the detection and determination of ammonia and other organic impurities existing in the atmosphere will be greatly facilitated. A description of the process is condensed as follows in the *N. Y. Gas Light Jour.*:

A glass funnel—usually of 8 or 9 inches—is drawn to a point and closed. It is supported in an ordinary stand, and filled with ice. Condensation of the watery vapor of the atmosphere then takes place; the dew collects into drops, which trickle down the outside of the funnel, and at last fall from the point, under which a small receiver is placed to catch them. The total quantity of liquid collected in a given time is measured, and the quantity of ammonia determined by Nessler's test.

By the method of distillation by cold, the author found it possible to distil many substances which are decomposed at a high temperature. Thus many delicate odors of flowers were distilled by placing the flowers under a bell-glass sufficiently large to cover the funnel containing the ice. The odors were found to be more rapidly and completely abstracted by placing a dish with a little ether under the bell-glass at the time of distillation.

The paper was accompanied by tables giving the results obtained in 107 experiments, together with the atmospheric conditions prevailing at the time. The experiments were made in a garden, in a bed-room, in hospital wards, in the open country, etc. A few of the numbers obtained are here given by way of example:

Fluid collected in minims.	Ammonia in grs. per gallon.	Source.
150	1.9742	Erysipelas.
120	0.1791	Garden.
55	6.8807	Drains.
90	2.1000	Bed-room.
	2.9568	Stables.
150	0.0985	Victoria Park.

SPECTROSCOPIC.—Pluecker, Wuellner and others, have endeavored to cast a doubt on our ordinary spectroscopic theories by maintaining that a single gas, when incandescent, may give numerous spectra, varying with the temperature. Angstrom has lately combatted all this, in a communication to the French Academy, asserting that hydrogen, for example, has, when pure, but one spectrum, that namely which is observed in the light of the sun and the stars. One of the spectra attributed by Pluecker to this gas is that of acetylene, another that of sulphur. In the case of oxygen, for which Wuellner found three spectra, one is asserted by Angstrom to have a great analogy with that of carbonic oxide, another is the spectrum of chlorine.]

Terra Cotta in Architecture.

The use of terra cotta in architecture is at present exciting considerable attention on both sides of the Atlantic, being warmly advocated by some and earnestly opposed by others. When properly manufactured, it is unquestionably one of the most durable materials which can be employed; but like stone or any building material, it requires inspection before use. Very fine specimens of terra cotta made in London one hundred years ago, and exposed to the weather since, are still perfect. In Northern Italy, many fine examples of brick and terra cotta exist, and the extensive revival in England and Germany of the method of building is worthy of note.

The strength of well-made terra cotta is surprising. A piece of four-inch column, made by Pulham, and tested at the 1851 Exhibition, required a pressure of 400 tons to the square foot to crush it, or as much as good granite, and two or three times as much as most building stone. In a paper recently read at the agricultural Conference in London, Mr. C. Barry gave some valuable results of experiments on terra cotta, showing the crushing strength of this material to be seven and a half times greater than that of average brick. A simple test of the texture of terra cotta is the point of a pen-knife, which should not penetrate the surface, and will some times strike fire upon it.

The true qualities of terra cotta in its application to architecture, consist in its merits as a decorative fire-proof material, possessing the three essentials of color, durability, and economy. When treated with due regard to construction, so as to fulfil its part in the building as honestly as the brickwork of the wall itself, the material admits of the impress of original art being reproduced for the uses of the architect in an almost imperishable substance. Fine works in hard stone are exceedingly difficult of execution, and in soft stone soon crumbles away; the labor of the artist may be saved by taking a mould of his work, and reproducing it in terra cotta as often as may be required; indeed, the great economy in the use of terra cotta lies in producing a great number of articles of the same pattern. Where original art is required, the subject can be modeled in the actual terra cotta clay, and passed through the kiln, from which it issues an original work of the sculptor, without the intervention of mechanical copying. Modern examples of the extensive use of terra cotta are seen in the new Dulwich College, costing \$500,000, the South Kensington Museum, various hotels and stores, and the great Albert Hall, which cost \$2,500,000. The same structures, decorated in stone, would have cost much more.

"EXPLOSIVE GAS GENERATED FROM COAL.—REMARKABLE OCCURRENCE."—Under the above head is recorded the occurrence of a serious explosion, which took place on board the steamer Torino, while lying at the Tyne Docks, South Shields. The vessel was loading gas coals, and the cook and two seamen went below to get some provisions, carrying with them a lighted candle. They no sooner got below than a terrible explosion took place from the gas generated from the coals. The men were knocked down and dreadfully burned in all parts of the body. One of them is not expected to live. They were conveyed by special train to the Newcastle Infirmary. On the explosion taking place the steamer took fire, which was extinguished only after being considerably damaged by the casualty.

There is nothing remarkable in the above occurrence, only in its variety, and the wonder that it does not oftener occur under similar circumstances. The accumulation of gas in the atmosphere of a ship's hold to an explosive point, is only a repetition of the common occurrence of the same thing in the galleries of a mine, and similar care should be exercised in the one case as the other.

"HYDROSCOPY."—A Frenchman, by the name of Paramelle, has been devoting himself to the scientific study of subterranean waters, the kind of ground where they are to be found, their flowing, the physical laws that govern their abundance or scarcity and their depth. The science is now said to be complete, and has been christened "hydroscopy," or subterranean hydrology. Its applications are definite, and among them we must place in the first rank the discovery of springs and well sites. Within easy access of every village, almost of every house, and generally at a little depth below the surface of the soil, there exist streams of water. By a simple digging, (indicated after a thorough survey of the place, and not by the aid of the divining rods, which have made so many dupes), one can channel out the hidden streams, and make them flow to the surface; or else a well can be dug which will furnish an abundant supply of water. Paramelle has already, it is stated, discovered 9,500 springs in France, and his disciples have been equally successful.—*Amer. Artisan*.

THE ZODIACAL LIGHT.—C. Piazzi Smith has found that the spectrum of starlight is identical with that of the Zodiacal light, and hence assumes the old astronomical theory, that the Zodiacal light is from the solar illumination of infinitely small, distant particles of matter, such, perhaps, as meteors, revolving about the sun.

FARMERS IN COUNCIL.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

Friday evening, Sept. 13. Dr. Carr in the chair.

Under the heading of new business, Dr. Carr said—I will take the liberty of calling the attention of the Club to a new patent steel skeleton harvester guard, that has been handed to me, which is open for your inspection. It is from a manufactory in Cayuga, New York. I also wish to show you the

Rare Display of Fruit,

Now before me. During the week I visited the Contra Costa county Fair, in our almost neighboring town of Pacheco, where there was an exhibition of stock and other things of interest—especially some of the fruits. One of them is quite a matter of curiosity. It is a seedling apple with a red pulp, as red, almost, as a beet. It is a little soft and spongy as it is some time since it has been picked from the tree.

I also, during the Fair, (from which I returned last night by moonlight) visited the

Alhambra Gardens,

Three miles south from Martinez, situated in a little valley some quarter of a mile wide, connected with the Penola Valley, and protected from wind by hills on the east and west sides, and partly on the north. It has an opening on the south side and has a climate as different from that of Benicia, a few miles distant, as San Francisco has from San Diego. It has in fact quite a tropical climate where oranges, etc., grow very well. Dr. J. Strentzel, the proprietor, is I think one of the most intelligent fruit growers that I have known. He has been seventeen years there and has got one of the finest vineyards that I have seen in the State, and one hundred and fifty acres in one of the choicest spots in the valley. Last evening he went out and picked me some fruits, such as happened to be in the best condition to be eaten, but before eating I thought I would bring them here this evening. All these, with the exception of the oranges and lemons, were picked last evening. They really looked too good to eat. He raises a quantity of quince. I took these two and weighed them. This one (holding it up) weighs two pounds. The other is nearly as heavy. Here are also some beautiful pomegranates. His grapes are mostly European varieties, I did not see a single Mission grape there. These grapes are the Black Prince, the Black Morocco—a small seedless grape—the White Seedless grape, the Tokay, the Muscat of Alexandria, the Black Hamburg, the Rose of Peru, and pears and other fruits, in numbers and of choice varieties. Here are some Seckel Pears which are as fine as I have ever tasted. He has about 25 to 30 orange trees and I have seen fruit hanging on them as large as these. These are called the Mandarin Orange—weight about one pound each—and are very thick skinned. (The oranges were the largest we have ever seen. ED. RURAL PRESS)—they were sent down two weeks since, and were shown at the Horticultural Fair, San Francisco. Of two that I tasted one possessed a flavor resembling the Tahiti orange, the other tasted as well as any Los Angeles orange, or indeed those of any other part of the State. He has lemons also. Here is a fine specimen of the Sicily lemon. I know no part of the State better worth a visit than his place near Martinez. He markets for the table nearly all his grapes, but makes wine from a few to show what can be done in that direction. He illustrates the business of grape-growing remarkably well. No more choice wines have I seen in California than at his establishment.

Mr. Dewey—"How large are his orange trees at present?"

Dr. Carr—"They are, I think, from 12 to 20 feet high, 15 years old, and seedlings. The limbs come near the ground. Most all the fruit on the place has raised from seedlings. His figs are remarkably fine, as also are his olives."

Planting and Culture of Fruit Trees.

Mr. Montandon said—I must state that I have not prepared an elaborate essay on this matter, as I expected Judge Dwinelle to occupy most of your time. The treatment of fruit trees is everywhere, in a measure, the same, but the intelligent cultivator has to adapt it to the soil and the climate whenever he changes from place to place. I may say, in introducing this subject, that I have studied for years under one of the most eminent masters in France.

The ascending sap is sucked from the ground by the roots, rootlets or spongiolles, which stretch themselves by degrees forward as the branches develop themselves, as it aims always to carry itself to the highest parts of the tree. But that this operation can be effectual, the ascending sap must be called, or excited, by the descending one. If differently, the ascending sap will not rise,

but to a certain height. Experience has demonstrated that if a tree has been subjected to a too close cutting, or to a too great suppression of branches (the branches being always in harmony with the roots) it is injured at the base of the tree. Too close pruning should always be avoided, so as to leave as much harmony as possible between the branches and the roots.

This allows the plant to absorb its own sap, an indispensable condition for the health of a tree. Gum originates from an excess of sap which can not be absorbed into the branches, and so forces itself through the bark. The warmer and damper the weather, the freer the circulation of the sap. The descending sap serves to form the ligneous part of the tree, and it is the ascending sap which causes the prolongment of the branches, forms the leaves, flowers, fruits, etc. Towards fall the ascending sap operates with but a slow movement, as its motion depends upon the temperature. It has not force enough to prolong the branches, and therefore accumulates in its summits, swells the buds and prepares them to develop themselves as soon as the temperature becomes sufficiently regulated, or warm. Thus, you will remark that the top bud is the most prompt to develop itself. As you look downward along the branches, you notice that the buds become smaller. As soon as the weather becomes warmer, the terminating bud develops itself, the leaves appear and form respiratory organs which act feebly at first but with more energy as the leaves are more developed and as the warmth increases the circulation of the sap.

A tree does not breathe through the bark. As soon as one splits the epidermis on a branch, or cuts the top of a branchlet, he opens a point of respiration. By the pruning operation, one opens a respiratory organ which acts as a leaf as long as the wound is unhealed or not overgrown. If pruned even in December, the wound would only be closed by the sap in the month of May or June ensuing. An incision made to introduce a graft, calls the sap to that point, and so contributes to the development of the graft. In the normal growth of vegetation, it is always the upper bud which develops itself; the other gradually, one after another, to the base of the tree. One can see that the sap can be called at will to one side or the other; but care must be taken not to direct the sap in too great quantities. Here rests the fundamental basis of arboriculture. Of the choice of trees for planting, I need not tell you that such and such a tree grafts best on such or such another. Every nurseryman is intelligent enough to put his graft on proper subjects.

Planting and Fruiting.

When I plant a fruit tree where the soil has been mauled I make a hole a square metre, that is about three inches more than a yard in length and breadth, and 80 centimetres or about three feet in depth. I am careful to take about a wheelbarrow full of manure and street-scrappings, when convenient, and mix them with the upper soil, which I put on the bottom so that when I plant the tree it vegetates with the upper soil. If the tree is planted in an orchard I make a square hole as deep as wide. When a tree has been properly planted, it is sufficient to loosen the top compact soil, and it will vegetate as well as if the land had been cultivated. I have seen the fruit trees planted this way in walks in college grounds in France, where there are five or six thousand pupils. I have seen there a grape-tree—the Chasselas Fontainebleau produce 600 pounds of fruit. You will never attain such a result in planting as when you have the ground properly prepared. Otherwise you may plant the finest grapes and they will develop into mere seeds. Skill and nature must be coöperative.

Pruning—To Have Good Fruit, Etc.

Trimming consists principally in the proper balancing of the growth of the tree. It is almost impossible to tell how each tree has to be properly balanced in this respect. Light and air are indispensable to the growth of fruits. If a tree is crowded by branches it becomes hard and the sap cannot circulate as before.

To have good fruit we must not compel it to grow on the top of the branches. I pruned Mr. F. Blake's trees, (on Telegraph road, Oakland) three winters ago. When I came there he watched me pretty closely, but said nothing. When I came to the quince trees they were in a wild state. I began to saw many branches away, yet counterbalancing every branch well. When he came to see what I had done he says, "you have spoiled my trees, I shall have no fruit." "Wait," I said, "you will see." He was astonished at the result and the abundant yield. The next year I did not intend to prune, yet he and his neighbor, Mr. Robbins, insisted upon my doing so.

After a few more observations, Mr. Montandon said that they might easily know a good gardener from a bad one by the former being proud of his profession and more independent, and that a bad gardener was dear at any price, while a good one was worthy of good wages, even though they might greatly exceed those demanded by those who had not been educated in the profession.

Tea Growing in Oakland.

Mr. Pryal presented a specimen of the Japanese tea plant, grown at his place in the open air. The leaves were very large and green, and possessed a velvety appearance. His tea plants are protected from the bay winds by a close evergreen hedge. He alluded to the mention made by the RURAL PRESS sometime since, that the probable failure of the tea plant in Napa and El Dorado counties was wholly or partly owing to a lack of summer rains, such

as prevail in tea producing countries, and that some more favorable location might yet be found in California. Mr. Pryal's experiment seems to prove that the moist climate of our bay is favorable to its growth.

Dr. Carr—"How large are your tea plants now?"

Mr. Pryal—"About two feet high. It has been raised from the seed. I placed it out about two years ago from my green-house. The soil is a gravelly one, well drained."

[Remarks by members on hedge protectors for trees; tree planting by President Carr, etc., for want of room here will appear next week.]

Mr. Dewey said that as one of the delegates to the FARMER'S CLUB STATE CONVENTION he would like to receive suggestions and opinions of members of the Club on matters that should be brought before the Convention. He would say that if there were no other arrangements made for communicating with our delegates at the State Fair, that the RURAL PRESS would have a stand there, and that they could communicate through that means. Members of other clubs, and farmers at large, might aid their cause by writing their ideas, and addressing them to the Convention.

Mr. Pryal suggested instructing the delegates and commented excitedly and severely on the action of the Board of Regents of the State University for holding sessions with closed doors, and refusing admission to reporters of the press, etc.

Mr. Pryal also entered a protest against the remarks of Mr. Saul in the Napa Club, with regard to traveling nurserymen.

Should he deem it best not to hold the next meeting of the Club on the 4th Friday in September, the President was requested to notify the Club in season by publication.

Mr. Webster furnished a lot of what is called cheese cabbage seed, and presented it for the use of the club or any others who might address the club for free samples. He obtained the seed from the Eastern States. It is a new variety, at least in this State. Its heads being solid makes its name quite appropriate. Here its compactness sometimes causes the heads to burst open.

Wild Morning Glory.

Mr. Webster said there was a little vine called the wild Morning Glory which is troubling him a great deal. It is growing very thick in many places in the county. He had dug it up, sifted the earth to clear it from the roots, but in six months it was up again. He then tried salt but it did no good.

Mr. Pryal said he run a cultivator through it and there is none scarcely left.

Mr. Webster said his experience was that the more it was cultivated the more it grows. He had come to the conclusion that it had started on the other side of the world, as the deeper he dug the larger he found the roots.

Mrs. Carr stated there were several varieties, and Mr. Webster acknowledged his were of the white species and the same that have greatly troubled the Luelling Nurseries. Mrs. Carr advised the continual cutting off the tops and destroying the upper growth; the roots would eventually die. After votes of thanks to Mr. Mantandon and Dr. Strentzel the meeting adjourned.

Santa Cruz Farmers' Club.

The Club met at the Court House on Saturday, Sept. 7th. The President, Mr. Mattison, in the chair. Minutes of last meeting read and approved. A letter from Prof. E. S. Carr was read, stating that he would deliver his address on Saturday, Oct. 12th.

The committee on the best means of advertising the fair reported that they had 1,500 postal cards struck off for general use.

Mr. Locke, from the committee on the plums suspected of being bitten by the curculio, made the following report:

To the Farmers' Club of Santa Cruz Co.:—Your committee on plums suspected of having been bitten by the curculio, would state that they have not yet so thoroughly investigated the subject as it demands; that the little crescent-shaped incisions look suspicious, indeed, but may have been produced by falling upon the ground, especially upon stubble, and from the large numbers said to have dropped, such only was sent us as bore the suspicious marks. Said stubble might also account for their falling.

We examined these cuts with a glass for eggs, but discovered none, and have since learned that they are never deposited in them, but according to Dr. Hill, of Ohio, "the female first bores a round hole with her snout, slanting backward, and therein deposits her eggs just beneath the skin; she then cuts the crescent shaped slit in front of it so as to undermine the egg and leave it in a kind of flap, thus preventing the growing fruit from crushing it."

We would call the attention of Clubs in other parts of the State to the subject.

D. M. LOCKE, R. H. SAWIN,

Committee.

On motion, the report was received and placed on file.

Mr. Cahoon, from the committee on assessments in this county, made the following report:

The committee appointed to inquire into and report on the mode and manner in which valuations and assessments of real and personal property have been valued in the county of Santa Cruz for the fiscal years of 1871 and '72, beg leave to report that they have given the subject intrusted to them as much considera-

tion as their limited time would permit, and as the result of their consideration they are of the opinion that in general, personal property and improvements have been valued and assessed much higher in proportion to relative value than real estate, as they are subject to depreciation in different ways—stock by disease and buildings not only by fire, but a continual depreciation by age, etc., while real estate is continually increasing in value.

Inequality of Assessments.

In regard to valuation placed on real estate, some instances of gross inequality have come to our knowledge, that require special notice. A tract of land owned by Thomas Fallon, was assessed at about \$8 per acre, and raised by the Board of Equalization, about \$2 per acre.

The Augmentation rancho, owned by Mr. Hihn and others, was assessed as follows: Mr. Hihn's portion at about \$2.25 per acre, and the other owners at from \$5 to \$10 and upward, and some of the owners their lands confessedly not as valuable as that of Mr. Hihn's.

A singular feature in the valuation of the Augmentation rancho is that while, in general, in the matter of assessments and valuations has been intrusted to his deputies, of the lands adjoining Mr. Hihn, yet the Assessor, Mr. Hoff, took it upon himself to place the valuation on the lands of Mr. Hihn. It is but just to state that the Board of equalization promptly repaired the wrong by correcting the Assessor's error in judgment and raising the assessment value of Mr. Hihn's land about \$16,400.

Inexcusable Neglect.

But the Committee regard such instances of gross inequality as wholly inexcusable, and they clearly show either that the Assessor is selected regardless of his fitness to perform the duties of his office, or there has been inexcusable neglect.

Your Committee, in conclusion, would urge on the tax-payers of this county the necessity of examining the Assessor's books in order that all cases of injustice may come before the Board of Equalization, where they have every assurance that redress will be obtained.

B. CAHOON, Chairman.

R. H. SAWIN.

On motion the report was placed on file.

On motion a number of complimentary tickets were ordered printed to send to the Farmers' Clubs and Agricultural Societies throughout the State, and to the ministers in this county.

Mr. Cahoon moved that a committee of two, consisting of Messrs Adams and Conant, be appointed to draw up the necessary papers to incorporate the Club.

San Jose Farmers' Club and Protective Association.

The club met at the usual time and place, President Casey in the chair.

The subject of "Fertilizing" was adopted for discussion at the next meeting of the Club.

Raising Children.

The President announced that fifteen minutes would be given to any member who wished to address the meeting on any subject. Mr. Burgland arose and consumed about half the time in placing before the meeting the necessity of good blood in their children. He said farmers would pay more attention to improving the stock of their horses and cattle than in improving the minds and bodies of their offspring. He said that the hoodlums were the mustangs and Spanish cattle of the human race. He wanted children taught to work, especially the girls; he wanted them able to help a poor man earn a living. He did not want too much book learning. He thought the woman of the Old Country infinitely superior to those of America; not because they were more intelligent or refined, but because they are healthier, more robust and able to do more work.

The question announced for discussion was "What kind of

Shade, Ornamental, and Forest Trees

Are best and most profitable for cultivation." Mr. Burgland said that that tree which would yield some kind of fruit and at the same time answer for the purpose of shade, was the best tree for farmers to cultivate. He cited the olive and the mulberry as affording good shade, while they also afforded large quantities of excellent fruit.

Mr. Casey said that only the black mulberry was good for fruit.

Mr. Burgland said the white mulberry bore excellent fruit also.

Mr. Hobson said trees should be planted where they were needed, but for shade he would not advise too many to be set out. He thought the honey locust and the olive best for both shade and fruit. For timber-trees he could recommend the Australian gum as a tree of rapid growth and solid wood.

Beautiful and Homelike.

Mr. Cadwell thought nothing so valuable or beautiful as trees. He would recommend fruit trees for shade and gum trees for wood.

Mr. Burgland thought trees should be planted to make it look homelike, if for nothing else.

Mr. Casey said that he had had very little experience in shade trees, but thought it best to combine fruit with shade. In his estimation the black mulberry is the best for this purpose. He had never seen the white mulberry used. The olive is of very slow growth. The Australian gum is the best for a timber tree. The butternut is a good tree but cannot stand a

dry climate. The hickory nut is of too slow a growth to be valuable.

The English walnut had done well with him, one tree, fourteen years old, had borne a half bushel per year for the last four years.

He favored planting pear and cherry trees along the road for shade.

Regard to Climate.

Mr. Ware thought farmers should consider the object to be attained, and select their trees accordingly; and should also take the locality into consideration. He was not in favor of putting the fruit tree where we need the forest tree. He thought to be successful we should select trees that flourish in dry climates similar to our own, and considered the timber that did well in a wet climate would be a failure here.

Mr. J. F. Holloway was in favor of having every road lined with trees but was not in favor of being taxed for it. He thought the

Black Mulberry

A very useful tree. It was useful for fruit, for ornament and for timber. The Black Locust was equally good for ornament and for timber, but of all trees he considered the Osage Orange the most valuable for timber. The wood even when taken green will never rot, and the strength of the timber is such that a fence post need not be larger than your arm. He had examined fences after standing fifty years. The wood is actually indestructible; it will out-last iron. A wagon made of

Osage Orange Timber

Will stand a century without ever being painted; all it will need is re-ironing as the iron wears out. He considers it also adapted to a dry climate and recommends it for cultivation.

Mr. Cary Pebles has been cultivating the Osage Orange ever since 1854, and has now more than six inches through, while some other trees planted at the same time are over two feet in diameter; besides the gophers work on them badly.

Mr. Burgland said they were not suitable for a hedge on account of spreading; unless there was a great deal of trimming done one could not cultivate anywhere near them.

Mesquite, Locust, Mulching.

L. H. Holloway thought the Mesquite of Arizona a very valuable tree for this country, the bean being good to feed to stock; it also keeps well. The tree is of no value for shade.

Mr. Ware is going to plant about a mile along the road with locusts. In this country the roots run so deep that there is no danger of being troubled by sprouting. His main reason for selecting the locust, is, that it is about the only good tree that the gophers do not destroy.

Mr. Chipman had tried irrigating some of his locust trees without mulching, and mulching others without irrigating, and he found the mulched trees did much the best. He mulched by pulling up the grass and weeds around the tree and piling them about the roots of the tree.

Mr. Cary Pebles and Mr. Jessy Hobson were elected delegates to attend the Convention to be held at Sacramento on the 23d inst., who, together with the three formerly elected, make five delegates in all.

AGRICULTURAL NOTES.

CALIFORNIA.

CONTRA COSTA.

Gazette, Sept. 14: GOES BETTER.—In our notice of Mr. Sanford's six-acre corn crop, last week, we stated the estimated yield at fully 50 bushels, or more, per acre, to be within bounds. But a closer estimate, since made by counting the ears in a measured length of several average rows, and calculating three ears to make a pint of shelled corn (and they will make more), it is pretty certain that the yield will not be less than 100 bushels per acre, with a strong probability that it may reach 120 bushels, if it does not exceed that measure.

COONS.—Mr. James T. Walker, whose vineyard in Pine Cañon has suffered largely from the depredations committed by coons, discovered a few days since that a family of these depredators were occupying the hollow of an oak tree, in a pasture a few rods from the vineyard, and on felling the tree, found that the family consisted of two parents and seven offsprings, two-thirds grown. It is not necessary to say that the further increase and growth of that family was effectually arrested.

AN ODD APPLE.—Mr. Barnes Holloway, in his fruit Collection at the Fair, has a variety of apple which is peculiar in having an almost blood-red flesh, and juice of the same tint. This apple is a seedling raised by Mr. Holloway, who has never before seen or heard of anything resembling it. The skin is smooth, of russet brown tint, the pulp openly granular, with a slightly acidulous sweet taste.

LOS ANGELES.

News, Sept. 7: A BOUNTIFUL HARVEST.—Never before has California been blessed with such a bountiful harvest as this year. From all parts of the State the various messengers of intelligence convey the same tidings of plenty, and yet with all this abundance, there are not wanting those who are selfish enough to organize "corners" by means of which they hope to control the exportation of this vast harvest. It is alleged that L. Freidlander, the great grain dealer of the Pacific Coast, took the precaution early in the season of chartering all vessels hither bound, capable of carrying grain, so that all of the crop that will be removed this year will necessarily pass through his hands. This monopoly of the carrying trade will compel

farmers in straightened circumstances to dispose of their crops at any sacrifice the monopolists choose to dictate, while those that can afford will hold on to their stock until a change for the better takes place in the home market. It will have an injurious effect upon the entire State. Business circles will feel it keenly, as at least one-half of the money that would have naturally flowed into the State, had the monopoly not been created, will be held back. The greatest sufferers, however, will be the poor farmers—those who had staked their all upon obtaining an abundant crop and a good price for it.

But, before the shipping season is over we may look for the breaking up of the "corner," and the liberation of the producers from the bonds with which they have been fettered by the monopolists. The Chicago monopolists failed in their attempt to control the out-going harvest, and in the reaction that occurred, suffered all the evils that would have befallen their intended victims. A similar fate is merited by the grain operators of this coast.

MERCED.

Snelling Argus, Sept. 14: STANISLAUS COUNTY AGRICULTURAL FAIR.—The annual fair of the Stanislaus County Agricultural Society for the present year is advertised to commence on the 8th and end on the 11th of October next, at Modesto, where that society is making preparations for a grand exposition, in which the people of Merced and other counties are invited to compete. The season having proved a very fruitful one in every section of the valley, the display of the products of the soil will no doubt be large and varied, and therefore of more than ordinary interest to visitors, especially those who have never before attended an agricultural fair in California. We hope to see Merced county well represented at the fair, and doubt not our products will compare favorably with any that are found on exhibition from other localities. We want to see there a stalk of cotton from each cotton field in Merced county, hops from the farm of Buckley Brothers, specimens of fruit from our most noted orchards, vineyards and gardens, and likewise all the other products of the farms. Let our products be exhibited and compared with the products of Stanislaus and other localities, and we doubt not our people will be encouraged to make still greater improvements upon their farms, and increased efforts to arrive at perfection in the growth of fruits and rare and valuable plants, and at the same time be infused with such a spirit of rivalry and competition as to induce them to organize an Agricultural Society in Merced county. Take your wives and children and go to the fair at Modesto on the 8th of October next, and stay until it closes, and we doubt not you will all be profited by what you there see and hear.

SACRAMENTO.

Folsom Telegraph, Sept. 14: A RIGHT PLAN.—S. M. Wilson, of the Alzora Vineyard, near Elk Grove in this county, is daily selling a ton and a half of table grapes at about six cents per pound. He has a location in San Francisco, where he in person sells, and has them sent from his vineyard, thus making all the profit himself. The grapes are conveyed by wagon to the railroad depot, and thence by rail one hundred and ten miles to their destination. The work of gathering and forwarding at and from the vineyard, is superintended by Mrs. Wilson, his wife, who, by the way, is possessed of much business energy, and with all a lady of intelligence and refinement. They are bound to succeed.

RAILROAD EXCURSION TICKETS.—Superintendent Johnson, of the S. V. R. R., gives notice that during the Fair excursion tickets will be sold at half rates on his railroad. Two trains will run each way every day. See time table.

This section of the country is remarkably free from sickness of any kind, our two doctors being literally out of business.

THE GRAPE CROP in the foothills is enormous. ALFALFA.—Large tracks of land on the bank of the Sacramento river, have been reclaimed this season and planted in Alfalfa, which is growing very finely. Tule lands are yearly becoming more valuable, and in addition to the above, the finest grapes, fruits and vegetables, are now raised on them.

SUTTER.

Banner, Sept. 14: FARMERS' CLUB.—Many of the clubs throughout the State propose sending delegates to the Convention which meets at Sacramento during the State Fair, for the purpose of organizing, if possible, a State Farmers' Club. We think this a good idea, and hope our club will be represented there. The wholesale system of swindling practiced upon the farmers of the interior by the Shylocks of San Francisco has been going on long enough, and it is high time something was done. Come one, come all.

SAN JOAQUIN.

Independent, Sept. 10: The San Joaquin Valley can now show as fine horses, cattle and sheep as can be found anywhere in the State, but such was not the case ten years ago. The exhibition of blooded stock at our fairs has awakened an interest, and our farmers have been led to see the necessity of improving the breeds of their farm animals. They now realize that it costs no more to raise a good animal than a poor one, and the consequence is that the value of the animals on the various farms is nearly double what it was ten years ago, when most farmers kept only inferior stock.

The methods of cultivating the soil and securing the crops have also been greatly im-

proved. The exhibition of agricultural implements which has always been an important feature of our fairs, has enabled our farmers to judge of the merits and to adopt those articles which can be used with profit. These exhibitions, however, have not outlived their usefulness, as there are still many subjects worthy of the careful study of the farmers of this State, and owing to the peculiarities of our soil and climate a successful cultivation of the soil requires a knowledge only to be obtained by practical experience.

Our farmers should endeavor to raise greater variety of crops, so as to render themselves less dependent upon others for prosperity, and these agricultural fairs are proper places for them to exhibit the result of their various experiments and to profit by each other's suggestions.

It is to be hoped that our agriculturists will continue to manifest an interest in these exhibitions, and that they may be made powerful auxiliaries in the rapid development of the agricultural resources of the district.

TULARE.

Della, Sept. 12: A lady friend informs us that, having a large surplus of canteloupes and muskmelons, she has in seasons past resorted to drying them for winter use, the family preferring them to dried peaches, pears, etc. They are eaten dry, or when soaked for making pies their peculiar flavor is brought out in all its original richness. The melons are taken when in full flavor, before too ripe, cleaned out inside, the rind shaved off, and the balance sliced up for hanging on poles to dry, like pumpkins.

YOLO.

Mail, Sept. 12: GRAIN MOVEMENTS AND PRICES.—Wheat is very firm in this market at \$1.40 to \$1.45, according to the quality. In San Francisco it sells at \$1.60 to \$1.62½ and in Liverpool it is worth 12s. 10d.

Messrs. Thomas and Hunt have forwarded by rail this week about 1,000 tons and have on hand, ready for shipment, 6,000 tons.

THE WEATHER.—A gentle but hot norther has prevailed here for the last four days, sending up the mercury as high as 90° in the shade.

YUBA.

Appeal, Sept. 13: THE FAIR.—The exhibition at the Pavilion was scarcely up to those of former years, and the stock show was comparatively meagre, but this was due to no lack of exertion on the part of the managers, but rather to a want of interest on the part of the people who should have been foremost in contributing to make the Fair attractive. The Association paid all of its expenses and also all its premiums, has extended its landed estate, erected new stables and fences, improved the track and made many valuable and permanent improvements. The Society is now out of debt, and is in excellent condition in every respect for a continuance of its work. The managers of the Fair are entitled to great credit and the thanks of this community for the pains they have taken to accomplish this gratifying result.

THE STATE TAX.—The total assessment of property in the State, as reported to the State Board of Equalization by the different County Auditors, is \$604,583,799. The State Board of Equalization are required to levy for State purposes for the 24th and 25th fiscal years, such an ad valorem rate of taxation upon each \$100 of taxable property of this State as will raise revenue for each of said years. First, for general fund, \$1,119,000; second, for school fund, \$249,000; third, for sinking and interest fund of 1857, \$140,000; fourth, for sinking and interest fund of 1860, \$9,000; fifth, for State Capital fund, \$200,000; sixth, for military fund, \$60,000; seventh, for soldiers' bounty interest and sinking fund, \$43,000; eighth, for soldiers' relief, interest and sinking fund, \$25,000; ninth, for Pacific Railroad fund, \$105,000; tenth, for State Normal School building fund, \$75,000; eleventh, for State Capitol bonds, interest and sinking fund, \$35,000. Total, \$2,122,000. Now to raise the required amount of \$2,122,000, say they levy a tax of 37 cents on each \$100 of the total assessment in the State. \$604,583,799 will raise a revenue of \$2,236,960.05, being \$114,960.05 more than is required by the State to meet its expenses. But as there will be more or less delinquent taxes in the State, the \$114,960.05 will fall short. We presume they will make the tax about 40 cents on each \$100 in order to leave a margin for delinquents. Last year the tax was 36 cents, making a difference of 46 cents, or less than one-half the tax of last year. So much for the State Board of Equalization.

OREGON.

Furmer, Sept. 7: GRAIN STANDING.—Mr. S. Robbins, of Bethel, Polk County, informs us that a great deal of grain is yet standing in that vicinity, and he thinks that at least one-half of the crop remains uncut. The present wet and showery weather of course retards the harvest; no grain is being cut, but the grain that has been stacked is now being threshed. Grain is yet standing to a great extent through the whole valley, and if the rains continue we may look for great damage to the fields yet uncut. It is urged as another argument against the headers that the risk of losing grain in this way is increased when the farmer allows his fields to stand ripe waiting for the header to come to his relief.

WILD FLAX.—Messrs. Wm. Taylor and D. R. S. Daly have left at the *Statesman* office specimens of wild flax about three feet tall, with heavy outside fibre, which looks as if it might be cultivated to good advantage.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING AUGUST 20TH, 1872.*

BUCKLE.—William C. Bussey, S. F., Cal. ELECTRO-GALVANIC QUICKSILVER AND AMALGAM SAVING APPARATUS.—Joseph Potts, Treasure Hill, Nevada.

WATER-ELEVATOR.—John A. Ball, Grass Valley, Cal.

WASHING-MACHINE.—Joseph C. Durbin and James Montgomery, Eureka, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

POPPY CULTURE.—We have received a letter from H. A., of Woodbridge, desiring further information on the culture of the poppy and gathering of opium. At present we can refer to no other authority than that of which he speaks, as contained in *Agricultural Report* for 1870, and *RURAL PRESS* of former dates; except what is contained in *Agricultural Report* for 1869, page 233.

We will give the matter further attention and report any additional information we may obtain.

Drying Flowers in Sand.

There are many of our brilliant-colored flowers, such as dahlias, pansies, pinks, geraniums, sweet-williams, carnations, gladioli, etc., which may be preserved so as to retain their color for years. White flowers will not answer well for this purpose, nor any very succulent plants, as hyacinths and cactuses.

Take half-shallow dishes, of sufficient depth to allow of covering the plants an inch deep with sand. Get the common white sand, such as is used for scouring purposes, cover the bottom of the dish itself with a layer of the sand about half an inch deep, and then lay in the flowers with their stems downward, holding them firmly in place while you sprinkle more sand over them, until all the interstices between the petals are completely filled, and the flowers buried out of sight. A broad dish will accommodate quite a number, allowing sufficient sand between.

Set the dish in a dry, warm place, where they will dry gradually, and at the end of a week pour off the sand and examine them. If there is any moisture in the sand, it must be dried out before using again, or fresh sand may be poured over them in the same manner as before. Some flowers require weeks to dry perfectly, while others will become sufficiently so to put away in a week or ten days.

By this simple process flowers, ferns, etc., are preserved in their proper shape, as well as their natural colors, which is far better than to press them in books. When arranged in groups, and mounted on a card or in little straw baskets, they may be placed in deep frames under glass.

TREES ALONG RAILROADS.—The *Prairie Farmer* says that S. T. Kelsey, of Pomona, Kansas, has a contract to plant trees, a quarter section every ten miles, with the Atchison, Topeka & Santa Fe Railroad, for 300 miles. He furnishes the trees and takes care of them for eight years, and has for compensation the whole section at each place, including the quarter section planted. The object of the railroad is to add to the value of its remaining land, to ascertain and show the time required to obtain a remunerative forest, the best methods of cultivating, and what trees will succeed best.

The United States Mining Laws.

The *Mining and Scientific Press* publishes in neat, convenient form, and on good paper, the "United States Mining Laws and Regulations Thereunder," from official copy. Of course, to all in any way interested in mining, it is a great convenience to be able to refer to these laws whenever the necessity presents itself. Sold at the office of the *Mining and Scientific Press* for twenty-five cents. —S. F. Daily Chronicle.

EVERY farmer in California should be a reader of the *PACIFIC RURAL PRESS*. It is an agricultural paper of great excellence. The subscription price is \$4 a year, but we have made arrangements with the publishers whereby we can furnish the *RURAL PRESS* and the *Flag* together for \$6 a year. —*Healthsburg Flag*.

American Manures, and Farmers' and Planters' Guide.—comprising a description of the elements and composition of plants and soils—the theory and practice of composting—the value of stable manure and waste products, etc., etc.; also chemical analysis of the principal manufactured fertilizers—their assumed and real value—and a full expose of the frauds practised upon purchasers. By Wm. H. Bruckner, Ph. D., and J. B. Chynoweth. Price \$2, post paid. Address DEWEY & CO., this office.

For the Sick Room.

Can anything be more refreshing or agreeable in the sick room than the aroma of freshly gathered flowers? In MURRAY & LANMAN'S FLORIDA WATER we have this fragrance pure and healthful, not contaminated with any addition, nor altered in any way whatever. 669

FARM HINTS.

Why and How Does Gypsum Benefit Crops?

It is a well known fact that Plaster of Paris, or gypsum, or land plaster, as it is variously denominated, acts upon certain species of vegetation with remarkable power. By sowing it upon the common red clover the yield of hay may be more than doubled. It has for years been an unsettled question in what manner it acts. W. T. Early, writing to the American Institute's Farmers' Club of New York city, combats a multitude of theories; after which he gives the one most commonly received by scientific men, as follows:

Plaster acts as a condenser of the ammonia of the atmosphere and of the soil. Plaster of Paris is composed of sulphuric acid and lime. A bushel of this substance, if it acted as a manure, would clearly exert but a very small effect upon an acre of land by its chemical action upon plants, or by entering into combination in the growth of crops. By observation, however, it is concluded that Plaster of Paris acts as a condenser of ammonia, which is found everywhere in the atmosphere and in all soils to a limited extent—that it holds this most subtle and powerful manure in its grasp, fixes it and gives it out to the growth of plants as they require it, instead of allowing the ammonia to pass away and remain unfixed and unadapted to plant growth. There are a few phenomena which seem to me to fully establish the fact that this is the true explanation of the action of plaster: That only a certain amount will act. Thus a bushel to the acre, sown upon a clover field, acts as well as fifty bushels—showing that it does not act as a manure, as a stimulant, or a gastric juice, or in any other manner analogous to any of these agencies. Sow a field with plaster in clover, or any other grass, leaving out a breadth, or in plastering a crop of tobacco—as I have frequently seen it done—leaving a few rows without the application, and the result will be that, while the parts of the crop to which the plaster is applied will be flourishing and green, those on which no plaster is put will be yellow and worthless, indeed greatly inferior to what they would have been had no plaster been placed in adjacent parts of the field. How can this be explained except upon the hypothesis that the plaster draws from the atmosphere? Again, sow upon a dunghill, steaming and giving off ammonia, a quantity of plaster; enough—it will stop the escape of the gas. Wait awhile, until the plaster sown becomes saturated with the gas, and it will again begin to escape. Put on plaster again, and it will stop; and so on until the ammonia is taken up and fixed.

Take Peruvian guano, whose great fertilizing property is ammonia, mix plaster with it in proper quantity, and it will become inodorous. And so of any other animal or vegetable manure which gives off ammonia.

Great losses are sustained in stables, in cesspools, in all animal and vegetable manures by the escape of ammonia, which constitutes by far the richest part of all manures. Plaster of Paris may be most profitably employed in fixing this volatile and most valuable ingredient, to the great profit of the farmer and the public.

Experiment in Wheat Culture.

The result of an experiment made during the past season, by R. A. Gilpin, at his farm in Westown, on the wide planting and cultivation of wheat, appears to be quite remarkable. In giving an account of the experiment, Mr. Gilpin says: The ground measured an acre within a fraction; it was not selected on account of any inferiority, but was much the same as the rest of the field, and was manured and prepared just the same. The seed was the red Mediterranean, and not very good, being taken from the wheat grown on the place the previous season, which was injured by the weevil. It was drilled in at the rate of $\frac{3}{4}$ of a bushel to the acre, on the 25th of September, at the same time as the rest of the field. The peculiarity in the treatment, was that every other pipe of the drill was stopped, so that the rows of wheat were twenty inches apart or double the usual distance. In the spring, when the ground had become sufficiently dry to work, a small garden hoe harrow was run between the rows, working the ground to the depth of about three inches; this was done only once. The effect of this work was very apparent; the wheat took a rapid start and outgrew the rest of the field. As the season advanced it grew tall and strong, and no amount of wind or rain had any effect to lay it down; when the heads formed, their greater strength was apparent. It was backward in ripening, and the rest of the field was cut and hauled in a week before this was ready.

Now for the result: the experimental wheat yielded twenty-three bushels to the acre, and the rest yielded only nine bushels to the acre; the quality of each was about the same. Whether from defect in the seed, or the wet season, or the late planting, the whole of my wheat was injured both by rust and weevil, and the experimental part did not escape; it was affected just as the rest was.

This experiment can not be regarded as en-

tirely satisfactory; the season was exceptional, the seed used was inferior, and the yield of the experimental part of the field was not absolutely great, but only by comparison with the rest of the crop, which was a poor one, from the effects of the rust of the weevil; but the result is, under any circumstance, sufficiently reasonable to attract the attention of farmers and induce a further trial.—*American Farm Journal*.

Gale's Patent Nut Roaster.

We herewith present an illustration of a new invention designed more particularly for roasting peanuts; but which is equally well adapted to roasting chestnuts, coffee or popping corn. The main new feature of the machine consists in its roasting cylinder being made to revolve by spring or weight power regulated by pendulum, securing a regular and constant motion to the cylinder, which insures a perfect and even roasting of every charge, whether the attention of the operator is constant or not.

This enables the vendor to devote nearly his whole time to the making up of packages of his roasted nuts with no danger of burning, so frequently occurring when the cylinder is turned by hand. The heat is supplied by a flame, the product of naphtha or gasoline from an elevated reservoir, the supply from which can be regulated or entirely cut off at pleasure.

There is also a disposal of the waste heat, by which the roasted nuts are kept hot in bulk,



after being emptied from the cylinder. One of these machines is now in operation in Oakland and the owner is clearing as high as ten dollars a day by its use, and the sale of peanuts roasted by this new patent process.

W. J. Egbert has secured the right for the Pacific Coast, and his agents are Wiester & Co., 17 New Montgomery St., San Francisco.

Good Tillage Better than too Much Land.

We once read a story of a gentleman whose wealth consisted in the ownership of one thousand acres of land, and he was the father of three daughters. One of his daughters married, and he gave her 250 acres, and continued the cultivation of the 750, and made as much as when he cultivated the one thousand. Another daughter married, and he gave her 250 acres, and afterwards made as much from the remaining 500 acres as he had formerly made from the one thousand; and the other daughter married, and he gave her 250 acres, and applied all his force and knowledge to the 250 acres left him, and the results were as great and as satisfactory as when he cultivated the one thousand. By the division of his farm four families were provided with homes and the means of independent sustenance, nor were his profits made to suffer or diminish. The moral of the above is to attempt the cultivation of no more land than you can cultivate well, and by your thirst crowd out worthy men, by placing out of their reach homes for themselves and families. It would be far better for our country if every tiller of the soil was the owner of 100 acres, which he could beautify and make productive. Attachments would be firmer and tastes created that would be of incalculable benefit to the country. Small farms, well cultivated, is the great desideratum for the American farmer.—*Tennessee Agriculturist*.

Carbolic Acid on the Farm.

Joseph Harris says, in the *American Agriculturist*, that he prizes carbolic acid as the cheapest and most effective preventative of foot-rot. He has no foot-rot among his sheep and no symptoms of it, but he washes the feet of every sheep and lamb two or three times a year with this acid simply as a preventative. Sheep are frequently driven along our roads that have foot-rot, and the most careful farmer may get the disease into his flock. Where sheep are sent to a common resort for washing, Mr. H. would wash their feet with carbolic acid before they were sent, and again at shearing time. With a small brush the acid is quickly applied. He finds other uses for the same article:

"I bought a barrel of crude carbolic acid for \$15, and used it very freely as a disinfectant. A quart of carbolic acid and a gallon of petroleum is a capital thing to use as a paint or wash for all the woodwork about the pig-pens, hen-houses, etc. It is death to every species of vermin, except rats and mice, and I imagine they do not love it. Last Spring I washed the trunks and large branches of my apple, pear and cherry trees with a mixture of soap, carbolic acid and lye from wood-ashes. It killed every bit of moss, and has greatly improved the appearance of the trees. I smear the roosts in the hen-house with this, and am not troubled with lice. It is a capital thing to wash pigs with. And for a dip for sheep there is nothing equal to it. It kills every tick, and if used strong enough and often enough, it is said to be a certain cure for the scab—and I think there can be no sort of doubt about it. It is the most penetrating substance I know anything about. I have used the crude acid alone

Castor Beans.

A correspondent at San Bernardino writes: Inclosed I send you two kinds of castor beans which I have grown this year, I think the small bean is called the Illinois bean, and if so, it has been highly spoken of in some of the agricultural newspapers. My object is to find out the kind of bean most highly prized by the producers of the oil. A note to that effect in your replies to correspondents will exceedingly oblige Yours truly, J. B.

San Bernardino, Sept. 7th, 1872.

There are several varieties of castor beans in cultivation chiefly as ornamental plants. Some of these have very large seeds; but for medicinal oil the small seeded varieties are considered the best.

For lubricating machinery, for burning, for veterinary practice, and other purposes where coarser oils will answer, the large seeded varieties are the most profitable.

A gentleman in Texas writes that the greatest loss attending the early cultivation of the bean in that State, arose from having planted the small bean of Missouri and Illinois, instead of the large seed appropriate to Texas and Florida; and from planting too thickly; but does not give the proper distance to plant.

For the finer qualities of oil therefore, the small beans sent us are to be preferred; they are the true—so-called—Illinois bean. Perhaps the larger beans, from all the information we can obtain, will yield a larger quantity of oil per acre and may prove more profitable.

About Patent Roofing.

EDITORS PRESS:—Can you inform me if there are any patent roofing in San Francisco. I have seen no advertisements of any in the Press, but there are so many in the East that I should suppose that there might be some here. The roof to my house leaks badly in rainy weather, although I had it carefully reshingled last winter, laying the shingles four inches to the weather. As I wish to have a tight roof over my head this winter, I would be much obliged if you could give me any information that would help me on the subject. W. L. W.

Napa City, Sept. 10, 1872.

There are some kinds of roofing used in San Francisco which are patented; but we know of none but what would require a practical workman to apply it, and so not applicable to country use. If Eastern manufacturers knew the advantages of advertising in the *SCIENTIFIC* and *RURAL PRESS*, and thus introduce some of their best and latest styles of roofing on this coast, it might awaken our local dealers, if we have any in this line, to a sense of the importance of letting the world know something of their goods and manufactures. We doubt if there is any asphalt or patent roofing equal to shingles for country use, if the roof is sufficiently steep.

Carrots for Horses.

Practical experience has demonstrated beyond a doubt that horses are benefited by liberal root feeding. The action of this kind of diet upon the animal is to keep his digestive organs in a healthy condition. There are those who do not hesitate to assert that a bushel of carrots is equal to two bushels of oats for a horse. Now, while my own experience has fully satisfied me of the great value of carrots for horse food, and especially for the patient livery-stable horses, that are kept on dry food the whole year round, I am not prepared to place quite so high an estimate upon their value as that. That they do possess extraordinary medicinal qualities, none who have tried them will deny. An experience of not a few years has satisfied me that carrots fed to horses during the winter, and especially after the first of January, have a most beneficial effect upon them. They act, not fed in excessive quantities, as a mild aperient, and appear to have the desirable effect of admirably fitting the animals for the hard work of the spring. I am now speaking of my farm horses.

For livery-stable keepers they would it appears to me, possess a double value. Horses kept the year round in large cities, and especially livery-stable horses, rarely get a mouthful of green food. Dry hay and grain, without either grass or roots, is their daily and yearly food. I can very well imagine how grateful to the poor beasts an occasional feed of roots must be, and how strongly humanity appeals for them. As carrots can be grown as cheaply as corn, and five times as many bushels to the acre, I cannot conceive of any good reason why they should not form a part of livery-stable provender.—*Cor. Journal of the Farm*.

Every opportunity and spare moment should be availed of to gather materials for making manure. These are found in every direction around and about the farm, and need only to be gathered and formed into compost heaps to become sources of profit, whilst many things, now nothing but nuisances, can be made to yield that which is "as good as gold."

Concrete Building.

EDITORS PRESS.—Noticing in your paper (of which I am a subscriber, and an interested reader) your many answers to questions, asked you by your correspondents, it occurred to me that perhaps you would be able and willing to answer one or two from me, on building concrete houses.

First, what proportions of sand, gravel and cement to use? Whether Hydraulic cement? How thick ten feet high walls ought to be? Whether broken bricks would do in place of gravel? The cheapest and quickest way to build? The best way to build and how to build?

I should like to have the concrete hardened at once, so that only one short box would be required to build with. By answering you will much oblige T. B.

Lakeport, Lake Co., Sept. 11.

Will some one of our readers who has had experience in building with concrete, favor us and our correspondent with answers to his questions.

PATENTS IN GERMANY.—It is the general custom of American inventors to secure patents in their own country first, and to look to foreign countries some time later, when they see whether their inventions have met with success. It is then frequently too late to obtain patents in most foreign countries, particularly in Prussia. After the description is printed in the publications of any Patent Office, or laid before the public in a newspaper, a patent will not be granted. As no tax exists in Prussia, patents are not costly, and no inventor should neglect to secure his invention by letters patent in that country, which contains such an immense population.

USEFUL INFORMATION.

New Process for the Preservation of Alimentary Substances.

In a communication recently made to the French Academy, M. Sacc described his process and submitted specimens of meat and vegetables so prepared. The food to be preserved is placed in a barrel, with layers of powdered acetate of soda, in the proportion of one-fourth by weight. In winter, the temperature must be raised to 20° C. After twenty-four hours, the barrels must be turned, and after forty-eight hours the process is complete, the salt having absorbed the water of the meat, which may then be headed up in the pickle, or dried in the air.

If the barrels are not full, they are to be filled up with brine of one part acetate of soda in three parts water. The pickle is evaporated down to half its bulk, crystallizing and regenerating for use one half the salt employed.

The mother liquors form an excellent extract of meat, representing three per cent. of the total weight, and must be preserved and poured over the preserved meat when prepared, so as to restore the original flavor of the fresh meat, of which it is otherwise bereft by the retention of the potassic salts in the pickle.

For cooking, the preserved meat must be steeped for from twelve to twenty-four hours, according to size, in tepid water containing ten grammes of sal ammoniac per liter. This salt decomposes the acetate of soda contained in the meat, forming salt, and also ammoniacal acetate, which causes the meat to swell, and restores to it the odor and acid reactions of fresh meat.

The bones also yield an excellent and tasty soup. By adopting the precaution of simply removing the intestines, animals, etc., may thus be preserved whole. Fish, poultry, and game have been so treated, with excellent results. Meat may be dried in a stove, losing one quarter in weight thereby, in addition to one quarter lost in pickling; but, in general, fish cannot be dried at all.

Vegetables are similarly prepared, losing generally five-sixths of their weight; before salting, they should be heated until they lose their rigidity. In twenty-four hours they may be pressed and dried in the air. For use they must be steeped for twelve hours in fresh water, and then boiled as if fresh. Potatoes must be steamed before salting.

Finally, all food thus prepared must be kept perfectly dry, as the salt absorbs moisture from the air.

New Commercial Product—"Ceresine."

Ceresine is a new product destined to play an important part as a lighting material. It is obtained from ozokerit or fossil wax by the following process: Ozokerit is heated up to a temperature ranging from 250° to 300° Cent. in order to separate, by volatilization and subsequent condensation, the liquid oils. The mass being cooled down to 60°, it is heated with from 10 to 20 per cent. of the sulphuric acid of Nordhausen. The temperature is then raised to 100°, and care is taken to maintain this heat until the precipitation of the carbon takes place and forms a viscous residue, which is carefully separated from the supernatant oils, heated, and then treated with about ten per cent. of diluted sulphuric acid, afterwards neutralized by aid of an alkali. The mass is then heated to about 180°, poured upon plates and pressed through linen cloths in order to separate the greasy matters; this residue of wax can then be melted and filtered. The product is ceresine, which is employed in the manufacture of candles.

THE PHILOSOPHY OF TANNING.—Everybody knows, we presume, that leather is made by steeping hides in an infusion of certain vegetable substances which contain a compound called *tannin*. The cheapest source of this tanning principle is oak bark, but it is found in greater or less quantity in many other plants, as in the grape, the hop, coffee, tea, etc., and from these it can be dissolved out with water. The skins of animals consist mainly of albumen and gelatine; indeed these substances are abundant in all animal matter. In the blood and in milk the albumen is merely suspended, as it were, in the water which constitutes by far the larger portion of these fluids. Tannin and albumen have a remarkable affinity for each other, and unite as soon as they are brought in contact. The result of their union is the insoluble, tough material which gives leather its distinctive character. When the hide is steeped in the infusion of oak bark, the albumen of the former thus combines with the tannin of the latter, and the loose, soft tissue of the skin is converted into hard, tough leather.

CHEMICAL PLANTS.—The *Druggist Circular*, gives the following receipt for making chemical plants: Take a glass tumbler, fill it with white or better, pure yellow sand to the height of two inches, and pour on a mixture of equal parts of silicate of potash (water-glass) and distilled water. Then drop in small lumps of different metallic salts, as sulphate of copper, sulphate of iron, sulphate of zinc, bichromate of potassa, and so on, being careful that no two pieces are touching. In a few hours there will grow up stems and hair-like threads, filling the whole tumbler as far as the mixture goes.

To Temporarily Repair Broken Axletrees.

Whenever an axletree of a carriage or lumber-wagon breaks down, it usually occurs at a long distance from a shop where it can be repaired. By the exercise of a little mechanical skill at such a time, a teamster can make a temporary repair sufficient to enable him to reach home, or the place of destination, with but little delay. We will suppose, for example, that one axle-arm is broken entirely off. Remove the load; block up the axletree an inch or two higher at the broken end than at the other; then procure a piece of tough rail or scantling, or a piece of a small tree, about four feet long; dress off one end, tapering with an ax, for an axle-arm, so that it will fit the hole in the hub, and lash the piece to the broken axletree with pieces of rope or wire. The rough piece may be fitted to one side or beneath the axletree. After the rope has been drawn up as tightly as practicable, let two or three thin wedges be driven under the rope; after which wet it thoroughly, and the rope by contracting will hold the temporary axle-arm with sufficient firmness to enable the teamster to proceed with his load. In case no bit is at hand to bore a hole for a linchpin, cut a groove around the axle-arm near the extremity, and wind pieces of rope or twine around the arm until a ridge is formed of sufficient size to hold the wheel from running off. Should the axletree give way near the middle, rather than at one of the arms, fit a piece of scantling or stout rail beneath it, letting the piece extend from wheel to wheel, and lash the ends to the axletree near the wheels. In case it were necessary to ride several miles to obtain pieces of rope and an ax before one could make the necessary repairs, it might be far more satisfactory to do so than to procure another vehicle, transfer the load, and afterwards return for the broken one. In case a wheel were to break down, a man who is half a mechanic could easily fix a piece of plank beneath the hub, which would slide on the ground, like a runner, for several miles.

THE GAS JET FOR REMOVING OLD PAINT.—In buildings which are lighted with gas, nothing can be more economical, speedy, and free from deleterious effects for this purpose than a gas jet. All that is required is a few yards of rubber tubing, arranged to suit one of the gas pendants. The tube can be held in the left hand, and the knife or chisel in the right. The jet or flame is then made to strike the surface, and, when the paint is warmed through, the knife is used quickly in removing it. The gas jet does not give out a great amount of heat, and therefore does not injure the joints of the body, or draw out the oil from the wood to an extent that delays the after painting. In removing paint, the heat should never be so intense as to quickly raise it up into blisters; it is only necessary to warm it through.

THE ENGLISH POSTAL TELEGRAPH SYSTEM seems to be working better and better, as the people and officials become better acquainted and more accustomed to it. All the telegraphs there are now owned by the Government, and short messages may be sent to any part of the kingdom for twenty-five cents. The government issues what is called postal telegraph cards, bearing a twenty-five cent postal stamp. On this card you write your telegraph message, and drop it in the lamp-post letter-box. The letter-carrier delivers it to the telegraph department, and the message is promptly forwarded to its destination. The English government has been petitioned to purchase all the submarine telegraph cables leading from England.

WHEN TO SELL GRAIN.—A series of experiments, instituted to set the average loss in weight by drying, show that corn loses one-fifth, and wheat one-fourteenth by the process. From this the statement is made that farmers will make more by selling unshelled corn in the fall at seventy-five cents than the following summer at one dollar a bushel; and that wheat at 1.33 in December is equal to 1.51 for the same wheat in the June following.—The estimate is made on the basis of interest at seven per cent.; and takes no account of loss from the depredations of vermin. These facts are worthy of consideration.

FRICTION.—Dr. Kane made the discovery in the Arctic regions that it was as hard to draw a sled upon snow when the thermometer was thirty to sixty degrees below zero as upon sand. The same thing was long before known to teamsters in the Northern states, who often remark that their loads draw hard when the weather is so cold that the runners "creak" or "growl" in passing over the snow.

TEA GROWING IN INDIA.—The experiment of growing tea in India is proving quite successful. In 1862 the crop was estimated at 1,000,000 pounds; in 1871, at something over 20,000,000. It is claimed that India can now compete with China in producing teas of the best quality.

HOW TO STOP A PINHOLE IN A LEAD PIPE. Take a ten-penny nail, place the square end upon the hole, and hit it two or three light blows with a hammer, and the orifice is closed as tight as though you had employed a plumber to do it at a cost of a dollar or more.

SCIENCE AND ART.—Science teaches us to know; Art, to do. In Art, truth is a means, in Science, it is the end.

GOOD HEALTH.

Duties of an Apothecary in the Olden Times.

Dr. D. Campbell Black, in an address on the relations of prescriber to dispenser, before the Glasgow Chemists' Association, quoted from an old work the following quaint rules for an apothecary's life and conduct:

1. Must fyrst serve God, forsee the end, be clemly, pity the end.
2. Must not be suborned for money to hurt mankynde.
3. His place of dwelling and shop to be clemly, to please the senses withal.
4. His garden must be at hand, with plenty of herbs, seeds, and rootes.
5. To sow, set, plant, gather, preserve, and keep them in due tyme.
6. To read Dioscorides to know ye nature of plants and herbes.
7. To invent medicines, to choose by color, taste, odor, figure, etc.
8. To have his mortars, stilles, pottes, filters, glasses, boxes, cleane and sweete.
9. To have charcoal at hand to make decoctions, syrups, etc.
10. To keep his cleane ware close and cast away the baggage.
11. To have two places in his shop, one most cleane for the phisic, and a barer place for the chirurgic stuff.
12. That he neither increase or diminish the physician's file (i. e., prescription) and keep it for his own discharge.
13. That he neither buy nor sell rotten drugges.
14. That he peruse often his waares that they corrupt not.
15. That he put not in quid pro quo (i. e., use one ingredient in place of another when dispensing a physicians prescription) without advisment.
16. That he may open well a vein for to help pleurisy.
17. That he meddle not in his vocation.
18. That he delight to reade Nicholaus Myrepsus, Valerius Cordus, etc.
19. That he do remember his office is only to be physician's cooke.
20. That he use true weight and measure.
21. To remember his end and the judgment of God; and thus do I commend him to God, if he be not covetous and crafty, setting his own lucre before other men's help, succour, comfort, etc.

DEATH BY THE NERVES.—When a man is wounded in battle, even slightly, he is likely to be knocked prostrate, which is in fact often the first intimation that he gets that something has happened. It is not the force of the blow nor the wound that brings him to the ground, for he may presently get up and walk away, or fight again, if he is very determined; but it is the shock upon the nervous system. A similar shock may come through the mind, through any accident, just as would be the case through a stroke of lightning. Sometimes it may be so violent that death will overtake the victim beyond recall by any reaction, while there is no sufficient injury to the tissues or organs, or loss of blood to cause a fatal result. A sudden death occurred recently in a prominent family, in this city, where the young man had no disease of any tissue that could cause alarm, and no one could have predicted the result. Nothing could be said of it, but that some violent shock fell upon an enfeebled nervous system and took life away before the trouble, whatever it was, could pronounce itself by disorganizing any part of the body. Civilization and its intense activities being a great strain on the nervous powers; physicians have to bear this in mind and direct their counsels accordingly.

A great desideratum is to discover some remedy which will act promptly as a counter shock. In cases of a certain kind, as in lightning-strokes, dashes of cold water, suddenly given by the painful, sometimes avail. Perhaps when the nervous force is better understood it may come within a control as decisive as that over galvanic currents in a cable, which are charged and discharged at will. Meanwhile there should be sufficient knowledge disseminated among the people to enable them to exercise caution in avoiding whatever is destructive of nervous vitality.—*Iowa School Jour.*

DENTISTRY IN THE ANCIENT DAYS.—According to Dr. Reid, the ancients were proficient in the dental art. Cassellius was a dentist in the reign of the Roman triumvirs, and gold was used for the filling. As early as 500 B. C., gold was thus used, and gold wire was employed to hold artificial teeth in position; and it does not seem then to have been a new art. A fragment of the tenth of the Roman tables, 450 B. C., has reference to the burial of any gold with the dead except that bound around the teeth.

Herodotus declares that the Egyptians had a knowledge of the diseases of the teeth and their treatment, 2,000 years before Christ. In Martial, Cassellius is mentioned as either filling or extracting teeth; but he specified that he could not polish false teeth with tooth-powder. Lucius mentions an old maid that had but four teeth, and that they were fastened in with gold. These facts cover a period of 600 years:

Mysterious Influences.

Persons sometimes feel remarkably well—the appetite is vigorous, eating is a joy, digestion vigorous, sleep sound, with an alacrity of body and an exhilaration of spirits which altogether throw a charm over life that makes us pleased with everybody and everything. Next week, to-morrow, in an hour, a marvellous change comes over the spirit of the dream; the sunshine has gone, clouds portend, darkness covers the face of the great deep, and the whole man, body and soul, wilts away like a flower without water in mid-summer.

When the weather is cool and clear and bracing, the atmosphere is full of electricity; when it is sultry and moist and without sunshine, it holds but a small amount of electricity, comparatively speaking, and we have to give up what little we have, moisture being a good conductor; thus, in giving up, instead of receiving more, as we would from the cool, pure air, the change is too great, and the whole man languishes. Many become uneasy under these circumstances; "they can't account for it;" they imagine that evil is impending and resort at once to tonics and stimulants. The tonics only increase the appetite, without imparting any additional power to work up the additional food, thus giving the system more work to do, instead of less. Stimulants seem to give more strength; they wake up the circulation, but it is only temporarily, and unless a new supply is soon taken, the system runs further down than it would have done without the stimulant; hence it is in a worse condition than if none had been taken. The better course would be to rest, taking nothing but cooling fruits and berries and melons, and some acid drink when thirsty, adding, if desired, some cold bread and butter; the very next morning will bring a welcome change.—*Hall's Journal of Health.*

HOW TO GROW PLUMP.—Dio Lewis gives the following advice. Go to bed at half-past eight or nine o'clock, and don't be in a hurry about getting up in the morning. On going to bed and on getting up in the morning, drink as much cold water as you can swallow. Soon you will learn to drink two tumblers; and some persons may learn to drink still more. Drink all that your stomach will bear. Spend a good deal of your time in the open air without hard exercise, but exposed to the sun. If practicable, ride in a carriage some hours every day. Remain out enough to give you a good appetite, but do not work hard enough to produce excessive perspiration. Eat a great deal of oat meal porridge, cracked wheat, Graham mush, baked sweet apples, roasted and broiled beef, though the vegetable part is more fattening than the animal part. Lie down an hour in the middle of the day, just before you take your dinner, to rest, and if possible, take a little nap. Cultivate jolly people. "Laugh and grow fat" rests upon a sound physiological basis. A pleasant flow of the social spirit is a great promoter of digestion. Keep your skin clean, sleep in a room where the sun shines, keep everything sweet and clean and fresh about your bed, sleep nine, if possible ten hours in the twenty-four, eat as I have told you, cultivate the jolly spirit, and in six months you will be as plump as you could wish.

CELERY AS A NERVINE.—A correspondent of the *Practical Farmer* says: "I have known as many men, and women, too, who, from various causes, had become so much affected with nervousness that when they stretched out their hands they shook like aspen leaves on windy days; and by a daily moderate use of the blanched foot-stalks of the celery leaves as a salad they became as strong and steady in limbs as other people. I have known others so very nervous that the least annoyance put them in a state of agitation, and they were in almost constant perplexity and fear, who were effectually cured by a daily moderate use of blanched celery as a salad at meal times. I have known others cured by using celery for palpitation of the heart."

THICKENED MILK.—There is no better dish when diarrhea is common among old folks and children than good thickened milk. This is the way to make it the very nicest way.

Take a half gallon of morning's milk, not skimmed, and put on to boil, stirring occasionally. Break a fresh egg into flour well salted, stir it and rub it between the hands until all the flour that can has been worked into it, then just as the milk reaches the boiling point scatter it in; stirring all the time—one minute will have cooked all the lumps, pour into a tureen and then add a good lump of butter. This is a good and safe food at this time of the year and all the grandpas like it. Always let there be a half cupful of water in the kettle before the milk is put in, that will prevent it from burning.

COLORS SPECTACLES.—Dr. Stearns writes: "The photographer uses orange-colored glass to exclude the actinic rays of light, and why some optician has not had the genius to see that orange is the proper color for spectacles, instead of green or blue, for persons with weak eyes is beyond my comprehension. A room in the hospital with which I am connected is lighted through orange-colored windows, and is used by patients who have certain diseases of the eyes requiring the exclusion of the actinic rays of light. It has been very satisfactory. Orange is also, I believe, the proper color for bottles containing chemicals affected by light."



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SAN FRANCISCO:

Saturday, Sept. 21, 1872.

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"Scattering Seeds!"

We herewith offer, till further notice, to send the PACIFIC RURAL PRESS FREE for the term of THREE MONTHS (12 Nos.) to any one address which any new yearly subscriber may designate. Every old subscriber, upon renewing his subscriptions may send us the name of any neighbor or friend in any part of the U. S. who does not already receive the PRESS—and a copy of the paper shall be sent for ONE MONTH free. Making the paper, in this manner, known to those likely to subscribe, we believe will more rapidly extend our list. We know there are thousands who would subscribe at once if fully acquainted with the benefits to be derived from our columns.

At the State Fair.

Subscribers from every part of the Coast can pay their subscriptions to the RURAL PRESS at our stand in the Pavilion at Sacramento, during the Fair.

NEW SOAP DISH.—John Marquis, of this city, has invented a triangular soap dish, which is cast in one piece of zinc, in such form as to fit into the corner of a sink. It makes a cheap and very convenient receptacle for this household article, for which it is well to have a handy place.

We would refer our poultry growers to an excellent article this week on the destruction of parasitic insects. It is worth a year's subscription to the RURAL to every poultry breeder in the State having access to the lime waste of a gas factory.

Why Take the Rural Press?

Because if you are a farmer it is the best investment you can make for the money; and unless you have already all the money you want you can hardly do without it. A man to excel in farming or make much money at it now-a-days, must take advantage of every improvement in the way of agricultural implements and in the culture and harvesting of his crops and general management of his farm.

Farmers cannot keep up with these improvements and their immediate and profitable application, without taking one or more good agricultural papers. In the RURAL are discussed the questions particularly pertaining to agricultural practices applicable to our Pacific coast climates and soils.

Many of these practices are the result of costly experiments and requiring years for their accomplishment, which the farmer must try over again, unless he avails himself of the experiments of others as reported through the columns of the PRESS.

Farmers' Clubs.

Farmers, professors and scientific men are disseminating information by the discussion of subjects that more immediately concern the agricultural interests of the State, through Farmers' Clubs.

If it is interesting and profitable for the farmer to hear the discussions of his own club, it doubtless would be if he could also hear the opinions of members of other clubs. By taking the RURAL you can get them from every Farmers' Club in the State, of which we are able to get a report; which is nearly equal to being a member of them all.

Cotton, Ramie, Mohair, Silk.

If there are new seeds or products introduced from any part of the world worthy of a trial in our soils, the RURAL tells you where they are from, their qualities and value in the countries from whence introduced; mode of culture, cost of seeds or plants and where they can be procured.

It reports the success attending the culture of these products as early as possible, and if failure results and no remedy can be devised or improvement in culture made, we give the signal at the earliest moment that others may profit by a careful review of the subject and probable cause of failure, before going further in the direction of costly experiment with the new product.

The progressive farmer cannot afford to wait and make every needless experiment under his own eye, while others as intelligent as himself can give him the result of their experience equally clear and satisfactory as though made by himself. But to learn these results he must keep himself posted as to what is going on, and he can do this in no other way so cheaply and effectually, as by taking the RURAL PRESS, the recognized exponent of agricultural progress of the Pacific Coast.

Wool Values East.

We clip the following from Walter Brown & Son's Monthly Wool Circular, of date, September 2d.: There has been no material change in the position of the wool market since the 1st of August. The general tone has been that of steady dullness, relieved occasionally by some extra movement in one or other of the descriptions of foreign wools, either as immediate supplies or because of the cheapness of the article.

Domestic wools have been virtually passed over by manufacturers, foreign wools being more generally used than ever before in this country; and now that there is a margin for export from this market to England, it is quite probable that, not only will any further decline be checked, but the chances rendered favorable for an advance, sufficient at least to equalize prices.

The domestic clip comes forward quite slowly, and offerings are yet only moderate, but are ample to meet the prevailing demand. Prices are now more settled, but are, of course, unsatisfactory to the shippers, and buyers show no anxiety to purchase beyond what their actual needs require; hence the comparative retail character of business in this department.

The apathy which has existed so long throughout the woolen goods trade, still holds on, perhaps, however, with fewer indications present of being a permanent feature much longer; but until manufacturers receive evidence of a marked improvement in the sale of their goods, no argument, however potent, seemingly, will move them from the apparent determination to reduce their productions and to purchase raw material only as their real wants demand.

California Wools.

There has been more doing in these wools at about previous rates. The stock is large.

Spring clip, fine.....40 @ 45
Spring clip, medium.....42 @ 46
Spring clip, low grade and burry.....33 @ 38
Fall clip, A, 1.....27 @ 33
Fall clip, low grades and burry.....23 @ 26

Our Grazing Lands.

In resuming the subject from our last week's issue we assert, that to us it seems evident that an entirely new and different system, as relates to stock feeding upon our grazing lands, must be adopted.

Our hills and mountains that were but a few years ago annually clothed with a heavy burden of rich, nutritious wild grasses and wild oats, are rapidly becoming almost barren of their products by being so continually depastured as to wholly prevent their necessary seeding.

Effects of Mowing and Feeding.

When the wild oat is cut for hay before maturing its seed, such is the recuperative power of this plant, aided by climate, it will grow a second crop from the same root in many instances, and though not as heavy as the first, sufficiently matures its seed to furnish the most abundant seeding for a succeeding crop the following year.

But if this second growth is fed off by stock, preventing its seeding, as is often done, the land produces in a short time but little else than "turpentine weed," or other useless product.

Wild and Cultivated Grasses.

The open and unplowed lands with their annual grasses all gone to rest, having ceased their growth in June, and perhaps grazed to the very surface, present but a poor food prospect till the next winter rains shall bring a new crop into life from a scanty seeding.

What then is to be the substitute for these rapidly disappearing annuals? Few countries ever obtain better "natural pasture" grasses than those that are found indigenous to their soils, where such grasses are perennial or not dependent on annual seeding for their continuance.

But of cultivated grasses and clovers, to be often renewed by seeding in the course of a regular rotation of farm crops, quite a number have proved of immense value to the agriculture of many countries, that did not originally produce them; and California will prove no exception to the rule.

We Must Experiment.

We must introduce and put to the test various grasses, alfalfa and other clovers that have proven of value in other countries; we must carefully watch their development and their adaptability to the peculiarities and vicissitudes of climates, and the effects of soils, elevations and exposures.

We must try planting or sowing corn broadcast, sorghum and the malva, and to some extent beets and other root crops as feed for stock. A vast number of experiments, and many of them perhaps unsuccessful, will needs be tried before results entirely satisfactory will be obtained. Let those who can afford it, try them and publish the result for the general good; and let those who cannot afford to experiment, subscribe for the RURAL PRESS, and thus secure the benefit resulting from the experience of others.

The State Fair.

The State Agricultural Fair begins this year on the 19th of September, and runs to the 28th. On the 28th there will be a match trotting race between the celebrated Eastern mares Goldsmith Maid and Lucy, which is likely to call together as large an attendance as any other day's proceedings. The average attendance promises to be greater by thousands than at any preceding agricultural exhibition in this State. Every circumstance favors it. There has been an abundant harvest in California and peculiarly prosperous times in all the neighboring States and Territories. Since last year the various railway lines have been extended so as to afford traveling and transportation facilities for stock and material to be exhibited to new, large and rich regions heretofore not represented at all, or but meagerly represented, at our annual fairs. We hear of crowds preparing to spend the fair season here; from the extreme northern and southern parts of the State; from the mining districts of Central and Eastern Nevada; from Utah and Salt Lake City; and there will be quite a sprinkling of visitors from the States east of the Mississippi river.

The hall for horticulture, arts and implement exhibitors has been considerably improved. The park is in fine condition. The grand stand accommodations will be enlarged over one-fourth by the erection of a new stand 120 feet long, which will be completed by the 18th or 19th instant. The track has been considerably improved, and the speed of the horses, especially in harness, will show it. The races will be most attractive. There will be eight

races for runners, ten for trotters and two for pacers, under the auspices of the Society. The aggregate of purses is large—many of them are as high as \$750, some \$1,000 and one \$2,000. The best horses on the coast, from Oregon to Los Angeles, will be on hand to contest for these purses. In the trotting races there will be some new horses that never before made an appearance on the turf. Among these are the trotting horse Wonder, owned by Leland Stanford, and the Batcher mare. The new horses promise achievements that will surpass anything ever before witnessed on the California turf. In thoroughbred racing stock and trials of speed, we think there will also be an improvement upon the exhibition of last year. The match race for \$2,000, mile heats, between Theodore Winter's Norfolk filly and John Hall's three year old, by Woodburn, will open the races on the 19th, and will be a fine trial of speed. The running race, mile heats, three in five, for a purse of \$1,000, on the second day, will call out the best field of horses ever seen west of the Mississippi river.

A new feature of the State Fair, this year will be the auctioning of fine stock of all kinds, from thoroughbred racers down to sheep, pigs and poultry. These sales will take place every day before the racing begins, and persons living in any part of the State who have fine stock to sell will find it to their interest to bring it here for exhibition and sale at the time when the greatest number of purchasers is collected.—Sac. Union.

Fall of the Elevator at Vallejo.

The elevator at South Vallejo, which toppled over this afternoon, (16th) was the only one on the Pacific Coast. It fell in a north-northeasterly direction. The crash was heard for at least two miles, and produced a monstrous wave, that nearly sank a large scow which was lying at a wharf over three hundred yards off.

Hundreds of citizens rushed from North Vallejo and Mare Island to witness the remains of the elevator.

The loss is conceded to be not less than \$250,000.

The building, which for years proudly decorated South Vallejo, reaching seventy feet above the wharf, is now a pile of ruins, crushing beneath it the adjoining brick building, in which the engine and boiler were contained. The engineer narrowly escaped. He left his post, the only time during the afternoon, but ten minutes before the building fell, and was returning when it capsized.

Five thousand tons of wheat were in the bins of the elevator, and about one thousand tons on the wharf in sacks.

The wharves in the direction in which the building fell are destroyed for fifty or sixty feet, and the one leading to the building for three hundred feet. As the tide was low, but little of the grain will be saved, as the flood-tide will cover it.

A large force are working to save what they can. The cause of the disaster is by most attributed to the foundation of the building giving way, but various other opinions are pronounced. Luckily, no lives were lost.

Imperfect Construction of the Building—The Loss.

VALLEJO, September 17.—The loss of the Elevator at South Vallejo is imputed to imperfect construction of the building, and not to the piling. The latter had not yielded to the weight resting upon them. The loss [probably in grain] will not exceed \$70,000.

The Depressed Elevator.

The loss of wheat by the destruction of the Vallejo elevator, will not be so great as at first supposed. Large quantities can yet be saved, and energetic measures have been taken in that direction. Yesterday a lot of 10,000 sacks was sent up from this city. Isaac Friedlander is the principal loser by this accident, and there is a melancholy satisfaction in the reflection that he can probably stand it as well as any one man in California.—S. F. Call.

MESQUITE—said to be an Indian word—is a shrub or small tree growing in Texas, Mexico and Arizona, bearing large edible pods, which are greedily eaten by animals—sheep and mules preferring it to any other procurable food in those countries—and will grow on the driest soils. It is also the name of a rich, nutritious evergreen grass that obtains its name from being always found growing in company with the tree. We say evergreen, because it remains green through the whole of the driest season of the year, when most other grasses are dried up. Kellogg, seedsman, has imported the seeds of both tree and grass, and in answer to two of our patrons we give as price of grass seed, \$1 per pound for clean seed, 75 cents per pound in the chaff. Five pounds of clean seed are required for an acre. Alfalfa seed is from 12 to 16 cents per pound, requiring 16 to 20 pounds per acre.

EL DORADO COUNTY FARMERS' CLUB.—A Club has been organized in this county and at a recent meeting of members, Hon. R. Chalmers and G. G. Blanchard were appointed to represent the Club in the Farmers' State Club Convention, which meets in Sacramento next Monday.

The Fair at Petaluma.

We have an agent and correspondent attending to the interests of the RURAL, who, when opportunity offers, puts in an appearance at some one of the County or District Fairs, now being held throughout the State, and his "forte" sometimes seems to be that of condensing much into little space, and at the same time doing it well; the following is an example:

Address of Hon. Barday Henley at Petaluma

Was generally very satisfactory to those who heard it, and from this we may learn what kind of addresses please the farmers. The following were the leading points of the address: Fairs encourage excellence. Farmers are free from care and trouble of town life. National welfare dependent upon wealth and population. Labor honorable and the fountain of wealth and happiness. The farmer's labor the source of all wealth. Egypt, Chaldea and China the pioneers of agricultural science. Effects of Rome, discoveries of Columbus and the Reformation upon agriculture.

California a Favored Land and Petaluma a Favored County.

More time for reading here than elsewhere and every variety of desirable climate. Our Colleges and Journals teach the masses.

Natural productions sent from Petaluma 12,000 pounds of butter, 700 dozen eggs, 75 dozen chickens per day, 2,100,000 pounds cheese, 2,000,000 pounds leather per year, 312,800 acres under cultivation in the county, of which there are in wheat 165,200 acres, in corn 31,580 acres.

We may produce silk, tea and tobacco. The day is coming when war shall make way for peace. Farmers content and happy, the bone and sinew, the intelligence and virtue of the land. The grand future of Manufactures, commerce and agriculture, literature, poetry and science.

Let us Turn the Tables.

Farmers generally show their high appreciation of the legal profession by inviting them to speak at their annual gatherings. Is it not time the lawyers returned the compliment. There is a class of very intelligent practical farmers in Sonoma and Marin, cannot some of them deliver an address that will be instructive as well as entertaining.

Annual Races at Petaluma.

How shall we make our fairs pay expenses? This is the great problem for agricultural societies, East and West. Without races, balloons, ball matches, tight-rope performances, or something of the kind, the people won't come in any great numbers, nor stay long when they come, and with them a great many go home complaining of the Committee, and grumbling about what "they" do. They forget that every farmer in the county should consider himself personally responsible for its success. This time "they" have succeeded in drawing a goodly number, and, we judge, in making the show a great financial success. The show of stock was very creditable to the breeders, especially that of Rose in Devons, Redmond, in Durhams, and Daniels, in McClellan horses.

In the Pavilion.

The people of Sonoma and Marin showed evidence of that skill, care and taste for which they are so noted. Mr. Gartman in carriages, Gwin & Brainerd in saddlery, and Mr. Pepper in fruits made the largest show. Needle-work held a very prominent place.

Pool-Selling and Jockeying

Were great features of the show, and, in our humble judgment, they are things that should never be countenanced at an exhibition not wishing to train up gamblers. The Committee on Friday's races seemed quite of our opinion, for they awarded the money offered in one race back to the Society. The race was evidently manipulated by professionals. Three horses out of the four belonged to one ring, and this gave them excellent facilities for fleecing the unwary, who were taking their first lessons in gambling by bidding on pools.

RECEIVED.—An excellent article from L. J. D. of Knight's Ferry, that has something of the "ring" of Mary Mountain in it, though not written by Mary, will appear in next week's RURAL.

SANTA CRUZ FARMERS' CLUB EXHIBITION.—We have received complimentary tickets from the Secretary, R. Conant, to the Exhibition of this club, which takes place on the 10th, 11th and 12th of October.

State Fair Pavilion.

In our engraving we present a front view of the Pavilion of the California State Agricultural Society, corner of Sixth and M. streets, Sacramento. It has recently received a large addition on its eastern side, which is not represented in the engraving, making it the largest and most commodious building in the State for the Exposition to which it is more especially devoted.

There has also been an improvement made in the grand entrance on the south side, and an accession of grounds on the eastern side devoted more especially to floral displays.

The lower floor of the main building is usually devoted to mechanism of all descriptions, agricultural and mechanical tools and implements, and to some extent to farm products of the coarser varieties, whilst the finer fruits and flowers occupy the upper floor.

The eastern addition below, is for the operation of moving machinery, and the display of the larger farming implements, plows, harrows, cultivators, mowers, harvesters, etc.

The upper floor—it being the main hall—is devoted to fine fruits, flowers, works of art, paintings, domestic manufactured goods, em-

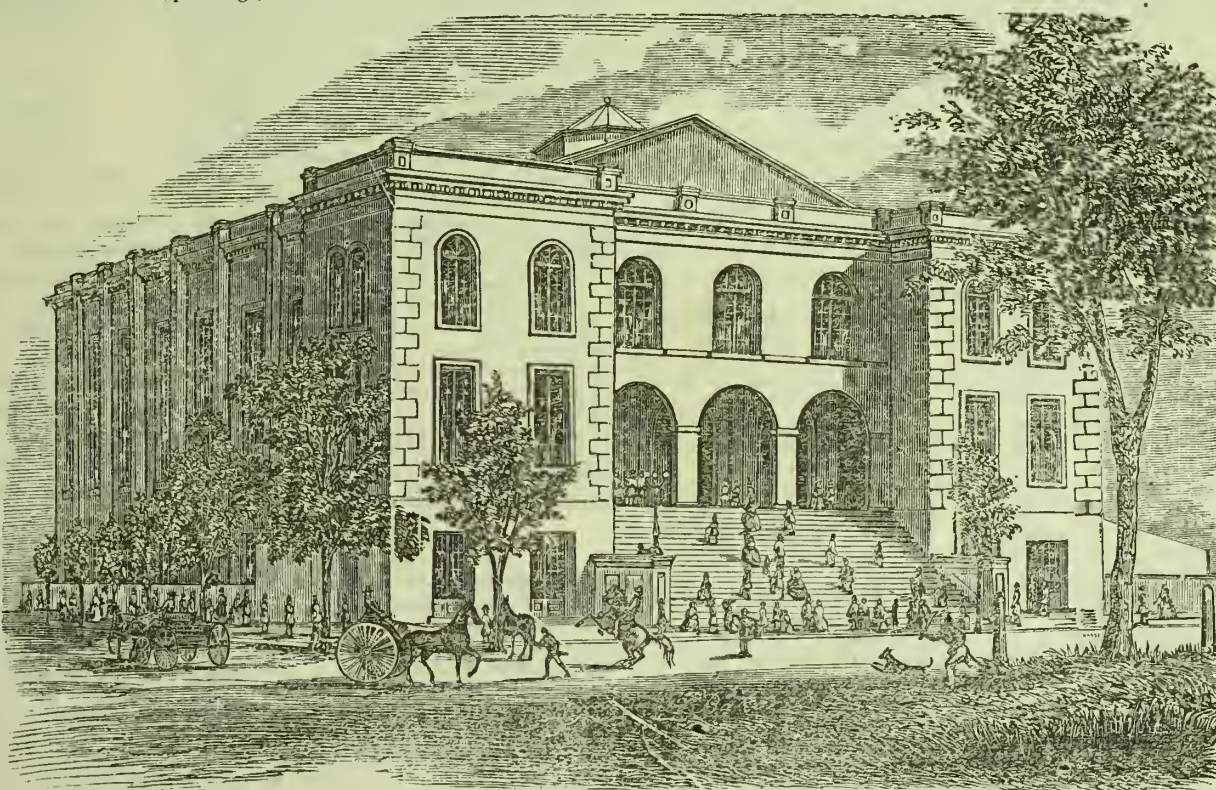
and the nuts at ten cents each, of which about 20 per cent. of all received from Persia, fail to grow.

Mohair—Its Value.

EDITORS RURAL PRESS:—We beg leave to answer some enquiries made through your columns by J. H. Carpenter, Sept. 14, 1872, headed Cashmere Wool.

First—We think there is no one in California who is buying mohair—Angora goats fleece—and at present I believe there is no one in America using it; for the simple reason that there is not now fleece enough in America to start up a mill to make a run.

The River Side mill, at Providence, Rhode Island, has all the machinery necessary to work mohair and would run the factory if they could get fleece enough to pay for the expense of employing competent laborers and other necessary expenses attending the starting and stopping of such a factory. They run it as long as they could get fleece; they can't start up on a few bales of mohair; we must first get the material and then work it. I could refer to other manufacturers who have offered to fit up machinery on this coast as soon as the breeders would guarantee fleece to run their mills; but



PAVILION OF THE CALIFORNIA STATE AGRICULTURAL SOCIETY.

broidery displays, sewing machines, mineral cabinets, etc., etc. The building is provided with offices and committee rooms and every convenience that can promote the comfort and convenience of visitors and will doubtless be thronged this week and next, by a larger number than ever before attended a California State Fair.

A New Source of Wealth.

We have been shown specimens of the Persian walnut, which the Messrs. Rosse & Grant, nurserymen at Topeka, Kansas, are introducing into that State. It is believed that the soil and climate of Kansas are admirably adapted to its growth. They planted about a bushel of nuts last year which are doing finely, and several barrels are now on their way for spring planting. In the Cashmere Valley, where they are extensively raised, there are four varieties—the kanak, the wantu, the denu and the kaghazi; the last of which is the finest nut grown, and is the one being introduced into Kansas. The nut is about a third or half larger than the English walnut, of an elongated shape, very rich meat and shell nearly as thin as paper. It is not an unusual thing for a tree from eight to twelve years old to bear thirty thousand (or 1,200 pounds) nuts, worth from thirty-five to fifty cents per pound. They are said to come into bearing early, and if the experiment is successful in Kansas, an orchard of the Persian walnuts may prove far more profitable than one either of the apple or pear. —New England Farmer.

Now if the Persian walnut is to become more profitable in Kansas than the apple or pear, would it not be well to introduce this walnut to a California soil and climate. For the information of our readers we remark, that from a letter received from a private source, we learn that Rosse & Grant will have a small number of reserved trees for sale next spring at \$3 each

at present the best we can do is, either to ship our mohair to England or put it in store for next year.

If all the breeders will save their fleece, everything that can be sheared, next spring we will be able to supply one mill or factory and have a good market.

Where to Sell.

Parties shipping to England will do well to ship to G. H. Cosens & Co., London or Liverpool, either place they sell more than a million pounds every year.

It was quoted not long since in English papers at three shillings nine pence for fair average, and shippers were holding for three shillings ten pence, from 90 to 93 cents per pound, and the duty to get it into out markets, would bring it up to \$1.20 at least. Fair average includes five inches and everything over five inches in length, shorter fleece—runs from 40 to 60 cents per pound.

Mohair in England is engaged one year in advance all the time, and sold in Asia before it is sheared. Mohair is as current as gold at the quotations in England. There has been some fleece worked this season in Philadelphia and some in New York, for which they paid from 40 to \$1.20 cents, the average of all grades figured about 82 cents per pound.

Commission Arrangement.

We propose to make an arrangement with some house in San Francisco between this and March, to receive and ship all the fleece that can be brought forward, and make a reasonable advance on it according to quality; there is no fear in regard to a good market, if every man shears, and brings forward his fleece in due time.

In regard to the value of full blood goats we can only speak for ourselves; we are selling Bucks that are free from kemp, and shear from four to seven pounds fleece, for \$50, single animals, and a reasonable deduction for lots according to the number included in one order, shipped free of charge. LANDRUM & ROGERS.

Waisonsville, Sept. 16th, 1872.

San Joaquin Valley Agricultural Society.

We collate from the Stockton Independent the main points of interest connected with the late very successful fair held at Stockton, Sept. 10th, 11th, 12th and 13th inst. :

First Day—Tuesday.

At an early hour those interested began to assemble at the race-track and at the Pavilion on Center street, to enter their stock and articles for the exhibition. The commodious hall on Center street had been nicely fitted up and elegantly decorated with pictures, flags and emblems of almost every nation, and suitable tables arranged for the display of the innumerable varieties of fruits, cereals, machinery and manufactured articles.

The present year has been more favorable than the last, as a walk through the Pavilion demonstrates the fact that the Unseen hand has steadily produced specimens of unsurpassed qualities of grain, fruits, flowers and other articles, while the strong arm of the mechanic has not ceased to form into perfect machinery the conceptions of his own inventive genius. With few exceptions the entries of manufactured articles were what may be styled of home manufacture—carriages, buggies, wagons, plows, pumps, woolen fabrics and other articles were of a quality rivaling any of Eastern manufacture. The endless variety of needle-

work, too numerous to mention, compares well with any that has ever been placed on exhibition at any previous fair.

In the evening the Pavilion was crowded with ladies and gentlemen who had assembled to admire the many articles on exhibition. The occasion was enlivened with music by the Stockton Cornet Band. The day passed off quietly and much to the satisfaction of the management of the fair.

Second Day—Wednesday.

The interest in the Fair at the Pavilion was greater yesterday than the day before, as evinced by the increased entries and the number of persons going to and from the Pavilion. The articles on exhibition are even more suitably arranged. In the evening the exercises were opened with music by the Stockton band, after which President J. K. Doak delivered an excellent address. The Pavilion was completely crowded with visitors from a distance, and ladies and gentlemen of the city.

The Races.

Among all the various field sports, there is none more attractive and even exciting, than a good horse race. While many, doubtless, visited the stock grounds of the Agricultural Society for the purpose of taking a look at some superior animals entered for exhibition, others were drawn thither only by the races announced to take place.

The Stock Grounds.

The parade of cattle was first on the programme, and stately bulls—magnificent animals—led the van, followed by finely conditioned and shapely thoroughbred cows and young stock. Next followed a procession of horses that would have gladdened the eye of a Herring or Rosa Bonheur all capering along with "life and metal in their heels." The thoroughbreds took the lead, and roadsters followed in the wake. The flashing eyes and glossy hides of a large number of little limbed racers following their dams and prancing with the life and buoyancy of young deers, attracted much attention, and, in our estimation, constituted one of the most magnificent spectacles ever before witnessed at a San Joaquin Valley District Fair, or in any part of the State.

Third Day—Thursday.

During the day a few more entries were made and more than the usual number of visitors were at the Pavilion. The exhibition is more promising than had been anticipated; in the evening the Pavilion was again crowded with visitors. The programme, as previously announced, was carried out, adding much to the enjoyment of all present. After singing by a number of ladies and music by the Stockton band, A. W. Roysdon was introduced, who delivered in a clear, forcible and graceful manner, the Annual address. Mr. Roysdon's address was frequently applauded and received with marked attention.

[For want of room we are obliged to defer a further notice this week.—ED. RURAL PRESS.]

SUOAR FROM MELONS.—Don't fail to send for this work, a book of 55 pages, that will give you all needful instructions for making sugar from your surplus watermelons and santeleups. Send to Dewey & Co., 338 Montgomery street, San Francisco. Price 50 cents.



The Art of Story Telling.

Anybody can tell a story. But almost nobody can tell a story well. It may not take a very high order of talent to be what the French call a *reconteur*, but it is a very rare sort of talent. The law of demand and supply utterly fails in the matter of stories. For the demand is without limit, the supply very small. Children stand like open-mouthed swallows, with a perpetual cry for stories. Every company of men and women hails a *reconteur* as a heaven-send. But story-tellers are none the more abundant. There are just as many Cousin Sally Dillards as ever—people who go round the world to reach the next town, people who tell a story with all the irrelevant matter they can think of stuck to it. There are just as many owls as ever who tell stories as though they were giving a supreme court opinion.

In relating anecdotes, some people always manage to let you see the point before they get to it. Others never get to it. A story is told of a man who was a plagiarizer of jokes. He was a guest at a party one evening where a servant let fall a plate of tongue. The company started up in confusion, but the host wittily remarked: "Sit still, gentlemen; it's only a slip of the tongue." The plagiarist immediately made an entertainment, inviting a different set of guests, that he might repeat the witticism, and arranged his occasion by instructing his servant to let a plate of meat fall. But his guests only stared in blank amazement when he smilingly assured them that the fall of a leg of mutton was only "a slip of the tongue."

The same typical blunderer heard a gentleman remark at a country inn that yonder wagon must have come a long distance to-day. When some one asked why, the gentleman replied that it looked "well-tired." The blunderer rode twenty miles through dust and heat to spoil the joke at the next tavern by assuring the company that another wagon must have come a long distance, because it looked very much fatigued.

But omitting the point is only one fault of story-tellers. There are some who fail in imagination, some who lack condensation, some who lack simplicity, some who orate, some preach, some who run well for a season but come out poorly. Of American literary people, only about two dozen have given any evidence of ability to tell stories. Essay writers are plentiful enough, essay readers are few. But the story-teller is born, not made, and so we have to wait for a crop to grow.—*Hearth and Home*.

No WONDER.—The Cleveland police picked up a man a few days ago, who appeared to be suffering from great "worryment of mind," but, on applying soothing remedies, he explained matters. When he left his happy home early in the morning, his wife kissed him good-by, as in her custom when she wants any errand performed, and then asked him to "go to the dressmaker and tell her that she (the wife) had changed her mind, and would have the watered silk made up instead of the poplin, and be sure to tell her, dear," said the wife, "that if she thinks it would look better with ten bias flounces without puffing, and box-plaited below the equator, which should be gathered in hem-stitched gudgeons up and down the seams, with a gusset stitch between, she can make it up in that way instead of fluting the bobinet insertion, and piecing out with point applique, as I suggested yesterday."

PERSEVERANCE.—A poor woman had a supply of coal laid at her door by a charitable neighbor. A very little girl came out with a fire-shovel and began to take a shovelful at a time, and carry it to a sort of bin in the cellar. I said, Do you expect to get all that coal in with your little shovel? She was quite confused with my question, but her answer was striking: "Yes sir, if I work long enough." Humble worker, make up for your want of ability by abundant continuance in well doing, and your life-work will not be trivial. The repetition of small efforts will effect more than the occasional use of great talents.—*Spurgeon*.

The Art of Not Hearing.

The art of not hearing is full as important to domestic happiness as a cultivated ear, for which so much time and money are expended. There are so many things which are so painful to hear, many of which if heard, will disturb the temper and detract from contentment and happiness, that every one should be educated to take in or shut out sounds at will. If a man falls into a violent passion, and calls me all manner of names, the first word shuts my ears, and I hear no more. If in my quiet voyage of life I am caught in one of these domestic whirlwinds of scolding, I shut up my ears as a sailor would furl his sail, and making all tight, scud before the gale. If a hot and restless man begins to inflame my feelings, I consider what mischief these sparks might do in the magazine below, where my temper is kept, and instantly close the door. Does a gadding, mischief-making fellow begin to inform me what people are saying about me, down drops the portcullis of my ear, and he cannot get in any further.

Some people feel so very anxious to hear everything that will vex or annoy them, they set about searching and finding it out. If all the petty things said of one, by heedless or ill-natured idlers, were to be brought home to him, he would become a mere walking pin cushion stuck full of sharp remarks. I should as soon thank a man for emptying on my head a bushel of nettles, or setting loose a swarm of mosquitoes in my chamber, or raising a pungent dust in my house generally, as to bring upon me all the tattle of spiteful people.

If you would be happy, when among good men, open your ears; when among bad, shut them. It is not worth while to hear what your servants say when they have slammed the door; what a beggar says whose petition you have rejected; what your neighbors say about your children; what your rivals say about your business or dress. I have noticed that a well-bred woman never hears an impertinent remark. A kind of discreet deafness saves one from not a little apparent connivance in dishonorable conversation. It is well for those who seek for present or for future blessing, to shut their eyes from seeing evil, and their ears from hearing of blood.—*Ec.*

Importance of Truth in the Cultivation of the Memory.

When we reproduce what we have seen or otherwise experienced, it must be with scrupulous fidelity. No details must be filled in by the imagination. It is one of the most difficult things in the world to speak the exact truth, or even to represent to ourselves the exact truth. If we hear an event frequently related, we soon begin to confuse it with our own recollections. In this way, honorable and conscientious persons have testified to witnessing occurrences which really took place before they were born, but which had been often repeated to them in childhood. The imagination is an active and deceitful faculty often putting on the guise of recollection. Without the most vigilant care to distinguish the two, men may come to utter the most absurd falsehoods, without any suspicion that they are not telling the truth. Imagination is but a rearrangement of our experiences, and the faculty of taking note of this rearrangement gets untrustworthy without a persistent and conscientious exercise of it. Hence, though as the proverb says, liars have need of good memories, they are of all men the least likely to have them. The best cultivation of the memory, therefore, forbids us even to lighten the color of a narrative, or sharpen the edge of a witticism, when professing to narrate what has occurred, but to accept dullness rather than admit inaccuracy.—*American Exchange and Review*.

SATURDAY NIGHT.—Saturday night makes people human, sets their hearts to beating, as they used to do before the world turned into drums, and jarred them to pieces with tattoos. The ledger closes with a clash, the iron-doored vaults come to with a bang, up go the shutters with a will, click goes the key in the lock. It is Saturday night, and we breathe free again. Homeward, ho! The door that has been ajar all the week has closed behind us; the world is shut out—shut in, rather. Here are our treasures after all, and not in the vault, and not in the book—save the old record in the family Bible—and not in the bank. Maybe you are a bachelor, frosty and forty. Then, poor fellow Saturday night is nothing to you, just as you are nothing to nobody. Get a wife, blue-eyed

or brown-eyed, but, above all, true-eyed. Get a little home, no matter how little; a sofa, just to hold two, or two and a half, and then get two, and then read this paragraph by the light of your wife's eyes, and thank Heaven and take courage.

The Coming Girl.

The coming girl will be of some use in the world, she will cook her own food, will earn her own living, and will not die an old maid. The coming girl will not wear the Grecian bend, dance the German, ignore all possibilities of knowing how to work, will not endeavor to break the hearts of unsophisticated young men, will spell correctly, understand English before she affects French, will preside with equal grace at the piano and wash-board, will spin more yarn for the house than for the street, will not despise her plainly clad mother, her poor relations, or the hand of an honest worker; will wear a bonnet; speak good, plain, unflipping English; will darn her own stockings; will know how to bake dough-nuts, and will not read the *Ledger* oftener than she does her Bible. The coming girl will walk five miles a day, if need be to keep her cheeks in glow; will mind her health, her physical development, and her mother; will adopt a costume both sensible and conducive to comfort and health; will not confound her hypocrisy with politeness; will not place lying to please above frankness; will have courage to cut a unwelcome acquaintance; will not think that refinement is French duplicity; that assumed hospitality, where hate dwells in the heart, is better than outspoken condemnation; will not confound grace of movement with silly affectation, will not regard the end of her being to have a beau; will not smile, and smile, and be a villain still. The coming girl will not look to Paris, but to reason, for her fashions; will not aim to follow a foolish fashion because milliners and dressmakers decreed it; will not torture her body, shrivel her soul with puerilities, or ruin it with wine and pleasure. In short, the coming girl will seek to glorify her Maker and to enjoy mentally his works. Duty will be her aim and life a reality.—*Ec.*

Saving Money.

The possession of a few dollars often makes all the difference between happiness and misery, and no man, especially with a family dependent upon him, can be truly independent unless he has a few dollars reserved for the time of need. While extreme carefulness as to the expenditure of money will make a rich man poor, a wise economy will almost as certainly make a poor man rich, or at least make him, to a considerable extent, independent of the caprices of employers and of the common vicissitudes of life. Nothing is more important to the poor man than the habit of saving something; but his little hoard will soon begin to grow at a rate which will surprise and gratify him. Every working man ought to have an account in some savings bank, and should add to it every week during which he has full employment, even if the addition is but a dollar at a time. If he does this, he will soon find the dollars growing into tens, and these tens into hundreds, and in a little time will be in possession of a sum which is constantly yielding an addition to his income, which secures him a reserve fund whenever one is needed, and which will enable him to do many things, which, without a little money, he would be powerless to do.—*Pittsburgh Post*.

To the Young Housekeeper.

As a wife, do not expect too much of your husband, but remember that he, like others, is imperfect. Overlook little faults in him as you would have him do in you. Let your hopes and desires be guided by reason and moderation. Begin by living within your means. Let your aims be, not to live in style and fashion, but to live comfortably and frugally. Care and economy in little as well as in large things, are indispensable to your success as a good wife or housekeeper.

Be careful for your husband's interest if you would advance your own, for they are the same. Let cleanliness and order be cherished, but not to excess. Be industrious, but do not overtask body or mind when you can reasonably avoid it. Far better is it to live plainly than to injure the precious boon of health by over exertion. Of this fact, the young seem usually ignorant. Alas, how many useful lives are yearly sacrificed on the altar of fashion!—*The Household*.

Young Folks' Column.

How to Look Pretty.

EXERCISE FOR THREE LITTLE GIRLS.

FIRST GIRL.

You know everybody wants to be pretty. If I were a flower I shouldn't want to be a dandelion or a sunflower. I should want to be a tulip, or a lily, or a tea rose. But everybody can't be pretty, because some are homely. I wish I was pretty. It must be nice to have people say: "What a charming, pretty girl that is!" "Isn't she a sweet creature?"

SECOND GIRL.

I'd like to be pretty, and witty, and wise, With beautiful features and beautiful eyes; Beautiful temples, and beautiful hair, Waving like gold in the summer air, Beautiful hands so soft and white, Beautiful form so fairy and light; Some one would love me, and call me fair, Weaving a crown for my golden hair.

THIRD GIRL.

Loving eyes are always sweet,
Gentle hands are fair,
Though you have no tiny feet;
Blue eyes or golden hair.

There's a beauty richer far,
Every heart may win,
Shining out in word and deed
From the soul within.

Roses of the cheek will fade,
Beauty pass away;
Loving words and gentle deeds
Never can decay.

The Philosophy of Gentleness.

Some boys once wished to get a boat across a stream. There was a girl on the side of the stream with the boat, but she did not dare to attempt to paddle the boat over. So the boys tied a stone to the end of a kite string, and then making a coil of the twine on the shore, they threw the twine across the water, and the girl, picking it up, fastened the end of the twine to the bows of the boat, while the boys had the other end on their side of the water.

The boys were quite small and had not much sense, and one of them said, "Now we must all take hold, and when I give the word we must all pull together. It is not a strong string, and so we must all pull the quicker and harder to make it move such a big boat."

So they all took hold of the string as it lay loose on the shore, and set off upon a run. Of course as soon as the slack was taken in, they were brought up suddenly, and the twine was snapped in two.

That is to say, there was not time enough allowed for the boat to pass through all the rates of motion from perfect rest to the rate at which the boys were running—which series of transition was absolutely necessary—and consequently the line gave way.

Pretty soon, however, an older boy named William came by and saw what the difficulty was. He paused a moment on the bank and heard what the boys had to say. He did not tell them they were a parcel of little dunces and ought to know better. That would have been twitching their minds as they had been twitching the boat.

So he said simply.

"Perhaps you pulled too suddenly. Let us try again."

So he recovered the end of the twine, and fastening another stone to it, threw it over. The girl drew in the broken part of the line on her side, and tied the ends together. Then William called the smallest boy in the company to come and pull upon the string, charging him, however, to pull very gently until he felt the boat beginning to move, and then to walk slowly onward. As the boat advanced, of course, through the different rates of speed which it was necessary that it should acquire in succession, the small boy pulling steadily with the same force, could, of course, walk on faster and faster, until, at length, the boat was brought safely over.

Thus a little boy alone could do more than half a dozen, all bigger than he, together.

And this is the philosophy of gentleness.

Of course for a full understanding of this subject in all its bearings there are a great many limitations, and restrictions, and exceptions to be considered.

There are causes in the moral world as in the material, where sharp, sudden and even violent action may be necessary to accomplish the purpose required.

DOMESTIC ECONOMY.

Cooking as a Fine Art.

A late number of *Blackwood* contains an interesting article on "Cooking as a Fine Art," as practiced in France. It is rather too long to reproduce in our columns, but there are some suggestions, partly drawn from the magazine, and partly arising from the discussion of the subject, which ought not to be overlooked. "In England," says the *Blackwood* article, "taking the people as a whole, and excluding the special cases, there are but three known national ways of dressing food—roasting, boiling, and that inconceivable horror known as hash. Roasting is not badly done by us, and we fry fairly; but there ends our faculties; what we call boiling is one of the most senseless acts to which human acts can descend; it is an inexorable, unjustifiable, wanton folly."

This rather sweeping language; in fact may be considered "overdone." But so far as it is true, it applies as well to this country as to England. The contrast as between France and the English-speaking and cooking nations is, that the French cook utilizes the water in which meats are boiled, and considers the things boiled in it as secondary; while English cooks extract all the virtue in the process of boiling, serve up the depleted article thus misused, and throw away the water which holds in solution so much of the flavor, aroma, and a large portion of the nutriment.

A leading peculiarity of the French seems to be that their women, in every condition of life, from the poorest to the richest, if not born cooks, are educated to consider cooking and household economy honorable, and are taught to make these substantial employments graceful. "In England economy is almost always nasty; in France it frequently assumes a character so subtle and artistic that it loses its repulsive physiognomy, and, indeed, sometimes acquires a sort of charm, in consequence of the infinite skill with which it is administered, and of the admiration which that skill provokes. A result of the French system is that it necessitates, or, at all events, insensibly produces an almost universal power of home usefulness among the women. It expands their sphere of usefulness in life, and creates for them a special duty, teaches them that wise truth which most of them so clearly recognize and cordially practice, that no indoor detail is beneath a woman's care; it further develops in them the handiness, the adroitness, which has become distinctive of the modern French women."

It is assumed, on pretty good evidence, though not very fully, that this cleverness of the French in cooking and other household details is only about a century old. The force of circumstances and the altered condition of society have led the French into these habits of economy and good housekeeping. Probably just the reverse of this course of household management is true of England and America. Housekeeping is not, among us, in so high honor as it was a hundred years ago. And perhaps from this arises the evil which is loudly complained of in England and the United States—the unsatisfactory condition of domestic service.

Cooking is not regarded as a "fine art," nor are heads of houses so ambitious as their grandmothers were of being themselves competent to attend to all the details of the household. The desire is rather to find some person to do all this sort of thing for them, at whatever price. Now the consideration for doing a despised routine of duty must either be increased to compensate for the implied humiliation or persons must be found to undertake the despised employment, to whom "humiliation is no object or dread. Raise cooking—not mere fancy cooking, but the furnishing of daily, wholesome food—so that it shall be a subject for emulation and excellence, and the employment will be in itself a part of the compensation.

So of all other household duties. The daily comfort of every one, man, woman, and child, depends upon the style in which the house is kept. Upon comfort of body, domestic happiness, peace of mind, and even virtue and good conduct chiefly rest. The man is not half a man who has not a happy home; the woman more than shares in his deterioration; and as to the children, they are but entering upon a life of discomfort, which makes their father's and mother's house less attractive than almost any other place. There is no use in pool-poohing the homely subject of preparing meat and drink as below the attention of intellectual people. "Our daily bread" is regarded as worthy a distinct petition to the Giver of all good things, and the preparation of that daily food ought to be regarded as not beneath mind and intellect, since food is not only an absolute necessity, but as one of the things which the great Benefactor gives "richly to enjoy."

HOW TO KEEP MEAT.—Meat is much better for family use when at least one week old in cold weather. The English method for keeping meat for some time has great merit. Experts say, hang up a quarter of meat with the cut end up, being the reverse of the usual way, by the leg, and the juice will remain in the meat, and not run to the cut and dry up by evaporation. It is worth a trial, and when made will be continued.

To Save Washing.

When a housekeeper is her own washerwoman, it is worth while to study a little how to make it light as possible. White skirts are by some thought indispensable for every day wear in summer, under all descriptions of light clothing; and every one knows the burdensome washing and ironing they create. But under light calico dresses, buff lawns, linens, etc., a skirt of fine buff goods—nankin, linen or muslin, as you prefer—will look equally well, and save an immense amount of labor. They can be tucked or trimmed the same as white if desired.

As for ironing ruffles, either pleated or gathered full, I confess to lacking the necessary qualities, both of mind and body. Yet I wear ruffles, the same as others; and one day I told my neighbor, how I managed them. She told me afterwards that she adopted my plan, and could now do up the same ruffles in half an hour that she formerly did in three hours. In the first place, I utterly repudiate pleated ruffles. (I used to write it "pleated," but a learned milliner told me that spelling had gone out.) I do not think that in the origin and beginning of things, pleated ruffles were ever intended to have an existence. Why, what is the essential idea of a ruffle? the spirit, the animus, the psychal principle of a ruffle, if not lightness, airiness, and vivacity? A pleated ruffle is stiff ungraceful, unsuggestive, because unnatural. I have no doubt they are the invention of some half-distracted *modiste*, who had been goaded by an exacting public to devise "something new" until all her imagination lay flat and tame as a freshly ironed pleated ruffle.

My way is to gather the strip of ruffling upon a small cord. Be sure and have the cord as long as the strip or very nearly; so that when the ruffle is straightened to iron, it may lie smoothly. When I have drawn up the ruffle to the size of the skirt, sleeve, or whatever is to be trimmed, I knot up the surplus cord loosely and slip it under out of sight; sometimes pass it between two stitches of a skirt seam and fasten on the inside of the skirt entirely out of the way. It is not necessary to take very short stitches in basting this ruffle where it is wanted. When washing day comes, rip it off, let it all out straight, wash, iron, draw up the cord and tuck on again. The little shirr that holds the cord is rather pretty in its effect than otherwise; two run close together make a really ornamental finish.—*Cor. Ohio Farmer.*

TO DRY PEARS AND GRAPES.—Take the same pears that are good for steaming, but too acid for eating, while uncooked; pare, quarter, and put into deep dishes, and sprinkle over with sugar—about a teaspoonful of sugar to a quart of fruit. Leave for twelve or fourteen hours, by which time there will be a good deal of juice in the dishes; then put them in your sweetmeat-kettle and stew until nearly clear; then remove and spread upon dishes to dry in a warm but not hot oven. The juice must be poured over them.

Acid grapes are excellent treated in nearly the same way, only instead of standing over night in sugar, they must be put in the kettle to scald at first. As soon as they boil, the skins will burst and the seeds rise to the top; they must then be skimmed immediately, or they will sink again upon the grapes. After skimming, remove from the fire, and stir in the same preparation of sugar as for pears; spread on dishes and dry. When done, pack in stone jars.—*Hearth and Home.*

Practical Receipts.

ICED APPLES.—Pare and core one dozen large apples; fill with sugar, very little butter, and cinnamon; bake till nearly done; let them cool, and if you can without breaking, put on another dish; if not, pour off the juice; having some icing prepared, lay on top and side, and set into the oven a minute or two to brown slightly. Serve with cream.

GRAPE CATSUP.—Ripe grapes, with sugar, vinegar, cloves and other spices, boiled until tender, make an excellent relish to eat with cold meat.

SPONGE GINGERBREAD.—Two cups of molasses, one cup of milk, two tablespoonfuls of melted butter, one teaspoonful of soda, and flour to make pretty stiff, ginger or cinnamon to suit the taste.

CREAM CAKE.—Two cups of flour, one and one half cups of sugar, one-half cup of butter, one cup of sour cream, one and one-half teaspoonfuls of soda, dissolved in a little cold water, little nutmeg, lemon, or vanilla.

ROCK CREAM.—Boil a teaspoonful of the best rice till quite soft in new milk, sweeten with powdered white sugar, and pile it upon a dish, lay all over it lumps of jelly or preserved fruit of any kind. Beat the whites of three eggs to a stiff froth, add a little sugar, flavor with what you please. Add to this when beaten very stiff about a tablespoonful of rich cream,—drop it over the rice, giving it the appearance of a rock of snow.

HATHAWAY CAKE.—Whites of three eggs, one cup of sugar, one of flour, one-half cup of butter, one-half cup of milk, one cup of corn starch, one half teaspoonful of soda and the same of cream of tartar. Bake with increasing fire.

HOME AND FARM.

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

The time for the drying of fruit is swiftly passing, and it will be a noteworthy item if Californians succeed in storing enough for the home supply. Last spring we must have been not only "out," but nearly famishing for "apple sauce," judging from the dozens of car loads of dried fruits received from Chicago.

My uncle Toby, safely shut up in the growlery, must have come quite unprepared upon some of those commercial facts of the period, for he groaned aloud, and the voice of his lamentation resounded through such cracks-in-the-wall as would not be tolerated a moment in thorough-going Chicago.

Yes, Chicago!

Lucky we! to have such a go-ahead neighbor dispatching countless car-loads of provisions so that braggart, reckless California may never lack a square meal.

Such a country as ours for fruit-growing! And as for drying—just spread 'em on boards, or anywhere, no rain or dew to bother, and when they're done, rake 'em in and spread some more. Or easy enough to fix a dry-house that no insect can enter, and dry our wasting fruits by the ton. But no! that smacks of industry and thrift; too picayunish for us! Let the fruit rot, for the Great West will dry enough to load whole trains for us, and it helps commerce to buy of them at whatever price our merchants please to ask. Yes, yes, let us keep up a big name for commercial enterprise, even though it sucks us dry—and that's what it does for us farmers, that's just what it does. Such a country as this for dairying, and for raising hogs and poultry! Yet somehow we don't manage to feed ourselves. Here comes train after train loaded with hams, lard, eggs, butter, cheese, and, bless us, preserved milk! Aye, commerce is king—and thank the Lord for Chicago. Just after this dried apple wail I went to the cask where ours had been stored, and behold the bottom!

Fresh apples would not be fit to use for several weeks, and here was proof that we had consumed easily about twice as much dried fruit as we usually lay up for the season. Here was a poser for me, and a frightful home-made text for my Uncle Toby.

When the favorite pies and bowls of ruddy apple-sauce were seen no more upon the table I heard a voice declaring with awful emphasis—"O, it's of no consequence! You can get plenty of dried apple from Chicago!"

"Yes to be sure, but" (softly to turn away wrath) "we cannot buy for any price such excellent fruit as we have been using—so we'll get along with berries and things till fresh apples come in. And ours 'lasted quick' because it was so good, and it was so good because prepared in our

New Apple Dryer."

My husband made it; and being what Mrs. Stowe calls a "handy man" he has hit upon just the thing for family use and I will try to describe it.

An oblong box on legs high as a table; back side of box higher than front so that the glass lids shut down slanting, thus offering a better surface to the sunshine. Across the bottom of the box are ribs of wood upon which are stretched two widths of thin crash toweling upon which the fruit is spread. In the bottom of the box are several holes for ventilation, over which are pasted pieces of mosquito netting to keep out insects. Similar holes are made above the fruit in back side of box. The glass lids are made of a large window, the two sections fitted nicely and so hung as to be easily removed for safe storing when not in use, but may be used in winter as a sort of hot-bed for starting seeds in boxes. We have not yet tried it in that capacity, but apples dried in it are almost like something new under the sun.

We have the little machine that pares, cores and slices the apples, and these slices after two or three days in the dryer—according to warmth of weather—are ready to pack away, not black and brittle, but pink and moist.

There are thousands of brisk Americans who have traveled and know the world. They will tell you that a dried-apple pie is the vilest abomination of cookery. So it is, generally, but not necessarily; and I should not be at all surprised if some chronic scoffer at apple pies should sometime ask me for a second piece.

But our apples for drying are probably among the best that can be grown—the "Roman Stem," tart, crisp and juicy; the best cooking apple we have found in California.

At Knight's Ferry the R. I. Greening was our favorite for cooking and drying, but they would not keep at all. Here they will keep well until January; the Bell-flower is good until March; the Newton Pippin, firm and crisp in April. Not so, however, if abused in picking and handling, which they generally are. Our apples for Winter are picked carefully and laid upon

shelves in a cool chamber. Evenness in temperature is the great secret in keeping. As an experiment, some have been buried in the ground, others closely covered in barrels, others coated with lime; but with no special advantage in either case.

Agricultural Fairs.

It is rather stirring, even to read about the fairs in progress all over the State, and I hope every farmer and his wife and children will go to the fair and help to make it a joyful "Harvest Home."

We are always too tired to dance and sing around the last load of grain; also too hot and dusty; also the farm surroundings are by no means favorable to such poetical rejoicing as crowned the Harvest Home of Merrie England. So it is good to get a little rested, and then go all together to the Fair, taking along something to be proud of, so that we may be in good heart to praise and enjoy the wonderful things our neighbors will bring.

Can we ever forget the first Fair at Knight's Ferry! How astonished we all were that so many noteworthy articles, mammoth vegetables and fruits worthy to represent a whole zone, could be gathered from one quiet neighborhood. Here in Santa Cruz they enjoyed a similar surprise last Fall, and straitway resolved that the first shall not be the last; so we are to have another in October.

How delightful in these decorated halls to look at the handsome quilts, rugs, all sorts of useful articles, and remember that we need not go mourning for the grandmothers, and lamenting that "industry is a lost art."

Economy is looking up in the shape of rag carpets, baskets and racks made from old hoop-skirts, and the click of knitting needles and knitting machines is heard in the land.

Whatever we carry to the Fair, let us be sure to get up a large supply of common sense and stick to it all the way through; else we shall be "seized upon" with the dress mania and fail to work out our own salvation as farmers' wives. Let us be content (as men generally are) to dress according to our business and then worry no more about it.

If we see a lady mincing uncomfortably along with pinched waist, pinched feet, high heels, enormous hump on her back and three score and ten flounces—let us take a good, long, easy breath, stand firmly in our broad boots, and remember that to keep up with fashion at the present rate of changes, involves as much labor and nervous wear and tear as to bear and rear plainly a family of good, smart children. Which is the best life-work for a large-hearted woman?

For a long time it was a mystery how women managed to sustain a mass of drapery at such an acute angle from the body; but now I know;

"It" is Newspapers!

A sweet young voice called out: "O, mamma! I've found several *Alas* in the closet, just splendid for bustles! I'll fix you a nice new one. The *Chronicles* aren't half so good—they creak so; and the *Bulletin* is just awful! not worth a cent. But the *Christian Union* does pretty well."

It is a pleasing duty to let these papers know what they are good for; and the *Ala* will be justified in "coming out strong" to meet the demand.

How to Make Good Farmers.

Induce them to take an interest in the farm, in the implements, in the stock; tell them all your plans, your successes and failures; give them a history of your own life, and what you did and how you lived when a boy; and but do not harp too much on the degenerate character of the young men of the present age; praise them when you can, and encourage them to do still better. Let them dress up for the evening, instead of sitting down in their dirty clothes in a dingy room. Provide plenty of light; thanks to kerosene, our country homes can be as brilliantly and as cheaply lighted as the gas-lit houses in the city. Encourage the neighbors to drop in evenings. Talk agriculture rather than politics; speak more of the importance of large crops, of good stock, of liberal feeding, and of the advantages of making animals comfortable, rather than of the hard times, low prices and high wages. Above all, encourage the boys to read good agricultural books. Papers are well enough, but an intelligent boy wants something more and better. Get him some good agricultural book to study. Read it with him, and give him the benefit of your experience and criticism. When he has mastered this, buy him another. In our own case, we owe love of farming principally to the fact that our father talked to us of everything that was doing on the farm; answering all our questions and encouraging, rather than refusing, our childlike desire of helping him.—*American Agriculturist.*

INEXPENSIVE ORNAMENTS.—There is no more ornament inside or out of our houses so cheap and tasteful as plants and flowers. Few pause to regard the architecture of your rooms or your house, but the beauty of flowering shrubs, of the living arabesque of a thrifty creeper over your door, are lessons of taste and beauty. Indeed, suburban residences are sadly deficient without these simple yet beautiful accessories, always within the reach of taste and refinement no matter how empty the purse. As the real necessities of life require the least expenditure of time and money, so these objects which tend most truly to satisfy the love of the beautiful in nature, are within the reach of her humblest children.—*California Horticulturist.*

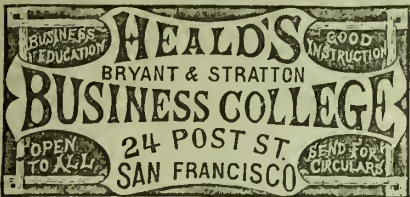
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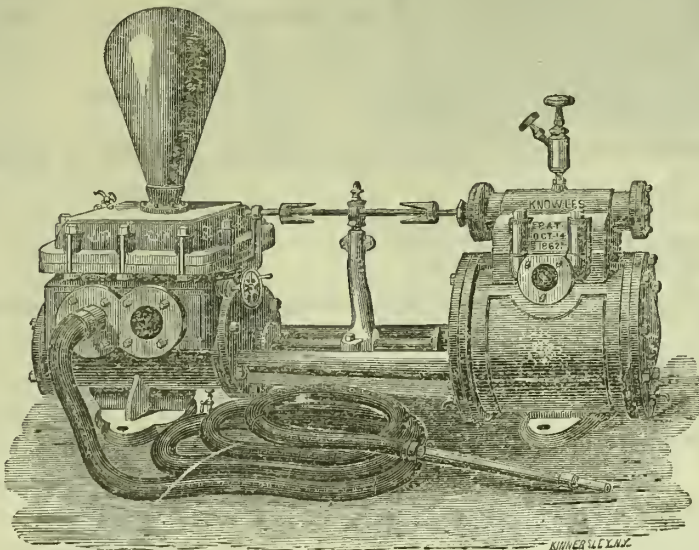
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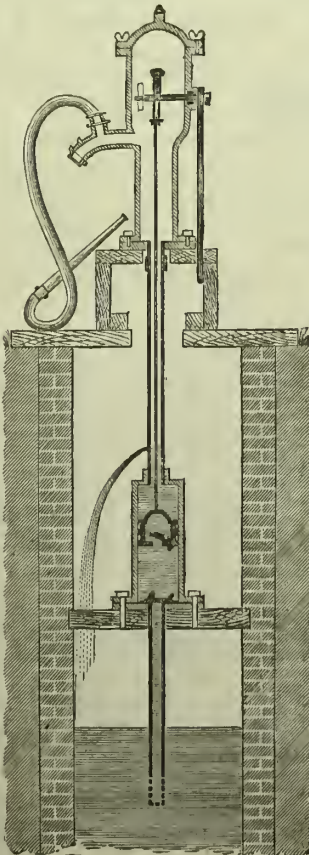
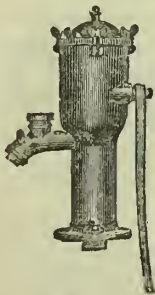
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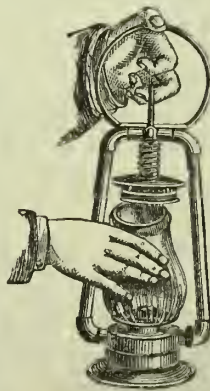
For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all part of the State. For particulars address

5v3-tf

N. GILMORE
El Dorado, El Dorado county,
California.

CROCKERY,

CHINA AND GLASSWARE,



Coal Oil Lamps,

Silver-Plated
Ware,

Table Cutlery,
Etc.,

For Sale at Lowest Market Rates,

—BY—

HAYNES & LAWTON,

Market Street,.....Under Grand Hotel,

SAN FRANCISCO.

12v4-1am3ml8p



H & L AXLE GREASE.



The attention of Teamsters, Contractors and others, is called to this very superior AXLE GREASE manufactured by

HUCKS & LAMBERT.

The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

LOW A RATE

As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

HUCKS & LAMBERT

Invites all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.

3v24-cowr

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (stitches on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

E. W. HAINES, General Agent,

17 New Montgomery street, Grand Hotel Building, SAN FRANCISCO.

WARNER & SILSBY

Manufacture all sizes of

Bed and Sofa Springs,

Which they offer to the trade at reduced prices; also the celebrated **Obermann Self-Fastening Bed Spring.**

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.

642 Mission Street, above New Montgomery, San Francisco. 23v3-5m

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO.,

Manufacturers of and Dealers in

Monuments, Headstones, Tombs,

MANTEL PIECES, ETC.,

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CHEMICAL PAINT,

Of any desired Shads or Color,

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list. 15v23-5m

HELY & JEWELL, Agents.

TULE LAND.

Improved or unimproved, and in quantity and location to suit purchasers.

HOMES AT BERKELEY.

the future site of the State University of California. Fine views, pure air and water, and the best of schools combine to make the spot attractive. Direct communication with Oakland by railroad. For lots of any desired size apply to

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No. 3 Stevenson's Building, 331 Montgomery St., S. F. 8v14-1m

SOMETHING NEW.

We have for sale the Right to the Pacific Coast for a new and useful invention that is needed in every family. It is easily manufactured and requires but a small amount of capital to commence with. A number of orders have already been taken, which will be turned over to any party who may purchase the patent.

Samples can be seen at our office, or descriptive circulars will be sent to any address on application.

WIESTER & CO.,

17 New Montgomery Street, San Francisco.

MOTHERS, WHY DO YOU NEGLECT TO BUY

SILVER-TIPPED SHOES

For your dear little children? They never wear through at the toe.

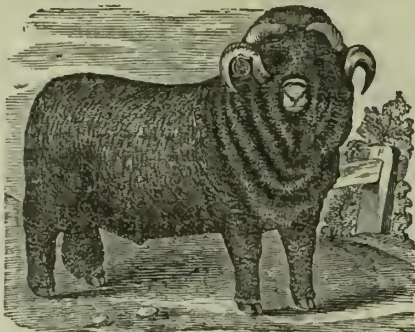


P. O. BOX 1349, PITTSBURGH, PA.

Breach-Loading Shot Guns, \$40 to \$50. Double Shot Guns, \$3 to \$150. Single Guns, \$2 to \$20. Rifles, \$3 to \$75. Revolvers, \$5 to \$25. Send Stamp for Price List. Army Guns, Revolvers, &c., bought or traded for.

5v25-sow26t

Important to Wool Growers.



PURE BLOODED FRENCH MERINO RAMS FOR SALE BY ROBERT BLACOW, Of Centerville, Alameda County, Cal.

These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock.

THOMAS & SHIRLAND,

Importers and Breeders of



Cashmere or Angora Goats,

—OF—

PURE BLOOD AND ALL GRADES.

For Sale in Lots to Suit Purchasers.

Including a Choice Lot Imported by A. EUTYCHIDES, native of Angora. For particulars apply to

S. P. THOMAS, Sacramento, Cal.

—OR—

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8v1-3m

LANDRUM & RODGERS,

IMPORTERS AND DEALERS IN



Cotswold Sheep and Angora Goats.



A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

JUST ARRIVED!

Eighty-five head of Choice, Pure Bred Angora Goats—47 Bucks and 38 Ewes—the largest importation ever made to this coast, mostly from the flock of Richard Peters, of Atlanta, Ga. A pamphlet, with particulars, furnished to breeders on application.

Address **LANDRUM & RODGERS,**
2v4-3m Watsonville, Santa Cruz Co., Cal.

TO SHEEP BREEDERS!

And all such as are interested in raising FINE STOCK, attention is invited to the flock of Severance & Peet, consisting of

80 Thoroughbred Spanish Merino Rams, and 200 Yearling and two-year old Ewes,

Just imported from Addison County, Vermont. These Sheep were all selected from noted flocks by one who has bred this variety of Sheep for fifteen years, and are superior in the combination of qualities that go to make up a perfect Sheep. A portion of this flock will be offered for sale on reasonable terms.

NOW IS THE TIME TO BUY.

As this variety is rapidly advancing in the East. May be seen and examined at the CITY GARDENS, corner of South and Center streets, Stockton, Cal.

11v4tf **SEVERANCE & PEET.**

THOS. BUTTERFIELD & SON,

Breeders and Importers of the

Cotswold, Lincoln, Leicester,

Texel and South Down

SHEEP.

ALSO, THE ANGORA COAT.
Now offer for sale the Pure Bred and High Grades We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

THOS. BUTTERFIELD & SON,
3v4-10t Hollister, Monterey County, Cal.

FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed.

Seventy-five head of the Silesian Sheep have arrived and are for sale by

ROBERT BECK, Sacramento.

WATT & MCLENNAN,
WOOL COMMISSION MERCHANTS,

625 Sansons street, corner Jackson, SAN FRANCISCO.



Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies.

10v3-3m

For Sale.

ALDERNEY HALF-BREDS,

Sired by S. Mailard's Imported Bulls, "Emperor Billy," Etc.

14 Yearlings.

9 this year Calves.

Apply to

FELIX FABER,
White Ranch, Narcassio District, San Rafael, Cal.

STATE FAIR FOR 1872,

AT SACRAMENTO,

COMMENCING

On Thursday - - - the 19th,

AND CLOSING

On Friday, - - the 27th of September.

\$40,000

To be Distributed in Cash Premiums!

Exhibition to be divided into seven departments, and the SOCIETY'S GOLD MEDAL awarded to the most meritorious exhibition in each department.

THE LARGEST STOCK SHOW

Ever had on the Pacific Coast.

THE MOST ATTRACTIVE SPEED PROGRAMME

Ever offered in the Union.

The First Annual Exhibition of the California Wine Growers' Association to be held at the same time and place.

A GRAND PLOWING MATCH

To come off on the grounds.

A GRAND REGATTA ON THE RIVER,

In which eight or ten boats will participate.

A public sale of Thoroughbred Stock at the Park each day of the Fair.

The Central Pacific Company's railroads and steamers will carry all articles to and from the Fair FREE OF CHARGE.

Wells, Fargo & Co.'s Express will deliver all packages FREE not weighing over 20 pounds.

Applications for Stalls at the Park and space at the Pavilion should be made to ROBERT BECK, Recording Secretary, at once.

Memberships, \$5. Single Admission, 50 cents.

C. F. REED, President.

ROBERT BECK, Secretary.

6v4-1d

THE OLD Maple Leaf Nursery.

Has constant varieties of ORNAMENTAL TREES, GREEN and SHRUBS; also a large assortment of Choice Green House Plants, Flowering and Bulbs, and Flower Seeds of all kinds, are for sale by

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

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MACEDON NURSERIES.

I will send, post paid, warranted to arrive in good order:

1 year Plum and Pear Trees, Roses and Shrubs, \$25 per C.
1 year Apples, Peach and Orange Quince, \$15 per C.
Raspberry and Blackberry Plants, 6 varieties, \$2 per C.
Strawberry Plants, 0 varieties, \$1 per C; \$3 to \$4 per M, by express; Giant Asparagus and Honey Locust Hedge, \$1 per C, \$3 to \$4 per M, by express. Larger quantities and older trees proportionately low.
Send for Catalogue. **J. B. JONES,**
9v4-3m Macedon, Wayne Co., N. Y.

H. K. CUMMINGS.
1858.

J. M. MAXWELL.
1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer.

4v23-1y

Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 542, Corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim.

12v3tf

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

WIESTER & CO.,

3v4-3m

17 New Montgomery street, S. F.

LIST OF PREMIUMS

ON WINE, BRANDY, GRAPES, ETC.,

As agreed upon by the Board of Directors of the

California Vine-Growers and Wine and Brandy Association.

Brandy.

Best grape brandy, vintage 1871..... \$25
Best grape brandy, vintage 1870..... 25
Best grape brandy, vintage 1869..... 25
Best grape brandy, vintage 1868..... 25
Best grape brandy, vintage 1867 or older..... Diploma.

Dry Wines.

Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Sweet Wines.

Best white wine, vintage 1871..... \$25
Best white wine, vintage 1870..... 25
Best white wine, vintage 1869..... 25
Best white wine, vintage 1868..... 25
Best white wine, vintage 1867 or older..... Diploma.
Best red wine, vintage 1871..... 25
Best red wine, vintage 1870..... 25
Best red wine, vintage 1869..... 25
Best red wine, vintage 1868..... 25
Best red wine, vintage 1867 or older..... Diploma.

Special Wines.

Best California port wine, vintage 1871..... \$25
Best California port wine, vintage 1870..... 25
Best Cal. port wine, vintage 1869 or older..... Diploma.
Best California sherry wine, vintage 1871..... 25
Best California sherry wine, vintage 1870..... 25
Best Cal. sherry wine, vintage 1869, or older..... Diploma.
Best California sparkling wine, vintage 1871..... 25
Best California sparkling wine, vintage 1870..... 25
Best California sparkling wine, vintage 1869 or older..... Diploma.
Best California Angelica wine, vintage 1871..... 25
Best California Angelica wine, vintage 1870..... 25
Best California Angelica wine, vintage 1869 or older..... Diploma.

Miscellaneous.

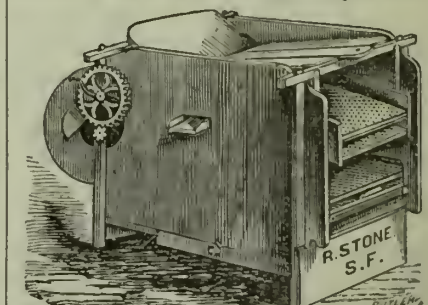
Best samples of grape syrup, not less than one gallon..... \$20
Best sample of grape sugar, not less than five pounds..... 20
Best twenty-five pounds of raisins..... 50
Best still..... 50
Best grape crusher and separator..... 50
Best and cheapest tank, cask or butt for wine or brandy for storage..... 50

Grapes.

Best twelve varieties of the table grapes, not less than three bunches each..... \$25
Best six varieties of table grapes, not less than three bunches each..... 20
Best three varieties of table grapes, not less than three bunches each..... 15
Best two varieties of table grapes, not less than three bunches each..... 10
Best one variety of table grapes, not less than three bunches each..... 20
Best twelve varieties of wine grapes, not less than three bunches each..... 25
Best six varieties of wine grapes, not less than three bunches each..... 20
Best three varieties of wine grapes, not less than three bunches each..... 15
Best two varieties of wine grapes, not less than three bunches each..... 10
Best one variety of wine grapes, not less than three bunches each..... 10
Best variety of raisin grapes..... 20
Best and greatest variety of grapes, not less than three bunches each..... 60
Second best and greatest variety of grapes, not less than three bunches each..... 40

The above list of premiums, together with the Rules and Regulations which have been adopted by the Association, will be published in a pamphlet form for free circulation on application to the Secretary, I. N. Hoag.

THE PATENT Novelty Mill and Grain Separator



Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to **R. STONE,**
1v4-3m 422 Battery street, San Francisco.

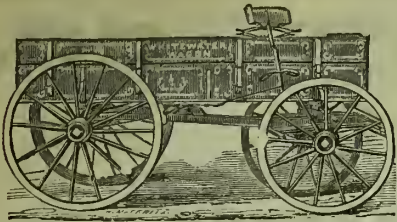
Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine.
Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address S. WYNEKOP & CO. 2054, Ridge Avenue, or P. O. Box 2726, Philadelphia, Pa. 22v3-3m



PRICES:

Thimble Skein, 3 inch, \$100; 3 1/4 inch, \$105; 3 1/2 inch, \$110; 3 3/4 inch, \$115; 4 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yoke and stay chains.

Box Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.

We invite the attention of buyers to the superior workmanship and finish of these justly celebrated Wagons. They are known throughout the West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective it will be replaced without charge. We claim by actual test a SAVING OF FIFTEEN PER CENT. IN DRAFT over any other Wagon offered for sale. This ease of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves."

Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the best Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturers of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.

We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Rack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the spring seat 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY SEASONED HICKORY.

If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

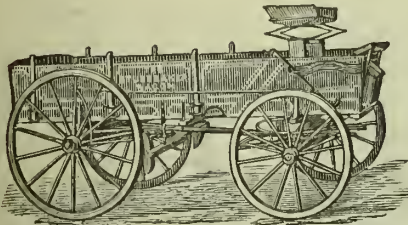
TREADWELL & CO.,

San Francisco,

2v4t

General Agents for the Pacific States.

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,

DURABILITY,

LIGHT RUNNING,

GOOD PROPORTION,

AND EXCELLENT STYLE,

They Have no Peer.

IRON AXLE,

THIMBLE SKEIN,

HEADER AND

SPRING WAGON,

Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed,

As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested.

Send for CIRCULAR and PRICE LIST.

16v3-3m E. E. AMES, General Agent.

Factory and Depot, 217 and 219 K Street, SACRAMENTO.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

San Quentin, Cal.

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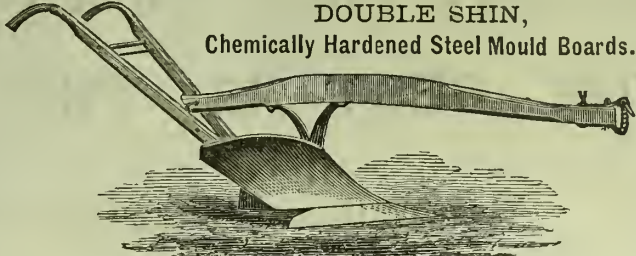
THE "JONES" PLOW.

Manufactured by the Naperville Agricultural Works, Naperville, Illinois.

First they are unlike other Plows—Because they completely pulverize the soil, and run perfectly true. Because—They all have Adjustable Beams, and CAN BE USED BY EITHER TWO OR THREE HORSES. Because—THEY SCOUR WHERE ALL OTHERS FAIL. Because—THEY DO TWO KINDS OF WORK, thus saving to the farmer ONE PLOW.

Because—They are the lightest draft plow made, and will not kill your horses. Because every plow is warranted and can be tried, and if it fails may be returned. Because they are honestly made, and will wear one third longer than the best quality of Lumber. They are HARDENED ALL THROUGH (not case-hardened, or merely hardened on the surface,) but by the use of CHEMICALS KNOWN ONLY TO OURSELVES, we refine the steel and MAKE EVERY MOULD BOARD CLEAR THROUGH AS HARD AS FLINT.

The Jones Plow completely refutes the old notion that no plow can work equally well in stubble or sod. We warrant them to do it in every instance. No matter if every other plow manufacturer has failed to make such a plow. We have succeeded. Let true merit decide; if you have any doubt, TRY THEM—WITH YOUR FAVORITE, and keep the one you like best.



DOUBLE SHIN,
Chemically Hardened Steel Mould Boards.

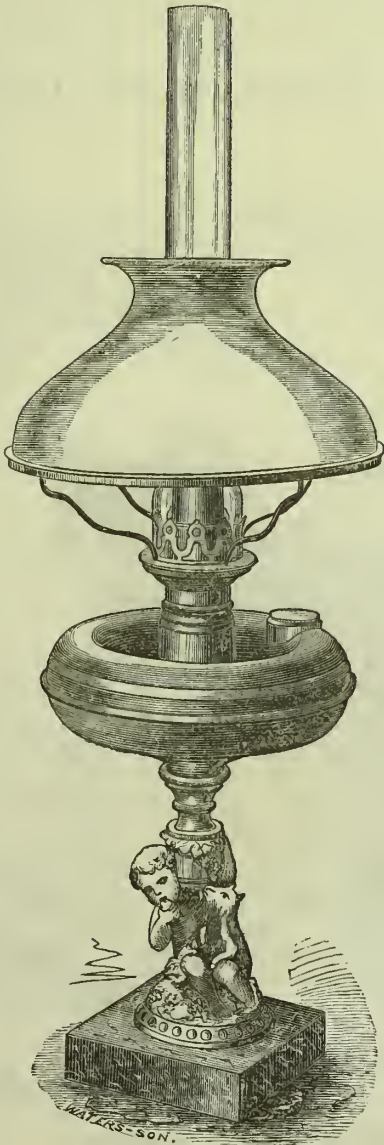
the common run of plows. Because they ARE VICTORIOUS OVER ALL OTHERS in the various plowing trials in which they have been used. Only the best class of material is used in them—the finest grade of steel.

TREADWELL & CO.,

Sole Agents for the Pacific Coast, San Francisco.

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be blown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

State and County Rights for Sale. Agents Wanted.

The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

I. L. MERRELL,

Nos. 10 and 12 Third Street, San Francisco.

Attention, Owners of Horses.



The ZINO COLLAR PAD is guaranteed to cure the worst case of raw and inflamed sore neck in Ten Days, and work the Horse every day, or money refunded; and will not chafe or wear the mane off of the neck. For sale by Saddlery, Hardware Establishments and Harness Makers. Manufactured by the ZINO COLLAR PAD CO., Buchanan, Michigan. 9v4-4t

M. WALTHALL and S. T. NYE

Give Exclusive Attention to

Land Matters in the Local and General Land Office, Mining Applications, Procuring Patents, and Contests before the Office, etc., etc.

Buy and Sell Agricultural College Scrip and Land Warrants.

Office in Odd Fellows' Building, near the Land Office, Stockton, Cal. Refer to Hon. S. A. Booker, Judge of the Fifth District Court, Stockton. 9v5-3m

A New Firm.

JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento. G. R. JEWELL, 16v3-3m T. B. FLINT.

WILCOX'S

IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most ECONOMICAL of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

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For the liveliest book on the West ever written,

"BUFFALO LAND"

By W. E. WEBB, the noted Pioneer and Humorist. The wealth and wildness, mysteries and marvels of the mighty Plains fully and truthfully described. Overflowing with wit and humor. The Appendix a Complete Guide for Sportsmen and Emigrants. PROFUSELY AND SPLENDIDLY ILLUSTRATED. Immensely Popular, and selling beyond precedent. Send for illustrated circular, terms, etc., at once, to the Publishers,

F. DEWING & CO., 542 California street, San Francisco. 7v4-4m

Farm Wagons.



JACKSON MICHIGAN WAGONS are known to be the best FARM and TEAM Wagons sold on the PACIFIC COAST. Send for Certificates. The

JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair, Michigan, over the Studebaker and all others.

Important improvements have been made in our Wagons now arriving. Our large Two-horse and Four-horse Wagons have heavier tires, broader and deeper felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We sell gearing only, or fitted up with California Racks and Brakes, Spring Seats, etc., or with Eastern double axle bodies. Persons ordering will get Wagons at SAME PRICES as if here—WARRANTED perfect and complete in every respect. Buying strictly for cash and in large quantities (twelve car loads on the way), we are enabled to sell, Wholesale or Retail, at very Low Prices. N. B.—WARRANTED FOR THREE YEARS.

J. D. ARTHUR & SON.,

Corner California and Davis streets, SAN FRANCISCO.

6v4-1am3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,

Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale by the

SWEEPSTAKE PLOW CO.,

At SAN LEANDRO, CAL., under the personal superintendence of the Patentee, F. A. HILL,

And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



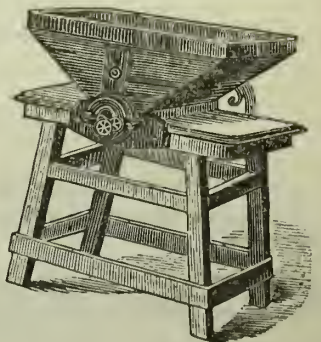
Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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FARMERS, THE BEST IS THE CHEAPEST!



SWEEPSTAKE GANG PLOW.

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The Cheapest and Best in the State.

Hill's Patent Eureka Gang Plow.



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GEM HAND SOWER,

GEM POWER SOWER,

GEM BROAD-CAST SEED SOWER.

ADVANTAGES OF THE GEM SEED SOWER:

They are very simple in construction, therefore not liable to get out of repair.

The machine throws a double or single cast, as required.

It can be used in windy weather, doing good work, when it is impossible to sow by hand.

They sow on either side of the operator, at pleasure.

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The grain is thrown out on each side, as if sown by hand. The old style machines always left a DOUBLE quantity behind the wagon. The GEM sows more evenly than by hand.

The SWEEPSTAKE PLOW CO. intend to manufacture all kinds of Agricultural Implements at the lowest possible prices for a good article. The factory is under the personal charge of Mr. Frank A. Hill, of Hill & Knaugh, Marysville, (the inventors of the celebrated Eureka Gang Plow), which is a guarantee that all work will be well done. We are also manufacturing a TUBULAR IRON HARROW, all sizes, to which we invite attention. The Trade supplied at a liberal discount. All orders will receive prompt attention. Address

SWEEPSTAKE PLOW CO., San Leandro.

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BAKER & HAMILTON, San Francisco.



Volume IV.]

SAN FRANCISCO, SATURDAY, SEPTEMBER, 28, 1872.

[Number 13.]

Tea From a New Source.

The English tea gardens extend along a line of 1,000 miles, on the foot-hills of the Himalaya Nevadas of India. The plant thrives best at Darjeeling, where snow covers it for more than two months of the year. The country was a dense jungle, the home of elephants and tigers. To get a clearing for a tea garden, costs twenty-fold the price of ready-cleared land in our foothills. The soil and climate of our mineral belts are equally adapted to tea. But, as in India, the plant must be irrigated, if you pluck its leaves; well up inside the snow-line the best qualities of tea are raised in China; and the law will hold good in our country. The failure of the Schnell plantation in El Dorado county was due to improvidence and untoward circumstances of a peculiar character.

The soil and climate proved to be all right. But the Japanese labor-contracts were broken, and the waters of irrigation were charged with iron and sulphur, which killed the young tea plants. The proprietor was involved in financial troubles and lost his property, through failure of remittances from Japan, to which country he returned. The experiment, however, settled the question in the affirmative. Can we raise our own tea in California? We can do on the foothills of our Nevadas, all that English enterprise has done and is doing, on the same kind of foothills of the snowy Himalayas.

Twenty millions of pounds of teas, superior far to China, were shipped in 1871 to London; giving attestation of most brilliant success. The teas of India bear higher prices than those of China; and this is probably the reason why none has been shipped to the American market. Assam is a country 1,000 miles away to the eastward of the region we have been describing. Tea has been raised there for 20 years past; and now its production is very large, though, owing to peculiar circumstances, the public traces no record of the quantity. Tea is grown there, on the hot and humid banks of Brahmapootra, a tributary of the Ganges. It is therefore rank and niggery. It is unfit for beverage. But it fetches the highest prices for all that! The English market is full of spurious teas, home-made and foreign, that never came from the tea plant. They are chiefly for adulteration. But an ounce of Assam mixed with a pound of Spurio, gives it a flavor that greatly promotes its value. Hence its price. It is bought only by grocers, who use it solely for doctoring. It is never for sale to the public. Labor is cheap in India. In this respect California has disadvantages.

The only way to overcome it, is to encourage co-operative Associations among the Chinese, after the fashion that has necessitated the farming out of the strawberry beds of Santa Clara. It is not the farming that costs, American device can overcome that, but the leaves require hand-picking and careful selection. New sources of irrigation must also be found. The mining waters of our ditch-system will not answer. They deposit a ring of metal around the young plants, that throttles them beyond recovery.

Thus we have the whole story of our disadvantages. And after all, the fact remains patent, that our soil and climate are adapted to tea growing, and American ingenuity has overcome more obstacles than stand in our way to achieving success in raising tea for Home Consumption.

OLIVES.—The yield of olives this year, at the San Diego Mission, will hardly equal that of last season, but the fruit is of a fine quality, the olives being very large and plump. A quantity of oil will be made, and as last year, a considerable lot will be pickled for home sale and for exportation.

Ball's Endless Chain Elevator.

We give herewith an illustration of a new and valuable device for the purpose of drawing water from wells. It consists of an endless chain arranged for carrying one or more buckets, and discharges automatically. The peculiarity of the present invention, which is an

the two chains just above each bucket, and a link has one end pivoted to each side of each bucket by a rod which passes across inside the bucket; the opposite end of the link being connected with the curved advance rod, as shown. By this means the upper portion of the bucket as it nears the top and in turning the pulley, is made to swing out from the curve of the

bucket in the proper position until it is discharged, is extremely simple and effective.

For ordinary use two buckets are employed, one to be filled while the other is being discharged, and they are so hung as to balance each other on the chain, so that all the expenditure of force required is simply that needed to raise the water alone, which may be in the bucket.

Where water is required merely for household purposes, it is claimed that no device for raising it from wells can excel this. The water in the well is kept pure and sweet and thoroughly aerated from being frequently agitated from the surface to the bottom, and by its being taken from near the bottom, is always cool. The apparatus is easily moved from one well to another, is simple and but little liable to get out of order. These elevators are manufactured and sold by Ball & Crary, at St. Louis, Mo., and at Oakland, Cal. Patented through the SCIENTIFIC PRESS PATENT AGENCY.

The State Fair at Sacramento.

Owing to our attention at the State Farmers' Club Convention we are not able to report much in season for this week's issue, which goes to press Wednesday evening.

We came up on the steamer S. M. Whipple, with about 150 quietly disposed passengers, and a larger number of sports and hoodlums. Gambling was carried on in at least four different parts of the boat in day time, and openly in the evening. If there is no manner of holding the proprietor of a steamer responsible for such violations of law and good order, a new statute should be made to check such barefaced operations at this late day of the Christian era. Gambling is supposed to be free, also, in Sacramento, this year, the Supervisors having voted to give these boys a chance without the restrictions of law, which have been merely blinked at before. Although we observe no more gambling than formerly (if it were possible) we hardly think the enterprising citizens of Sacramento generally, endorse such action as has a tendency at least to make gambling less odious in the community.

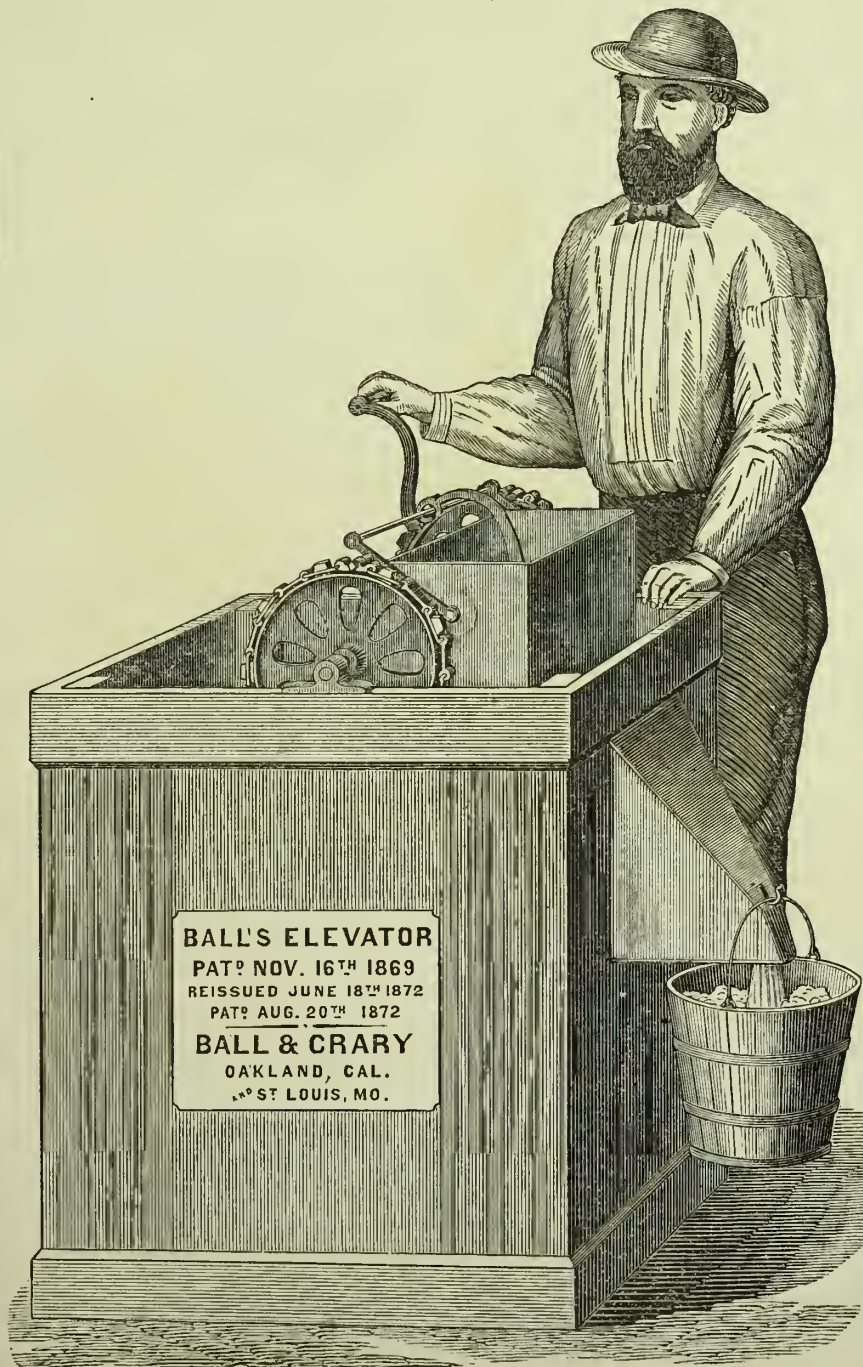
All that we said last week about the show of animals is more than verified, and viewers of stock at our own and other State fairs, declare it the finest exhibition they have ever seen.

Things have come slowly into the fair building. The upper hall is now comfortably filled. The display of fruit is superb. That of grapes and wine the largest yet made. As we have had no Mechanics' fair at S. F. this year, the paintings, photographs and other art exhibitions appear fresher and more decidedly original. In fact the whole exhibition seems composed more generally of new articles, better and more attractively and conveniently arranged than at former fairs.

The officers of the Society and superintendents of the hall are active in doing their best to accommodate.

MERCED COUNTY.—This county lying in the very heart of the great San Joaquin valley, has this year produced nearly or quite four million bushels of wheat; and yet there are thousands of acres of good wheat lands that have never yet been plowed. Just the place for immigrants to make their selections at reasonable rates.

HEAVY YIELD.—Mr. Canfield, who resides near San Juan, in Monterey county, has a farm which produced the last season fifty bushels of wheat and eighty of barley to the acre. It is asserted that there are plenty of lands to be had at reasonable rates in the same county which will do equally well.



improvement on a patent previously granted to the same inventor, relates to the device for automatically discharging the load after it has been raised to the top of the well. Two chains are employed, as shown, one on either side of the bucket, which are held in place by, and pass over a set of pulleys at both the top and near the bottom of the well. The buckets are made rectangular in form, as shown.

At each side of the buckets and below their middle, is a journal or trunnion, which is secured to one of the links of each chain, and upon which the buckets swing in their movement around the pulleys. A rod connects

chain and rise in a perpendicular position, and is so held until it has discharged its load, which is also done automatically, the curved rod acting as an arm to hold the bucket in its perpendicular position, and as a lever to open the discharge valve in the bottom of the bucket, through which the water escapes to a spout and is conducted, as shown, to any desired receptacle, the operator merely resting and holding the crank while the bucket is discharged. After being emptied of its load, the bucket proceeds on its way over the pulley to the bottom of the well to be again filled. This device for operating the valve and holding the

CORRESPONDENCE.

Marin County.

We have a perambulating correspondent who is taking a general look at things and reporting his opinion of the same for the columns of the *RURAL*. In speaking of Tomales and its surroundings he says: At this place we find—gently rolling land well adapted to mixed farming. There are some practices carried on among farmers here which we consider very mixed. The "skin and run policy," for instance, reminds us of the days we read of when they caught cattle with the lariat and killed them only for their hides and tallow. We find many here who have farmed this splendid soil for ten or fifteen years and now pronounce it worn out and are bound to sell or give up their lease and go to the lower country.

What About this Worn Out Land?

We began to enquire of those whose homes showed thrift. It was an interesting question to us who had seen land that has been farmed for eighty years constantly growing better. Is it the soil? the climate? or the crops? Is it a chemical or mechanical fault of the soil?

Mr. Hubbell's Answer

Was that he had 45 acres of this old worn out land that would not produce more than half a crop. He left it in grass for three years and then plowed it up in connection with five acres of new land adjoining. On the field he raised two crops of wheat and one of potatoes and was accustomed while the crops were growing to take his neighbors down to see where the line was between the worn out land and the new. They all failed to find it and he could not tell from the crop.

His Theory

Is that the land becomes so compact by constant plowing that the air and moisture do not have a chance to circulate freely through the soil. By seeding it down the roots of the grass penetrated the ground in every direction and as they decay leave minute holes all through the soil.

This accords very well with the experience of some good farmers east who say that the benefit derived from plowing in clover is quite as much from the loosening of the soil as from the chemical addition of the clover.

Another Theory

Advanced is that it has been the practice to put in just as many acres as possible with a limited amount of help and thus begin plowing the land when too wet.

The rains coming afterwards would penetrate as far as the ground had been loosened and form there a sort of hard pan upon which the horses often alip down at the next plowing.

This soil is well calculated to be injured by wet plowing as it is an aa adobe with a subsoil that holds water down two or three feet. These theories agree in that, both ascribe the difficulty to the compact nature of the soil.

Another Trouble

Is laid to the account of the sorrel which is accused of penetrating three or four feet into the ground and taking thorough possession of the land unless war is waged to the bitter death. Mr. McCausland thinks that it can be destroyed with lime at an expense of about \$25 per acre. It is a serious question to what extent this will pay.

It is suggested that plaster may be beneficial. This can be had in San Francisco at \$15 per ton and might be had much cheaper if the parties who control the supply would advertise and so increase a demand which would warrant them in making a business of it.

Mesquite Grass

Seems to thrive well where it has been tried and to offer the readiest solution of both the difficulties referred to. If the land is so thoroughly cultivated one season as to keep down the tops of the sorrel it will not get another start until the roots have had time to throw up sprouts from below where the cultivation extended.

If well seeded with mesquite before the rains it is to be hoped that the very fine roots of the grass will take possession of the ground so soon as to choke out the sorrel. We have seen no other grass which seemed better adapted to pulverize the surface of the soil. Alfalfa or any of the clover family would penetrate deeper but experiment is the best test of what is needed. A. Hubbell, Mr. Osborne and Capt. Allen all have mesquite grass seed which we presume they would sell.

Shaker Russetts

Are a kind of potatoes that Mr. Hubbell has been trying much to his satisfaction. They are a month earlier than the Mission, keep better, yield as well, are larger and a very fine eating potato as we can testify. He estimates the average profit from a potato crop at \$20 per acre and in proof of this his property has increased at an average rate of \$2,000 per year besides supporting his family since he has been on the place.

We are always afraid that figures lie when

we find those, engaged in business which figures up a fine profit, working hard and growing poor.

Short Crops

Are all the talk in Marin county. Grain only a third of a crop, potatoes looking fair so far but few planted. Men are offering to sell below the assessment. Seven thousand calves raised in the county this year represent the surplus stock of the county. There is just so much to spare.

Trees of the cottonwood, Australian gum and other quick growing varieties are being planted along the fences and in the gulches washed out by freshets. But the school house stands, all treeless and cheerless on the hill side. We hope to visit the hospitable people of Marin again some day and to find trees for fruit, trees for ornament, trees for shade and trees for timber.

Santa Barbara County.

EDS. PRESS:—It is probable that the sulphur springs of Santa Barbara are nearly the same as far as temperature and the mineral impregnations are concerned, as hundreds of other thermal ebullitions—scattered over the world. Water for the bath can be obtained at all temperatures here, from 75° to 118°, but that this mode of depletion is any less objectionable than many others in use, is an open question. However, as people will continue to deplete and elevate the vital forces beyond what is good, the hot sulphur bath may be a temporary indulgence of the less objectionable order, and is no doubt a means of removing the effects of former mineral treatment, in some cases. The white sulphur is deposited in a crust upon the rocks in the strongest of these springs, and the effluvia is nearly as strong as—whew! could anything be more delightful?

But in the vicinity of this par-boiling luxury, is a stream of nearly pure mountain water, affording, say twenty inches miner's measure (I was particular in measuring it, with a view to utilizing the power to grind wheat) that if it were not already corralled, would give a revitalizing medium that would be sufficient for the use of thousands of people; and prevent or cure an unlimited number of diseases.

Find a Beautiful Place.

Leaving the White Sulphur Hot Springs, a perilous ride of a mile and a half down the canon brings us out upon the highest slope, which is susceptible of cultivation and, at the residence of Mr. Bond, who has fifty acres tastefully laid out in garden,—walk and drive—with a choice selection of semi-tropical plants, shrubs and trees, together with some bearing vines, the fruit of which fully comes up to any yet tasted in Southern California.

All this Montecito Slope is adapted peculiarly to the vine, (the big grape vine is in this vicinity), and the orange looks thrifty in some places. As far as examined, this section appears preferable for invalids, to any portion of the county, and evidently the whole area, (say two miles by five), will be required as a sanitary resort.

Now we will bowl along westward for twenty miles upon the continually narrowing plateau between the ocean and mountains—toward Point Conception. This old road reminds one of being at sea; the waves and breakers threaten to demolish any wheel craft that has not a careful hand at the helm, for it necessarily crosses innumerable gulches and ravines.

A California Lion.

Your correspondent, in the zealous pursuit of information, ascended one of the canons, having been informed that there was a thrifty vineyard hidden among the hills; but a five-mile drive over boulders and among the chaparral, failed to develop anything remarkable, except a California lion that was quietly devouring a colt that had become entangled by his lariat among thick shrubbery. I have the hair rope that held the poor beast, but as I was alone and unprepared to bring lions, the devourer was allowed to go his way.

It became dark immediately, a bivouac for the night in the vicinity was necessary, and we laid down with the expectation of dreams of "Daniels" in unpleasant alcoves, but the slumber was undisturbed. All this stretch is covered with Spanish granta, yet a few Americans have introduced themselves into the choice locations and are making their presence known by the usual improvements and adornments.

A Weird Spectre.

As the traveler approaches the Gaviola Pass the space between the mountains and the sea is so narrow that there is very little room for more than the highway; and this, now turns into a gorge or rift in the sand-stone formation that is barely practicable for a wagon road, but is wholly impracticable for railway purposes.

While ascending this pass one is reminded of the stories of Robin Hood or the "Forty Thieves" by the dark glens and caverns which appear, and to make the picture more real and life like, a weird spectre with a torch and a bucket must cross the road just before—and enter one of the caverns—this proved, however, to be simply a road repairer who for convenience had encamped there for the time. So we let the hammer down carefully and put away the harmless weapon.

An Old Mission House.

In this Pass one enters upon some of the most varied and beautiful scenery imaginable.

As the traveler passes from the dark, rocky gorge, with its sombre shadows and overhanging foliage, out upon the golden oat hills, thickly studded by their emerald settings, a feast awaits the eye that can appreciate. Winding in a zig-zag that is little better than a trail in many places, a drive of ten miles from Las Cruces, where Mr. Williams has a wheat ranch of two leagues, brings us in sight of the old Mission of Santa Ynez, the crumbling colonnade and towers of which throw a shade of sadness over the mud, and is food for reflection. Those must have been comparatively halcyon days when the patient Fathers had gathered their dark children in comfortable subservency to faith and utility. One can but imagine that it presented a pleasant picture as compared with the now ruined and deserted pile.

An Educational Institute.

Three miles from the old Mission is the College of Our Lady of Guadalupe, situated in a gently-undulating country, surrounded by scattered oaks, and having a general air of quiet, so well adapted to study. It is, without doubt, the best location for a school (as it is the oldest educational establishment on this Coast) imaginable; with an almost perfect climate; a fine stream of water, good land for gardens, and fields in which to exercise the pupils in horticultural or agricultural lore. If the Fathers do not make a first-class educational institute here they will fail of their usual foresight and acumen. Capt. Thomas W. Moore is the lessee of the College lands,—some 30,000 acres,—and has yet ten years occupancy, in which time he may, by care, make, off the grazing, a competence; but the business, even in this favored locality, has not always paid. For in the past great drouth all the stock perished, and the ranch had to be restocked. The evidence of mortality is visible in cow-head land, just before coming to the Mission, where the fence is partially constructed of skulls and horns, proves the terrible destruction of animal life that must have prevailed.

F. M. S.

WOOL AND SHEEP.

Mohair Market.

EDITORS *RURAL PRESS*:—Your communication of Aug. 29th came to hand. You enquire the names of brokers in New York, who buy Angora goat's wool. In March, 1870 I was in New York, expressly to enquire about Angora goats and their wool, and when there, I saw several brokers. (Without taking any notice of their names or addresses to preserve) who informed me that there was no Angora goat's wool in America worthy of notice. Only now and then a few hundred pounds found its way to their hands which they bought and sent to England, so that I can give you no precise name and address of any particular broker.

A. EUTYCHIDES.

Spout Springs, Va., Sept. 11th, 1872.

In a letter from Mr. Eutycheidea to Capt. S. Wing of Napa and published in the *RURAL* of Sept. 14th, he says: "I am astonished at the demand for their wool in this country; there is demand for it all over the world."

Any wool broker will buy mohair in New York, at any time, for exporting to England, and brokers in New York will pay 75 to 80 cents per pound for it; they ship it to England and get a profit from 18 to 20 per cent."

In answer to our direct letter of inquiry, we received the answer at the head of our article. By putting "this and that" together, it looks a good deal as though somebody had an "ax to grind," or full blooded (?) Angora goats to sell, and was looking to California for purchasers. In fact Mr. Eutycheidea offers any number of "Cashmere or Angora goats, pure bred and choice, guaranteed at \$125 each." And in this he so far undersells our own reliable goat breeders, as to put them quite in the shade.

Let Them Blow.

Now there are certain papers that will "blow" away at the *RURAL* for what they will call its discouragement to the growing of mohair in California. The *RURAL* does no such thing. We believe the time will arrive when California will be the best mohair producing country in the world outside of Asia and that there will be a market at our doors for the raw product as soon as a considerable quantity is produced.

But when we hear an Eastern goat breeder who has a large flock of Angora goats that he wants to sell badly, say that he is "astonished at the demand for their wool in this country," and that "there is demand for mohair all over the world," and that "any wool broker will buy mohair in New York at any time" and has been there on purpose to see them, and then when asked to name the parties, is unable to do so, it certainly becomes the good sense of our mohair growers to look around and see where their market is coming from, or where they can find it by going for it. That we can grow mohair there is no question; but having

grown it even in small quantities we want to sell it.

We would be pleased to learn from any source the name of any broker in America who will buy or make reasonable advances on mohair, and on obtaining it will lose no time in giving the information to the patrons of the *RURAL*.

Tobacco Dip for Sheep.

EDS. PRESS:—In your paper of August 31st, your correspondent, Mr. F. M. Shaw, speaks of an improved mode of dipping sheep, in practice on the ranch of Mr. Burnett. Will your correspondent have the goodness to give a more specific description of the same, stating width, depth and length of the vat, material used, and arrangement for dipping and draining, and operation of dip. Perhaps the foreman on Mr. Burnett's ranch will give the necessary information, or others of your correspondents will give their experience, and oblige a subscriber and

SHEEP-MAN.

In our issue of Nov. 4th, 1871, we gave the experience of T. McConnel, of Elk Grove, Sacramento county, in regard to the use of tobacco for scab in sheep, and in consideration of our largely increased list of subscribers, to some of whom it may be of interest, we condense and repeat the account of the process.

After shearing, he immerses the sheep affected, in a solution made of from 500 to 600 lbs. of refuse tobacco, or the stems of leaves—obtained from cigar makers at from four to six cents per pound—steeped and kept about as hot as the hands can bear. To this he adds 75 pounds of sal-soda.

It is placed in a vat, the vat being placed in an excavation in the earth, and is about 16 inches wide—a little more than the width of a good-sized sheep—and four feet deep at the end where the sheep are plunged in. Then a level bottom extends some 20 feet, when it gradually rises for a distance of 24 feet, widening out into a platform of suitable size for the animals to drain on, the drainage returning to the vat.

In about ten days he repeats the process and then turns his sheep into a new range, and they are troubled no more with the scab.

It will be observed in the foregoing that no definite amount of water is given as the proper quantity for the other ingredients. In the absence of it, we must suppose that to the other ingredients—tobacco and sal-soda—enough water should be used to cover the sheep's back in a tank of the size designated.

We can hardly see, however, the necessity of having 20 feet in length on a level, as the sheep, on being fully submerged would be thoroughly wet, or if not could be held back for a moment and then allowed to ascend the incline.

We would be pleased to hear from sheep growers on the subject of the cure of scab in sheep.

The Record of a Flock of Merinos.

E. J. Hiatt & Bros., of Chester Hill, Ohio, write this to the *Live Stock Journal*:

"There is quite an interest manifested in the growing of fine wool in this part of Ohio, the Merino being better adapted to our hilly country than other breeds. Most farmers are convinced of the great need of improving their flocks as their land increases in value. Thoroughbred stock must necessarily take the place of the inferior mixed breeds that have formerly been kept. We are aware that there are a few farmers in almost every community that are not convinced of the increased profit attending the keeping of improved stock. A few facts may therefore be of interest to your readers, showing some of the profits."

"The first week in May, 1872, we clipped from 80 head of American Merino sheep, consisting of 20 bucks and 60 ewes, 1,080 pounds of wool, the greater part being unwashed, which sold for \$536.80, averaging \$6.81 to the fleece—the heaviest ewe's fleece bringing \$9.67½, and the heaviest buck's fleece \$10.91½. Seventeen of these ewes were weighed Feb. 20th, and averaged 120½ lbs.; three bucks weighed 154 lbs. each; six buck lambs, less than one year old, weighed, at the same time, 107 lbs. each."

A Satisfactory Yield of Wool.

"J. A. Gifford, Esq., Round Grove, Wisconsin, who owns a small but very select herd of Merinos, which we have often heard spoken of by gentlemen who have seen it, and which he purchased years ago when prices were low and Merinos in such disfavor that many persons were ashamed to let their neighbors know they had them on their farms, sends an item concerning the clip of his flock this season. His flock consists of 58 head, and the yield of washed wool was 592 lbs.—an average of nearly 10½ lbs. The fleeces were not weighed separately, or at any rate the separate weights were not given, but Mr. G. states that the fleece of one yearling weighed 12½ lbs., and the fleece of one ewe 13½ lbs. There are six rams in the flock, and the remainder ewes and wethers, in a proportion not stated."

The Coming Centennial Anniversary.

The Executive Committee of the United States Centennial Commission, held a meeting in Philadelphia on the 29th of August, for the purpose of consulting with various committees from the City Council of Philadelphia, the various Boards of Trade and Exchange, the Franklin Institute, etc., also newspaper editors, members of Congress, merchants and others, upon the best methods for promoting the success of the approaching Centennial Anniversary Celebration. The meeting was a large one, and much interest was manifested in the objects of the same. Several short speeches were made upon the importance of the object in view, and the necessity of a united effort to make the celebration one which shall be worthy of the day and the occasion.

By Act of Congress, approved June 1st, 1872, it is provided that books of subscription may be opened and an opportunity given for a period of 100 days therefrom for the citizens of the different States and territories to subscribe to the exhibition stock in proportion to their respective populations—the total amount of stock being fixed at \$10,000,000. A blank form of certificates of stock agreed upon, provisions made for opening the books at an early day, under the direction of agents to be appointed for each of the several States and territories. Due notice of the appointment of agents, etc., will be given.

The probability is that the enthusiasm which will be connected with this event will not only make it the grandest World's Exhibition that has ever been witnessed; but that it will also be a financial success, returning to stockholders the principal which they may invest, with interest. The Commissioners have done and are doing well, and deserve the co-operation of every American citizen. It is well and fitting that the first centennial of our national anniversary should be held in the city and within the shadow of the spires whose bells first rang out the joyful peal of liberty to all the world and freedom to all mankind everywhere, irrespective of creed, color or country.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention:

IMPROVEMENT IN SLAG POTS.—Robert A. Fisher, Eureka, Nevada. This invention relates to an improvement in that class of pots used about smelting furnaces which are known as slag pots. These pots are used for receiving the slag as it comes from the furnace and are consequently subjected to an extremely high temperature, by which the iron is suddenly expanded, rendering them liable to crack or break, and frequently they are broken from other causes. The expense of these pots is quite an item where large smelting works are conducted on account of this breakage.

This invention consists in constructing these slag pots in sections, and then uniting the section by proper means so that in case one of them should become cracked or broken, it can readily be replaced by a new one at a comparatively small expense. Any number of sections may be used, but ordinarily three will be sufficient, and they are united by means of lugs or projections through which a bolt or pin is passed, or they may be clamped together in any suitable manner.

IMPROVEMENT IN SLAG SPOUTS.—Robert A. Fisher, Eureka, Nevada. Heretofore the slag as it runs from smelting furnaces has been allowed to pass directly over the surface of the spout, which is attached to the breast plate of the furnace. After a time, this spout becomes so much corroded or eaten away by the molten slag, as to become useless and requires to be replaced by a new one. This replacing necessitates the stoppage of the flow of slag, and this causes an accumulation in the furnace, and great inconvenience in consequence.

This invention is intended to avoid the difficulty by employing a lining of suitable material which rests upon the bottom of the spout and protects it. This lining is easily removable after it becomes corroded, and may be replaced by a new one in a very short time, and with no serious stoppage.

TUYERE TESTER.—Robert A. Fisher, Eureka, Nevada. The water tuyeres employed in blast furnaces are often imperfectly constructed and commence to leak soon after being put in. This leakage reduces the temperature of the furnace and causes loss, and can only be determined by stopping the furnace and withdrawing the tuyere. This invention provides a remedy by introducing a branch discharge pipe, with suitable cocks. The upper part of the branch pipe may be made of glass, and is open.

Water ordinarily passing through the tuyere will pass through the usual pipes, but when it is desired to ascertain whether there is leakage or not, the usual outlet pipe is closed until the water rises to the top of the glass tube. The inlet pipe is then closed, and if there is no leakage, the expansion of the water by heat will cause an overflow, but if the tuyere leaks, the water will gradually fall in the tube.

BED-BUG EXTERMINATOR.—Elizabeth Hooper, Diamond Springs, Cal. In all warm climates as in the interior of this State, vermin accumulates rapidly, and are with difficulty destroyed. The invention here mentioned is a compound which is peculiarly efficacious for the destruction of bed-bugs, and is intended simply to be applied wherever they exist.

BAGATELLE TABLE.—William Evans, San Francisco, Cal. This invention is an improved device for playing games, and consists of a table similar to an ordinary billiard table. A short cylinder or wheel is mounted on a vertical spindle at one end of the table. A series of sliding plates are so arranged around the cylinder that they will be released and allowed to spring up by causing the ball to strike a plug at the base of each and projecting from the lower periphery of the cylinder. The plates are numbered and each number released, counts for game. Holes at the sides of the table near the cylinder, admit the balls to inclined numbered troughs beneath the table, and these also count for game.

HARNESS PAD.—Geo. W. Dutton, Tomales, Cal.—This invention is intended to give a harness pad, which shall fit perfectly and rest in the hollow upon each side of the withers so as not to chafe the horse, and at the same time not interfere with the other portion of the harness. The saddle is so constructed that its middle comes in the usual position of the ordinary pad, and the ends extend forward upon each side of the horse's back. A T-shaped bolt passes through near each end, its outer end being flush with the outer face of the saddle and receiving the terret. The arm upon the inner end lies parallel with the back bone of the horse, and has the pad so hinged to it that there will be no unequal strain or pressure, and by rocking, it can adjust itself to the movements of the horse.

MISCELLANEOUS.

The Locomotion of Animals.

Microscopic animals move rapidly through the water by means of little oars or *cilia*. There are creatures which are destitute of shape, and yet can form any part of themselves into stomach and digestive organs, or can temporarily assume forms which give them means of locomotion. Others throw out arms and seize their food, but yet have no specific shape when at rest.

Belonging to a higher order are the jelly-fish. These strange creatures which, while in the water, are perhaps as large as a wash-tub, if dried scarcely weigh an ounce. They do not move by means of muscles, but by cells independent of each other, which, by contraction and expansion, answer the purpose of paddles.

The star-fish is among the most curious of ocean forms, having his mouth in the center of his body, his eyes at the end of his arms, and a series of suckers, constituting locomotive appendages, thrown out from beneath the animal in the water. If the star-fish wishes to travel, he attaches these suckers to whatever is ahead on the ocean bed before him and pulls himself forward. The common fresh-water muscle has large muscles, which give motion to a long foot which it wedges into the sand, and then, by contracting the foot, draws the shell after it. There is another fresh-water shell-fish which darts out its foot with great rapidity, and as suddenly contracts it, and by this propulsion swims through the water. The scollop is an animal which swims by opening and closing its shells, forcing the water out from between them. The cuttle-fish has two broad fins behind and a series of long arms in front. It draws in water as most shell-fish do, but, unlike others, pumps it out in front so that it swims backward, though it has also, by other means, the power of swimming forward.

Worms move by means of little bristles, which stick out from the sides of the body, and are used to hold part of the body while the rest expands, or while part expands the rest contracts, and thus the worm is drawn forward in sections. This is the case with the common angle worm. Among the crustaceans, the lobster either crawls forward with his legs or jumps backward by strokes with his tail. The eyes, mounted on the end of long feelers, can look over the shoulders of the animal while he is jumping backward.

With birds, if the wings are small, they move rapidly; if large, slowly. The grasshopper has a variety of modes of locomotion, and the cheese-mite or "skipper" hops by coiling his head and tail together in a ring and pulling them suddenly apart with a snap. The locomotion of the snake is obtained by means of scales, which are thrust against the ground by motions of the ribs, actuated by powerful muscles. It results that if a snake, though capable of the most rapid movement on the ground, be put on a smooth surface, like that of glass or

varnished wood, he will wriggle with great efforts, but make no forward progress.

The variety of functions performed by the muscles of the birds and the singular shapes of their bills, adapted to their various modes of feeding, are really wonderful. The arms become the organs of flight, and the bones are bridged, and trussed, and modified so as to give the requisite power. The tendons naturally close the toes when the weight of the body rests so as to bend the leg; thus the bird rests securely on its perch. Hence, also, the fowl always shuts its toes as it lifts them, because bending the leg draws the tendons. The modification of the arm of the bat still leaves it an organ of flight.

In the lower vertebrates we have simply fins; going up step by step the functions of the arm escape the need of use for locomotion. The higher the grade of animals, the greater the power of the arm for other purposes than that of locomotion. The monkey uses the arm and hand for a great variety of other purposes, such as for feeding itself, and the female monkey holds its young to its breast by means of its arms. At last with man the arm becomes a cephalic appendage, and is no longer used for purposes of locomotion, unless, indeed, he drive a hand car. Step by step among the lower animals we may trace the improvement of organ and of function until we reach its highest development in a species where only the lower limbs are employed to carry the body, and the upper become exclusively the servants of the brain.

Transmitting Power from Motors.

Light vs. Heavy Shafting.

The following article from the *Journal of the Franklin Institute*, furnishes some valuable facts and suggestions with reference to the transmission of power by belts, with light shafting running at high speed, and also illustrates, very forcibly, the advantages of light shafting. We trust all our readers will peruse the article, as it is of more than ordinary interest and value, especially in regard to the location of water-powers in rough mountainous regions, as among the mines on this coast. The *Scientific American*, which also copies the article, says in reference to it: "It may be set down as a rule that, within reasonable limits, the lighter the shafting and the larger the pulleys employed to transmit the power of prime motors to machines, the greater will be the economy in transmission. Not only is the reduction of first cost, but there is a great reduction in friction, with less strain, and consequently less wear on the belts, and less expenditure of oil on the bearings."

In the location of mills on water-courses, it has commonly been deemed necessary to place the main building directly over the spots where the wheel-pits are unavoidably located, on some steep hillside or rocky precipice, however unfavorable the site may be for grading and for costly foundations, with dark and damp basement-rooms, unsuitable for occupancy by workmen.

One of the most important advantages derivable from the new system of transmitting power economically to a distance from water-wheels as motors is practically available in selecting a good level site for the location of a manufactory.

In carrying out the system at Georgiaville, the power has been transmitted several hundred feet from a bluff, where a fall of water of 36 feet descent was available by two successive falls of 20 and 16 feet each. To accomplish this task with the massive shafts and couplings then in use (1852) appeared to be too costly, and difficult of execution with satisfactory results.

Encouraged by previous experiments for practically transmitting power by swiftly revolving shafts and belts, the attempt was boldly made to carry the power to the manufactory instead of carrying the manufactory to the power; which was necessarily located on a hillside, where the wheel-pits were to be excavated.

The motors were a pair of water-wheels, 24 feet diameter and 18 feet long, with a fall of water 20 feet, and a second pair of water-wheels fifty yards above them, 18 feet diameter and 19 feet long, under a fall of 16 feet.

A small shaft, only three inches diameter, if revolving with 200 revolutions per minute, was deemed sufficient to transmit all the power of the upper pair of wheels; and by transmitting this power to another lower line of shafting of the same size, but with the velocity doubled to 400 revolutions per minute, it was also deemed sufficient to receive the additional power of one of the lower pair of 24 feet wheels. A driving pulley of 10 feet diameter on the upper line of shafting, transmitted to power by a belt 12 inches wide to a five feet pulley on the lower shaft, to its double speed.

This idea was more readily "conceived than executed." The movement of a pulley of the dimensions of 10 feet diameter, with a surface velocity of over 6,000 feet per minute, had never been attempted practically. Doubts were suggested of the safety of using belts with this velocity in mills. But after having trusted my own body to travel with the speed of a mile a minute, over English railways, with numerous other passengers, drawn by a ponderous locomotive engine of 35 tons weight,

whirled around curves, over precipitous embankments, and uncertainly fastened rails, it seemed very rational to trust a leather belt to travel with the same speed. Thus reassured, the doubter might smile at the suggestion of danger of risking a light belt to journey at the same rate. But there had been no light pulleys made suitable for this use. Those previously in use, made of two iron rims, covered with wooden lags bolted thereto, were rejected as unfit.

Although the superior convenience of belts over wheel-work and shafting for transmitting power had induced many attempts to use them thirty years ago, yet the experimenters had commonly failed of successfully operating them with the low rate of speed then used. Pulleys had not been made sufficiently light and well balanced for any one to venture to use them with the high speed required for leather belts to operate advantageously. With the slow speed, it was necessary to strain the belts so tightly on the pulleys, to produce sufficient adhesion, without slipping around on the smooth surfaces, that the lacings and the texture of the leather yielded; and so frequent repairs were required that the superintendents of mills nearly all abandoned the use of them for transmitting the power from the motors to the mill shafting. They fell back on the old system of slowly revolving heavy shafting and wheels.

To carry out the proposed system, new patterns of pulleys were therefore made. The first pulley, 10 feet diameter, proved to be imperfect, and, when tested with a velocity of about 8,500 ft. per minute, the rim soon made its exit through the roof of the wheel-house, and continued its course in a parabolic curve through the air several hundred yards, until it finally transmitted its motive power to plow a furrow in a meadow. A remodeled pulley, made to take the place of the wandering one, stood the test, and has continued faithful, without deserting its post, to perform the duty assigned to it ever since, during a period of sixteen years. The same belt has also remained in use, in good order, after traveling about a quarter of a million miles every year in its daily circuits, with a velocity of 6,000 feet per minute.

As a test of the efficacy of this small three-inch shaft to transmit the power from three water-wheels, it may be stated that not a single shaft or coupling has required renewal or repairs, and they appear still capable of a much longer service. This same three inch shaft has also served to transmit all the power of the steam-engine used in times of drought.

The contrast between the two systems of high and low rates of speed of shafts and belts, for transmitting power from motors to manufactories, is instructively exhibited in these two narrated instances of the practical application of each of them, with conclusive results of the failure of the latter.

The Colors of Gems.

Can science explain the coloring of gems? Everybody knows that the white light which reaches us from the sun and other heavenly bodies can be decomposed into a number of colored rays, by passing it through a triangular prism. A child blowing a soap-bubble produces colors as splendid. In fact, a thin plate of any transparent substance whatever, becomes colored under white light. Striated surfaces also offer effects not less brilliant; so that, to clothe certain insects more vividly, nature has grooved the tissue that envelops them. The rainbow, which the sun paints in a thousand colors in the drops of the falling shower, is the transcendent effect of decomposed light. Nature, with a palette, so to speak, charged only with white, knows the art of spreading over all her pictures the magic and glow of the most brilliant coloring. But we have not exhausted all the resources of this coloring, the secret of which is the light itself. Here science is at fault; and we must still say what Huyghens said at the end of the seventeenth century: "In spite of the labors of Newton, no one has yet fully discovered the cause of the color of bodies." We must, then, admire, without penetrating this secret, the peerless red of the oriental ruby, the pure yellow of the topaz, the unmingled green of the emerald, the soft blue of the sapphire and the rich violet of the amethyst. This is not the only thing the discovery of which we shall leave to posterity.

POSITIONS FOR ASTRONOMICAL OBSERVATIONS. Astronomical observations should be made from high elevations. Professor Young reports the whole number of lines in the chromosphere seen from Sherman, a lofty station on the Rocky Mountains, as 150, which is three times as great a number as have been observed from near the sea level. In these localities the atmosphere is clearer, steadier, and it is owing to this fact that a star has been recognized at these high altitudes as having a companion or being a double star, not previously known as such. An observer on the Pacific Coast reports to Professor Pierce that he can see the companion of the star Polaris from a high point on the Sierra Nevada. It is well known that this is a test of great nicety, requiring the utmost purity of atmosphere. Telescopes will hereafter be placed higher than ever before—in Europe, probably on the Alps.

MIXING COLORS.—When two or more colors are mixed together, the hue produced does not result from the loss of the particles of either of the colors by absorption or chemical changes of any kind. The microscope reveals the fact that minute particles of each color remain entirely separate.

FARMERS IN COUNCIL.

State Farmers' Club Convention at Sacramento.

The Convention met at Fireman's Hall, Monday evening the 23d., and was called to order by I. N. Hoag, who said it had been suggested that he call the meeting to order, and that he was willing to hear nominations for President.

Wm. Gouverneur Morris said that the meeting of this convention emanated from a call issued by the Farmers' Club of Napa County, of which he was a member, he proposed as temporary President the presiding officer of the Napa County Club—William A. Fisher.

Fisher was unanimously elected President, and on taking the chair he thanked the club for the honor of the election. He was glad to see so many men engaged as agriculturists to represent the different agricultural organizations of the State. We are taking upon ourselves a serious responsibility. Our object is to advance the interests of agriculture in California. It is very evident that not sufficient interest is taken in agriculture by the people of this State. In fact the industrial branches of the whole State are not sustained as they should be. Our object now is to unite the various Farmers' Clubs of the State, to stimulate all the branches of industry connected with agriculture.

T. Hart Hyatt moved that a Secretary be elected and the motion prevailed, and on motion A. T. Dewey of the S. F. PACIFIC RURAL PRESS was elected Secretary.

W. H. Nash moved that Hoag be elected Assistant Secretary, and the motion prevailed.

I. N. Hoag of the Sacramento County Farmers' Club stated the object of the meeting to be the organization of the State Farmers' Club.

R. A. Thompson of Sonoma moved that a Committee on Credentials be appointed, and that they report in fifteen minutes.

The motion prevailed and the Chair appointed as such Committee R. A. Thompson of Sonoma, E. S. Holden of San Joaquin, and W. H. Ware of Santa Clara.

The Committee on Credentials have examined the credentials of the delegates from the various Farmers' Clubs of the State, and find the following gentlemen entitled to seats.

Sonoma County Club—R. A. Thompson, A. W. Middleton, William H. Rector, Henderson Holmes, G. W. Davis, John Adams.

Napa County Club—J. B. Sanl, James M. Thompson, W. H. Nash, Wm. Gouverneur Morris, T. L. Griggs, W. A. Trubody, J. M. Mayfield, W. A. Fisher.

Vacaville and Pleasant Valley Fruit Growers' Association—T. O. Bingham, Wm. Cantelow.

Sacramento County Farmers' Club—I. N. Hoag, S. N. Baker, W. S. Manlove, James Rutter, William M. Haynie.

Oakland Farming, Horticultural and Industrial Club—Dr. E. S. Carr, T. Hart Hyatt, Christian Bagge, A. D. Fryall, and A. T. Dewey.

Santa Clara County Club—W. H. Ware, Jesse Hobson, C. T. Settle, — Chipman, Cary Peebles.

Sutter County Club—John McIlmoil, M. Wilson, C. P. Berry.

San Joaquin County Club—Dr. E. S. Holden, J. N. W. Hitchcock, Captain Thomas C. Ketcham, C. Grattan, H. C. Wright, W. G. Phelps, James Smythe, L. H. Brannock.

Santa Cruz County Club—Benjamin Cahoon, J. R. Locke.

El Dorado County Club—G. G. Blanchard, Robert Chalmers.

Sonoma Vinicultural Club—W. M. McPherson Hill, Major J. R. Snyder, Wm. Hood.

On motion of Thompson the report of the Committee was adopted.

Morris moved that the temporary officers of the club be permanent officers, and the motion prevailed.

T. Hart Hyatt submitted the following resolutions, which were read to the club:

Outline of Plan Proposed by T. Hart Hyatt.

In view of the stern exasperating fact that the farmers of California when spared the calamity of a loss of crops from drouth, floods, mildew or blight, are met by a more withering scourge in the form of railroad monopolies and pestilent grain rings and bread-sharks, whereby the farmer is robbed of the fruits of his hard toil and lifelong earnings, and left without enough in many cases to reimburse him for his expenditures, while the merciless speculators are fattening on their unjust gains, building palaces and sporting princely establishments on the plunder thus taken from the hard working farmer; and in view of the fact that nothing can be effectually done by the farmer without co-operative and vigilant, energetic, united action; therefore, be it

Resolved, that the convention deem it expedient forthwith to establish and organize a Farmers' Protective Union League, to be composed of the members of all the local agricultural and horticultural clubs and associations in the State, who may desire to join the league; and to hold semi-annual meetings alternately at Oakland, Marysville, Stockton, Napa City, San José, Sacramento, and at such other points as may be deemed practicable. That said league be organized under the laws of the State, and be duly incorporated, so far as it may be necessary to enable it to transact business in a legal manner; to be a business, not a sporting institution; that it appoint an Executive Central Committee, who shall be empowered to trans-

act business for the league during the intervals of its regular meetings. The said league to have power and authority to organize and establish a Produce Exchange, a Farm Stock Exchange, and a Farmers' Savings, Deposit and Loan Bank; and to do all other things that may be found necessary to advance the rights of the farmers of California.

On motion, the resolutions were laid on the table temporarily.

Blanchard moved that a Committee of five be appointed upon resolutions and order of business.

Thompson of Sonoma suggested that a Committee on Constitutions and By-Laws be appointed.

Blanchard withdrew his motion, and a motion that the Chair appoint a committee of five on constitution and permanent organization prevailed, and the Chair appointed as such a committee Dr. Carr, Dr. Holden, Blanchard, Morris and Thompson.

On Motion, I. N. Hoag was added to the committee.

Hoag moved that one delegate from each society represented be placed on the committee, so that each society shall be represented, and the motion prevailed. The Chair appointed under the motion McIlmoil of Sutter, Hill of Sonoma, Ware of Santa Clara, Cahoon of Santa Cruz, J. P. Loucks of Contra Costa.

Blanchard moved that a committee be appointed on resolutions. An amendment was moved by Dewey that the Committee on Constitution be also the Committee on Resolutions.

The discussion of this question occupied some time, and finally the motions were withdrawn.

Morris moved that Hyatt's resolutions be taken from the table and referred to the Committee on permanent organization. The motion was lost.

The question of the objects of the association came up. Different delegates expressed their opinions. The object of the Club is to benefit the farmers of the State. If possible the rates of freight should be reduced, manufactures must be encouraged, free ports must be had, the exorbitant port charges must be abolished and a better mode of cultivation should be pursued.

Adjourned to meet Tuesday at 3 o'clock. The above well rendered report is from the Union, with some slight alterations.

The delegates all seem earnest in their action, and united and determined on the main objects of the association. The tenor of the general remarks showed a desire to strengthen the influence of the Convention by calm, deliberate action, attempting no dictation and making no demands in any direction without the power to enforce them. The main objects of Hyatt's resolutions seem to meet with favor.

President Fisher recommended that warehouses be built at convenient points for shipment, where farmers can safely put their grain and keep it. It was suggested that foreign capital, or any other capital demanding a low interest, can ask for no safer security. The money can always be had, when the grain is put up, and as long as it is needed and at rates that we can stand. Our great crops once in our storehouses, we can also have the power to coöperate and deal directly with foreign buyers. We can show what we have in our hands, and they will know what ships can profitably be sent this way at the right time. Messrs. Blanchard, Phelps, Rector, Morris, and others favored building sufficient warehouses to carry out as far as practicable the objects desired.

Dr. Carr made an excellent speech, urging that there was a still higher work for the State Farmers' Club whereby they may secure the worthy object of getting fair prices for our products. Let us arrange to work up our own produce into brain and muscle. Encourage manufacturing; and diversified farming giving all the needs and comforts of life cheaply, in our favored clime. If low prices shall discourage sending enormous quantities of wheat out of the country annually, it may be in the end a blessing rather than a calamity. Wheat crops as now produced, year after year, are taking the cream of our rich and generous yielding soil. As our lands grow poorer, immigration and all industry is discouraged. It is the noble work of our Farmers' Club to bring about a better order of things and make the utmost of the rich resources that are within our reach on this highly favored coast. We hope to give our readers further of the Prof's remarks hereafter.

Mr. Morris endorsed Dr. Carr's remarks and stated that his taking the United States census returns for the State developed to him the fact that in a quite recent year one export of wheat brought us less money than we sent away for boots and shoes manufactured abroad. The census returns also brings painfully before us our lack of suitable employment of boys and girls. Occupation is needed for them that we may have the right men and women of tomorrow to develop and increase our naturally rich possessions.

Mr. Blanchard's remarks were well delivered. He counseled making the best of things beyond our present control. When we cannot build competing railroads, let farmers and fruit growers combine, see what, unitedly, is the best they can do without the railroads—immediately and prospectively—and then show railroad men how they stand in their own light by keeping up high prices, preventing industry from being profitable, keeping back settlement and retaining undeveloped districts for their slim trains to pass through. Talk business, drive sharp bargains. Railroad men have not all the brains and business tact, and producers

have frequent opportunities to make points in their own favor.

Mr. Hyatt suggested taxing railroad property severely. The people have not only the natural right but the power to do so unitedly.

Messrs. Snyder, Hill, Bagge, McIlmoil, Hoag and others spoke with evident feeling of attachment for the interests of the organization, and considerable social freedom prevailed for a meeting of men so little acquainted with one another and not more generally composed of public speakers.

SECOND DAY.

The State Farmers' Club held a second meeting at Fireman's Hall at 3 o'clock Tuesday afternoon, and was called to order by the President, Wm. A. Fisher. The minutes of the last meeting were read and approved.

Adoption of a Constitution.

R. A. Thompson, from a Committee on Constitution and By-laws, reported back a constitution for the society. On motion of Professor Carr, the report of the committee was adopted, and the club proceeded to take up the articles *seriatim*, and act upon them.

The following is the constitution, as adopted: Article I.—This association shall be known as the California Farmers' Union.

Article II.—The objects of the association shall be the promotion of the agricultural and industrial interests of the State.

Article III.—The officers of the association shall consist of a President, six Vice-Presidents, a Secretary and a Treasurer, who shall constitute a Board of Directors.

Article IV.—The officers of this association shall be elected by ballot annually, from and after the year 1872, on the third day of the annual Fair of the State Agricultural Society, at such place as the State Fair shall be held, at which time the annual meeting shall be held, and shall hold their offices for a term of one year from the first day of the succeeding month and until their successors are elected.

Article V.—The office of the association shall be located in San Francisco.

Article VI.—The Board of Directors of the association shall have the general management of its affairs and call special meetings.

Article VII.—The Secretary shall receive all funds of the association, and pay the same over immediately to the Treasurer, and keep a correct account of the same, which shall at all times be open to inspection by any member of the association. He shall also conduct all the correspondence of the association and perform such other duties as usually devolve on Secretaries of similar associations, and shall receive such compensation for his services as the Board of Directors shall determine.

Article VIII.—The Treasurer shall receipt for all moneys of the association paid him by the Secretary, and pay the same out on the order of the Board of Directors, signed by the President and Secretary. He shall submit an annual report of receipts and expenditures to the Board of Directors previous to each annual meeting of the association, and whenever required by the board of Directors.

Article IX.—The members of this association shall consist of delegates from all permanently organized farmers' clubs, horticultural, vinicultural wool, and stock growing societies in the State, organized for self protection.

Article X.—Each local society shall have a representation in this association of one delegate for every ten of its resident members, and one additional for every additional fraction of more than one-half of that number, provided that each club or society shall be entitled to one delegate.

Article XI.—Each club or society interested in the object of this association shall pay to the Secretary the sum of twenty-five cents for each of its members annually before being entitled to representation.

Article XII.—Each delegate, before taking his seat, shall sign the constitution of this association.

Article XIII.—Order of business: 1—Reading of minutes; 2—Reports of officers and committees; 3—Unfinished business; 4—New business; 5—Election of officers.

Article XIV.—A majority of the Board of Directors shall constitute a quorum to do business.

Article XV.—This constitution may be altered at any annual meeting of the association by a two-thirds vote of the members present; provided, that notice of all proposed amendments to the State Constitution shall be given to the Secretary in writing at least ninety days previous to the annual meeting, and a copy of the proposed amendment and notice of the same shall be sent to all clubs and organizations connected with the State Club at least sixty days before the annual meeting.

Election of Officers.

The club then proceeded to the election of officers.

Dr. Holden nominated Robert B. Woodward of Napa for President.

W. S. Manlove placed John Bidwell of Chico in nomination for that office.

Wm. A. Fisher was placed in nomination, but he declined.

Professor E. S. Carr of Oakland was nominated.

The Chair appointed Major Snyder and Blanchard tellers. A vote was had, with the following result: Bidwell, 18 votes; Woodward, 10 votes; Carr, 3 votes. The election of Bidwell was made unanimous. W. S. Manlove was appointed a committee of one to wait upon Bidwell and inform him of his election.

The following named gentlemen were placed

in nomination for Vice-President: John Mathison, Dr. Holden, Major J. R. Snyder, G. G. Blanchard, Wm. H. Ware, Robert Chalmers, T. Hart Hyatt, W. G. Morris, Benj. Cahoon, D. C. Feely, W. S. Manlove and Professor E. S. Carr.

The following were elected Vice-Presidents: J. R. Snyder of Sonoma, Dr. E. S. Holden of San Joaquin, T. Hart Hyatt of Alameda, W. S. Manlove of Sacramento, D. C. Feely of Santa Cruz, W. H. Ware of Santa Clara.

I. N. Hoag and A. T. Dewey were placed in nomination for Secretary. Dewey declined, and Hoag was unanimously elected Secretary.

Henderson Holmes and A. T. Dewey were placed in nomination for Treasurer. Holmes withdrew, and Dewey was elected unanimously.

Morris moved that an assessment of fifty cents each be levied on every delegate present, and the motion prevailed.

Blanchard moved that Prof. E. S. Carr and the Secretary and Treasurer be appointed a committee to write an address to the farmers of this State, at their earliest convenience. The motion prevailed. G. G. Blanchard and T. Hart Hyatt were subsequently added to the committee.

Hoag moved that the association invite Prof. Carr to deliver an address in the Agricultural Hall, to-morrow (Wednesday) evening, at 8 o'clock. The motion prevailed, and Carr signified his acceptance of the invitation.

The Secretary presented the following letter from L. I. Fish, of Martinez:

MARTINEZ, Sept. 2d, 1872.

I. N. Hoag: It is not convenient for me to attend the proposed meeting to organize a State Farmers' Club, but I wish to make some suggestions. I believe that if it were publicly known in Europe that this State has a surplus of twelve or fifteen millions of bushels of wheat awaiting purchasers, and that it can be safely and cheaply stored, say at about \$1 per ton for six or eight months, we would not long have the stagnant market we now have; but the abundance and cheapness of capital there would induce people there to buy and hold wheat here until ships can be had to take it away. To furnish information in a manner to command the greatest respect and confidence, I would suggest that it be furnished by the State Agricultural Society, and verified or indorsed by the Governor. To reap the greatest benefits the statement should be forwarded as soon as possible; therefore the telegraph should be used, and undoubtedly the London Times would give it a wide circulation.

It is thought by many that on account of the control or monopoly of purchasing facilities, that it is difficult for a newcomer or buyer to enter our markets and buy wheat on equal terms with the present exporters. If such is the case facilities can be furnished, and the expense of commission and middlemen done away with, by the Farmers' Clubs of each county appointing at each shipping point a person to sell wheat to whoever wishes to purchase; such persons to be publicly known so that they all could be easily communicated with by any one desirous of purchasing.

Thinking that competition, free competition, is a thing most desirable in our markets, to enable us to dispose of our crops to the best advantage, I have made the above suggestions for your consideration. If you think any of them practicable or worthy of adoption, use them as you think best. If other farmers will give their views no doubt some course can be adopted that will be greatly to the interest of the State.

If you form a State Farmers' Club I desire to become a member.

L. I. Fish.
After a vote of thanks to the officers of the association and the press reporters, the Board adjourned sine die.

Napa County Farmers' Club.

Club met pursuant to adjournment, Wm. Fisher in the chair.

The President announced that the object of the meeting to-day was to discuss the duties of our delegates to the State Convention at Sacramento. That among other matters which would come before this convention, three important subjects would be discussed, viz:

1. The circular lately received by the club in reference to the organization of a Farmers' Exchange. He thought to establish an Exchange of this kind, to be controlled by the farmers, would result in untold benefit to them. Through this they could obtain advances on their grain and sell it when they saw fit. It would also create competition with Mr. Friedlander—something very desirable.

2. In regard to sacks. We should dispense with them, and give the people to understand that we can do without them. Boats and cars should be so arranged as to receive and transport grain in bulk.

3. As to shipment, we think railroad freights are too high; we wish our representatives at Sacramento to know it.

Mr. Truebody thought that the delegates should go uninstructed. They are men of experience and in their deliberations at Sacramento, should not be trammelled by unnecessary instructions. It is useless to write out a set of resolutions condemning corporations, monopolists, etc., without being able to demonstrate how these evils are to be remedied. There are a large number of clubs organized throughout the State, each oppressed in some particular, and each of which will be presented

at Sacramento. Upon their conferring together they would know better how to act, in order to advance the best interests of our farmers. He thought by the recent reduction in freights that the rates now charged for shipping fruit, quite reasonable, and much below those charged in other sections of the State. These reductions have been made on the Napa Valley and Vallejo and Sacramento branches of the C. P. road.

Mr. Sawyer—We need to combine that we may act independently of monopolists, in buying our sacks and selling our grain; as it is, we cannot set our own price but have to be content with what these commission men see fit to give us.

Freights Reduced.

Mr. Nash believed the discussions of the club were already producing fruits, from the fact that the railroad company had lowered their freights on fruit. He hoped the work of the club might continue to be effective in that direction.

Mr. Saul—We have accomplished something already. There is still room for improvement. The rates are high yet. After deducting freights and commissions there is hardly anything left for the shipper. Mr. Sawyer's remarks are to the point; we have not a word to say as to our prices. Mr. Friedlander controls the farmers, loans money on the hypothecation of their crops, and takes possession as soon as the grain is threshed, paying what he chooses. Thinks the delegates to Sacramento should not be instructed. Members of the club should express their opinions, and by them delegates would be guided in their action. After a while our farmers through these organizations, will gain a power and their influence will be felt.

The matter of regulating freights will soon be in our grasp; there is no question as to the right of the people to fix the freight and passenger tariff. The Legislature have the power. Why have they not done something? Because our interests have not been represented there, and just so long as it is thus, just so long will the monopolists "take care of us." The time is coming when the farming community will be awake to their interests; when they themselves shall regulate the tariff, so that they may have something left to pay their taxes and clothe their children.

He suggested that fruit men organize, and secure a portion of the wharf; have an agent, book-keeper, etc., there, and ship their fruit direct, doing away with middlemen. This can be done by organizing, and fruit men will then save the commissions they now have to pay.

Mr. Coombs had confidence in the delegation chosen to represent the club at Sacramento, and favored their going uninstructed.

A New Apple.

Mr. R. S. Thompson here brought in a sample of Grime's Golden variety of apples, which he intended taking to the State Fair. They are of fine flavor and pronounced an excellent eating and cooking apple.

Mr. Sawyer favored the suggestion of Mr. Saul in regard to shipping fruit; thought fruitmen should dispose of their fruit without the assistance of commission men, who make little effort to secure good prices.

Mr. Fisher—As the wheat interests of California will, no doubt, continue the staple article, at least for a number of years hence, and in view of reducing the various manipulations connected therewith, he proposed to uphold a reformitory system. Local circumstances rendered it necessary during the first rapid settlement in California of adopting extravagant methods in the sacking of grain.

The force of industry has changed those circumstances, but the consequent labor, and uncalled for expense, remain proportionately about the same—from the handling of the grain in the field to its final destination. A continuance of those usages must operate against that healthy expansion which we would desire to see in this important branch of agriculture.

The sooner a more enlightened change takes place in this direction, the greater will be the benefits. This, however, cannot be accomplished, unless the zeal manifested proceeded from a well directed source. The interests of importers to supply the demand commensurate to this sack trade must appear significant, amounting, in the aggregate, annually to over several millions of dollars.

Granaries Indispensable.

Farmers are not an exception to the influence of habit—and generally, not having a convenient place to store their grain while threshing, tend to make them singularly submissive; add thereto the crowning impression produced over them by the "grain ring," that sacks are indispensable to the safety and convenience of such products in transit. The objections may seem plausible but are not to be assumed as practicable deductions—not even tolerated.

It is not desirable in those great foreign marts that grain sent from this country should be sacked. It is certain no grain can be more fit for shipment than that in bulk. Now, each farm ought to have a suitable granary. The cost in threshing and hauling, in many instances, under a different arrangement might become reduced fully one-third.

Conveying the grain from the thrasher can be done by two boys, using separate teams with light wagons and tight boxes. The grain, as threshed, being elevated into a box, just high enough to admit a wagon to drive under it, and become loaded in a few minutes, thence discharged into a hopper alongside the granary, where it can be carried into the building by elevators, propelled by one-horse power; and while the grain is descending, it can be re-

cleaned by a simple process without any material effort.

The storehouse, or granary, should be constructed so as to allow the free passage of a wagon under the floor, and be more convenient when the grain is taken out. Such storehouses, on a more enlarged plan, wherever practicable, should be erected along lines of railroads, canals, etc., and hence both cars and water craft, in carrying trade, ought necessarily to be fitted up with a view to receiving such products loose, as is usually done elsewhere.

As to freights, it may be, that by the recent reduction, they are low enough here, but in the San Joaquin there is great complaint. Thought it to the interest of the R. R. Company to reduce their freight, and passenger tariff, as it would result in multiplying their business.

Grain Shipments.

Mr. Sanl—It is estimated that we raise 7,000,000 cents of wheat, over and above our yearly consumption. What we want is, to have vessels come to our ports disengaged, that might be chartered after their arrival. As it is now, there is no way by which we can get vessels, and there is no competition among grain buyers in San Francisco; Mr. Friedlander has the vessels, and we have to submit.

Mr. Sawyer said he thought there were hundreds of men on our coast as well qualified to transact business as Mr. Friedlander. We must organize and then choose men whose interests are identical with our own. He believed, in order to have more vessels visit our coast, that San Francisco ought to be made a free port of entry.

Mr. Nash—As regards the action of delegates at Sacramento, thought they would know better how to work after consulting with representatives of other clubs. Sacks, freights and shipping, were among the important interests that must be looked after. Had a friend living in San Francisco, who last spring chartered a boat, hiring a man to run it until Sept. 1st, and fixing freight charges, for shipping fruit, at a fair rate.

Railroad Trick.

This caused the Railroad Company to reduce their freights, until, in August, the boat broke her shaft and had to lay by, when up came the freights on the railroad the same as charged heretofore. This was only one instance of the Railroad Company's taking advantage of the shipper.

Mr. Trubody suggested that it would be wise at the State Convention, to make a standard by which certain names would represent a certain weight. We at one time understood a sack of grain to mean 100 lbs., but now our sacks contain sometimes 130 and 135 lbs. Sacks ought to be made of uniform size.

Upon motion of Mr. Nash, two more delegates were added to the number already chosen, making eight in all—the number of delegates selected by the Stockton Club—whereupon the President nominated Messrs. Jas. M. Thompson and W. A. Trubody, who were duly elected as such delegates.

Mr. Saul stated that the time for electing officers of the club having passed, he moved that the Secretary be authorized to cast the vote of the club in favor of the old officers who should be considered re-elected, to serve for the term of three months. Carried.

The Secretary then drew up credentials accrediting the following named gentlemen as delegates to the State Convention, to meet at Sacramento, Sept. 23d:

J. B. Saul, Jas. M. Thompson, Wm. H. Nash, Wm. Gouv. Morris, T. L. Grigsby, W. A. Trubody, J. M. Mayfield, Wm. A. Fisher.

Sonoma County Farmers' Club.

Club met pursuant to adjournment, President Holmes in the Chair.

On motion it was resolved that the delegates to the Farmers' State Convention go to the same unrestricted.

The discussion of the question of the day, "The best mode of marketing produce," being in order, Mr. Rector said:

I proposed the subject of the best method of selling our produce for the reason that I believe it to be one of importance at this time, and one that deserves the attention of the Club. We do know how to produce, but do not know how to sell what we produce to realize its full value.

We now employ an agent to sell our produce for us, confiding all to him and pay a commission of five per cent. This is an exorbitant commission, to say nothing of the exorbitant commissions made on almost everything that passes through their hands. But it is not my purpose to find fault with what has been done or what is being done at this time by commission men and speculators.

For information on this subject, I would refer you to the report of the select committee of the Oakland Club. That Committee was composed of reliable gentlemen who have a better opportunity of knowing what is going on among the Shylocks, as they have called them, than we have, living at a distance. If you have read the report, read it again, it is a document that every farmer should read and re-read.

Our object at this time is to propose a way that we may reach the market with our produce at less expense and more certainty of getting its full market value. I am not clear as to what would be the best mode to adopt to accomplish so desirable an object. It will require some deliberation. It has been said of old that "there

is wisdom in much counsel," and I am quite certain that this Club will be able to arrive at a mode of disposing of their produce, that will be more secure and less expensive than the present practice of selling through commission men.

I have said that five per cent. is an exorbitant commission, especially on wheat and wool, the staple product of the State. Let us figure a little and see: Suppose fifty members of this Club each having 40 tons of wheat to sell (and I think this is moderate) the aggregate would be 2,000 tons. At the average price of wheat—\$2 per hundred—will give \$80,000. Commission on \$80,000 at five per cent. will show the snug sum of \$4,000. Add to this the wool crop, which I think will be half as much as the wheat crop, and you have paid \$6,000 on wheat and wool alone, to say nothing of the minor articles of farm produce.

A Farmers' Commission House.

Would it not be a great saving for the Club to employ a competent man from amongst themselves, pay him a fair compensation to sell all the produce of the Club? Certainly it would not cost near so much, and result in better sales, affording at the same time more security. The fruit and other minor articles of the farm produce are so augmented in price before they get through the hands of the middle men, that the poorer classes can't buy, and the careful economist won't buy, consequently there is but little used to what there would be if the price was not so exorbitant.

You get 1 to 1½ cents per pound for peaches, grapes, etc., the consumer pays in the city 6 to 8, and even much higher. I believe the farmers' commission house would remedy this state of affairs both for the producer and consumer. If the Club were to establish an office in the city it would get liberal consignments from farmers not members of the Club; it would certainly be entitled to the confidence of the farmers far more than the corrupt intriguing rings that there is so much said about at the present time. It would invite the buyers to give preference or at least it would attract the attention of buyers far and near.

It is very probable that there will be a consolidation or co-operation of all the Clubs in the State for the purpose of shipping their wheat to foreign markets; but it is not my purpose to speak of that at this time; let us talk of what we can do as an independent Club. I propose an office in the city as the only feasible method that has occurred to me.

Shipping Wheat in Bulk.

But there is another matter of which I wish to say something, and that is shipping wheat in bulk. I see that it has been talked of in several Clubs, but has not met with much favor. I, for one, believe it to be wholly impracticable. Admitting that the grain would go from San Francisco to London without damage, for the reason that it requires a ship to be fitted up expressly for that purpose, and then it is not fit for any other service. We must use merchant ships, such as trade to this Coast.

Again it requires elevators to load and unload the ships, which is attended with expense, and you put us in the hands of monopolies. Again can't load or unload your wheat only where there are elevators. You must have sacks and that of a better and costlier quality, to haul or ship your grain to the elevator, where it will be emptied with grain of other crops that may be inferior to yours; your wheat may be good and clean, but it will only grade the same as the dirty crop, thus deteriorating the whole cargo.

Wheat in bulk will not sell for as much as wheat in sacks. The buyer will make a further reduction by furnishing his own sacks, and somebody has to be paid for re-sacking the wheat. There could be other valid objections to shipping wheat in bulk, but these already mentioned are sufficient. Cheap sacks has established the custom of selling everything in sacks, and we must look to cheap sacks as the only remedy, and that we can have by making a little exertion.

Mr. Whittaker advocated shipping grain in the bulk; he thought it perfectly feasible. In the West millions of bushels of grain are sold annually without ever being sacked, and he saw no reason that the same could not be done in California. It is objected that vessels have to be prepared to carry grain in bulk. This has, I think, no weight. I am informed that it costs about \$250 to rig frame-work in the hold of a ship to prevent the cargo from displacement. Now by selecting lumber and so framing it that it can be taken apart, the lumber might be sold in foreign ports, say Liverpool, at a profit.

Shipping in Sacks.

Mr. Adams—Without sacks, how would you manage in threshing? In the West grain raising is not carried on as it is here. Farmers do not handle such large crops and the means of land carriage are more abundant than here.

Mr. Whittaker—Building bins to hold your grain would be an easy remedy.

Mr. Rector—One great reason why shipping in bulk is not desirable—each man's grain is mixed with others, and thus one poor lot of grain mixed with good grain deteriorates the whole in value. There will be no stimulation to produce good wheat. Now each lot stands on its own merits. At Liverpool the grain is sold direct to the miller and he will not give as much for it in bulk as in sacks. I am sure that it would cost more than \$250 to rig a ship so as to carry in bulk.

Mr. Adams—What protection do sacks afford? Mr. Rector—Sacks hold grain in place. In bulk it is liable to shift, and if it gets wet would swell and burst the vessel.

Mr. Davis in the chair.

President Holmes—The Club at Sacramento doubtless will take the question in hand and obtain complete data. We can solve the matter by making our own sacks, and thus developing a new industry. We can raise flax, jute or some other fabric, and when once the raw produce is raised bag factories will be built throughout the State, competition ensue and bagging be placed on the market at reasonable rates. This is one, and the best of the means by which to prevent monopolies of this interest.

We have ample water power in this county for all the factories we need, and near the railroad. We might provide means by which the farmers of Sonoma county could ship as one man. We cannot do it this season, but we can do it the next.

The first thing to do is to change our crops, make them so diversified that no one man can control the same. Sonoma should hear her duty in the contest, our delegates should go to Sacramento city to present and protect her interests and unite in an organization which will be true to the farmers' interests.

President Davis—The best thing for us to do is to get cheap sacks. It seems there is no way for us to do but to ship in sacks and the means by which we can facilitate the cheapening of sacks is the question for us.

Flax for Sacks.

Mr. Whittaker—Well, that can be easily solved. Let us try flax, and cheap sacks will follow. I have grown flax three feet high on a poor rocky ridge on my farm.

Mr. Fulkerson—I was raised in a flax country and so I claim to know something about the question. I think the dearthness of labor in this country would prevent the success of flax-raising. I have raised, broke and spun flax and I know what it costs. It requires a great deal of labor to raise or handle flax. While we have improved machinery for grain-raising, which solves the question of dear labor, but little improvement has been made in machinery for flax-growing. It is yet a hand labor, and is grown and prepared for market as of old. Even if we could raise flax, I doubt if we could manufacture our bagging and compete with countries where labor is cheap and plentiful. I concur with Mr. Rector that we cannot ship in bulk. Sacking offers the readiest way of handling grain. I see no remedy but to hold on to our grain when we can do it, until buyers are compelled to pay remunerative prices. Some of us can, but some cannot, or will not. By talking over these matters we may devise some plan by which those farmers who can hold their grain may help those who otherwise cannot, to hold also. At least we can do this; we can combine together and buy large quantities of sacks at one time, and thus obtain them cheaper than when we each bought singly.

Mr. Holmes—Mr. Fulkerson's idea of labor is important, and is to be considered in judging of the probable success of manufacturing bagging. But I would say that we do not ourselves propose to manufacture, we propose to grow the flax and exhibit our produce to the world. If we can raise the raw flax, capitalists will scent us out. Let them judge whether they can manufacture. There must first be the test whether flax can be raised, then factories will follow. At least let us try.

Mr. Fulkerson—It must not be forgotten that to produce a crop of flax fit for marketing, there must be warm rains to rot the flax; here nothing rots; straw lies on the ground for years, unchanged. If there is any place in this county where flax can be raised and rotted, it will be on the coast within reach of the fogs of the ocean.

Mr. Rector—Mr. Fulkerson must remember that there have been improvements in machinery for working the fibre since his day, by which the necessity of rotting is, to some extent, obviated. During the late war, improvements were made so that for coarse materials, all that is necessary is to have the fibre dew rotted. Coarse material will do for bagging, and I believe that with our fogs the fibre can be worked with success.

Mr. Davis, Jr., said that while we talked of Liverpool, we forgot that the East, the nations of China and Japan offered us a better market in the future for our grains than any part of the known world. Those nations might also solve the question for us of cheap labor in manufacturing bagging. Certainly the climate of those countries was favorable to the growth of textile crops, and commerce would find that cheap, coarse bagging was a good exchange for our grains and flour. We might then look to China and Japan Isles for all the sacks we may want. If the want of sacks prevents the shipping of our grain, commercial men will soon find it to be to their interest to furnish farmers with cheap sacks.

Mr. Davis made a very interesting speech, which so interested the reporter that he failed to take the proper notes, and much of Mr. D.'s remarks are omitted for the cause named.—Sonoma Democrat.

Sutter County Farmers' Club.

A meeting of the Club was held at the Court room on Saturday, 14th instant, pursuant to adjournment. J. H. Esseltine acting Chairman, J. H. Craddock Secretary.

The committee appointed to report a constitution and by-laws presented a report recommending the adoption substantially of the constitution and by-laws of the San Joaquin Farmers' Club with such alterations and amendments as the circumstances required, which recom-

[Continued on page 204.]

Editorial Notes at the Fairs.

We spent only a part of one day at the Stockton Fair, and although we saw much to comment on and much that would interest our readers, we are compelled to make our Notes very short and general, on account of space and time to write them up—the State Fair being upon us. The exhibition of stock was good—as good as at any District Fair we have attended this season. In the horse department the young colts particularly made a most creditable exhibition, and, as we heard President Doak remark, it showed those who wanted horses where they might come to buy them.

Cattle.

The exhibition of Durham cattle was also large and good. The large and valuable herd of W. T. Overhiser made a grand show here at their own home. Dr. Holden, ex-President of the Society, also showed an excellent herd of some ten animals, at the head of which stood his splendid bull, "Blanco," as white as the driven snow. If this animal was a bright red he would be a formidable competitor for the Sweepstakes against any bull in the State; but white, in cattle, though considered as evidence of superior blood in man, is decidedly out of fashion and objectionable. Jesse D. Carr also had on exhibition here two bulls and cows that he showed at San José. Major Vernon's splendid two-year-old bull, "Dandy Jim," put in an appearance here for the Sweepstakes.

Sheep.

San Joaquin county is getting to be one of the foremost counties in the State in the number and quality of its flocks, and, like sensible men, the owners made a most excellent exhibition at the fair. There were so many excellent sheep shown here it would require an expert with a plenty of time to give an opinion as to which flock possessed the highest degree of merit, and we shall certainly not attempt it.

The Hall.

In the hall the exhibition of agricultural home-made implements was decidedly better than at any other fair we have yet attended. That enterprising firm, Mattison & Williamson, are always on hand when a good plow, a chisel cultivator, or an excellent horse hay-fork is to be shown and discussed. Without further comment, we will remark that this fork is not half as extensively used in this State as it ought to be for the good of the hay and grain raisers. It is in reality a labor and money saving-implement.

The Fruit

Displayed was also the largest and best we have seen at any of the fairs—always excepting the one made by the Farmers' Club of Sacramento at their fruit festival. Peculiarly, we are told, the fair was a success.

Change of Officers.

At the annual meeting held during the fair, a new man was elected President of the Society, over the gentlemanly and very efficient gentleman, J. K. Doak, who has been the life and soul of this institution for several years.

Colonel Dorsey, the new president, is a fine gentleman, and when he "learns the ropes," will undoubtedly manage the affairs of the Society very successfully; but in agricultural societies as in every thing it is a good plan to let "well enough alone."

Doctoring Wines.

A correspondent, W. P. San José, desires information on the subject of "doctoring," or the manufacture of artificial wines. He says:

Suppose I take 20 gallons of good grape juice and 20 gallons of water to make 40 gallons of wine or, 30 gallons of juice and 10 gallons of water, how much tartaric acid in each case would be about the proper quantity?

We have no experience in the getting up of imitation or "doctored" wines; nor have we any desire to know anything of the business, believing that in California at least, we can raise all the grapes necessary for the making of all the wine we can sell at remunerative prices; and that the best wines are those made of the pure juice of the grape.

Any addition of water, sugar and tartaric acid though it may increase the quantity, can add nothing to the quality of the stuff produced, falsely called wine.

Steam Plowing in England.

Is steam-plowing in England as mythical and rare as in this country? Are the statements made concerning the amount of steam-plowing done there simply false? Do they correspond in practical accuracy with those made concerning the exploits of American plows? Have we been deceived? Fawkes, with his plow in the West, was at first reported as doing, and then as just going to do, wonders with it. He did plow a good many acres of ground, and at such cost that it did not pay to use it. In one or two places—one in Louisiana, one in New Jersey or Delaware, and, we believe, on one farm in Minnesota—steam-plowing is reported as practiced. But we have seen no figures that prove its economy in American husbandry.

Now comes the statement by a correspondent of the *Country Gentleman*, that he looked over England recently with especial reference to the use of the steam plow there, made diligent inquiry but obtained but very little definite information about it. He could only learn that it was believed to be in use on some of the larger farms in the south of England, but this correspondent concludes "that the old fashioned way of plowing is the only one in practice in England." At least he did not see the puff of a single engine propelling a plow, and he kept his eyes open.—*Rural New Yorker*.

And now comes our own statement, which is, that we did see Fowler's steam-plows in successful operation, in both England and France. We saw them there three years in succession doing excellent work; and, to our mind, where the labor of men and animals can be had at low rates to keep up the supply of fuel and water for the engines, and the field to be plowed is not too wide, requiring too great a length of wire-cable to be practically coiled—then and there—Fowler's system of steam-plowing can be, perhaps, economically introduced.

There is one point, however, that seems to be overlooked in proposing to introduce the Fowler system in California. It is this, that as the plows are drawn back and forth across the field by stationary engines, one on each side of the field, that the limit of distance is circumscribed, from the fact that with half a mile of cable—one-fourth of a mile or eighty rods to each engine—but eighty rods in width can be plowed; and that beyond this, the coil of cable, its length and weight becomes unwieldy and impracticable.

What we want in America, upon our broad prairies and plains is, an engine that can start off with its five or six plows, independent and free of trappings and connections with anything stationary, and turn its furrows from one to three or five miles in length, and returning to certain points for its supply of fuel and water.

Such an engine, with plows and fixtures all complete would require one man to guide it, and one as engineer, and if the attention of one more was found necessary to see to the plows while at work, then we find ourselves with one man more than would be required to plow with two gangs of three plows each, with horses. The economy of the one system over the other remains to be shown.

Sonoma County.

Santa Rosa is a place which we look upon as destined to a sure and permanent growth. There is an intelligent class of men there who are developing her resources, and they want plenty more of the same sort. One has drained an old tule swamp that used to be kept for the hogs to root in, and now has \$200 worth of potatoes to the acre. The last owner plowed up half of the orchard because he thought it did not pay, and then sold the place to Mr. Bethel at half what it is now worth.

First Rate Opportunities

Exist there for those who can see and develop the resources of neglected places. Plenty of people are ready to sell property that they don't make pay, and plenty are always ready to buy property which they see does pay. He who can make most money in real estate is the man who can best show how non-producing property can be made to produce.

The Sonoma Farmers' Club

Is a very promising society lately organized under the very efficient Presidency of Mr. H. P. Holmes. We found him a thorough gentleman who had seen much of the world, and that to a good purpose. We firmly believe that this farmers' club will be a permanent source of credit to its founders and usefulness to its members.

Societies a Double Benefit.

In the first place they like fellow craftsmen to profit by each others experience, and to keep up with the news and improvements in agriculture. Farmers are too apt to consider themselves encyclopedias of knowledge in their particular line. There is scarcely ever a farmer who knows so much more than another about farming that he cannot learn something from

him. If you don't believe it try the experiment faithfully with the one whom you consider your most unsuccessful neighbor. If we depend upon experience for all our knowledge we learn well, a few things at great expense. The experience of all the rest of mankind is at our service for a trifle.

The Old Fable of the Bundle of Sticks

Illustrates the second advantage that we hope to see gained by farmers' clubs. When the twenty or thirty county bundles are finally united in the big State bundle, the monopolist who breaks the whole, must have a hard knee and strong arm.

The Treasurer of the Sonoma Club (Mr. John Adams) is as wide awake as its President, to the importance of circulating the best information among its members. The editor of the *Democrat* sees the interest of his excellent paper to be the same as that of its patrons, is working with a will and a power too, to make the thing go. Let members of other clubs visit them and see how these wideawake men do things.

Fruit in Santa Rosa

Seems to be at a discount, although there are many fine orchards and vineyards. The prices of apples are so low that freight, boxes and charges leave too small a margin for the grower. Were they so fortunate as to have fewer varieties and those best calculated for a large yield and for drying fruit we think there might be a good opening for a drying establishment there. These can never be made a success where farmers have not given up realizing immense profits from their fruit and are not content with a moderate price at home. Better a bird in the hand than two in the bush. It is a common remark that fruit can be had cheaper in San Francisco than in any of the orchards. Grapes are selling at from \$15 to \$35 per ton according to variety and demand, very few apples are going to market from Santa Rosa.

Wild Plums and Crab Apples.

EDITORS PRESS:—I see in your issue of Sept. 14th, that Mr. S. M. Martin of Petaluma has sent you a sample of wild plum. You seem to be surprised; having been so often told that the plum and crab apple were not indigenous to California.

There used to be an abundance of wild plums in Scott's Valley, Siskiyou Co., and also in Rogue River Valley, Oregon. There are two varieties, one very dwarf and bearing a bitter fruit. The larger variety produced fruit of fair size and quality. I planted them on my ranch at Crescent City, near the coast, but they were not suitable to that climate. I also tried them as a stock, to graft on, with good success; the smaller variety dwarfed my trees and caused them to bear much younger than the others.

You say you next hope to hear of a native crab apple. There is an abundance of them in Del Norte Co., especially in Elk Valley, near Crescent City. I have often seen them there with bodies a foot or more in diameter, with spreading tops, loaded with small oval shaped fruit, and when ripe, of a bright golden color, and in early days were much used for making jelly. They are found more abundantly on cold wet land, bordering ponds, or marshy land. JNO. MAVITY.

St. Helena, Napa Co., Sept. 16th, 1872.

The remark we made that—it had been so often told us that neither the plum or crab-apple were indigenous to California that we began to believe it—ought to have been understood as ironically spoken; for, to show that we knew better, we have but to refer the doubting to an article of our own writing published in 1858, in the *California Cultivist*, page 11; in which we say—There are among the Sierras, elevated tracts of country above the present limits of our introduced fruits, where the common wild plum, of very fair flavor are produced in great abundance.

And again, on page 242, in which we say—wild plums ripening upon the mountains where they are indigenous, if brought to the tropical warmth of the valleys below, are found to have their fruiting season hastened. And of the wild crab-apple, though we have personally never seen them growing in California, we have no doubt of their being indigenous in certain localities.

IMPORTANT TO BREEDERS.—A fact which breeders of animals should never forget or undervalue was stated by Agassiz, when he said: "No offspring is simply the offspring of its father and mother. It is at the same time the offspring of the grandfather and the grandmother on both sides; in fact this dependence of offspring or liability to produce family characteristics extends much farther up the ancestral line."

An Indian on Raising Peaches.

An Eastern exchange says: On the reservation in Western New York, is a Tuscararo Indian, whom a correspondent of the *Chatauqua Farmer* states, reasons thus in relation to having healthy peach trees, and proves it by his fruit. At all events it is an original idea. He says:

John Mount Pleasant, who has a farm of 200 acres in the southwest corner of the reservation, about five miles from Suspension bridge, told me that he cleared \$2,000 last year from the proceeds of his fruit orchard; and mentioned incidentally, that the chief reason why his peach trees were loaded with fruit while others apparently on the same kind of soil bore nothing, was that in setting his trees he always made a deep hole with a cavity into which he inserted the tap root as deep as possible. He said the nurserymen, in pulling their trees for market, very often cut off this tap root. He would never set out a tree thus mutilated unless compelled to do so; and in that case he would take the longest lateral root he could find and thrust it down into the hole as a substitute for the original tap root. By pursuing this course he uniformly has a liberal crop of peaches. His peach trees are set in alternate rows with his apple trees.

Now while our Tuscararo Indian acted very sensibly, in view of the fact that nature invariably provides the unutilized peach tree with a tap root, to sustain it through seasons of protracted drouth, yet there is no "original idea" about it, except it be that which prompts him to substitute a tap root where the original one is lost.

One of the worst diseases of the peach tree in the Atlantic States—the yellows—has been nearly overcome, by raising trees of more vigorous growth, by planting the seeds of the trees where they are to remain, and allowing the roots their natural position, unchecked and unutilized in their growth.

Why Is It?

Every section has its peculiarities of soil and climatic conditions. Modes of culture in one locality must be very materially changed to render them valuable in another. It is the height of arrogance and presumption to claim that any one of our agricultural or horticultural journals are in reality national in character, and that their teachings are of practical value in each and every section of the country. If this were desirable, such a number of agricultural journals, necessarily sectional in their character, would never have sprung into existence and so fearlessly asserted their right to live and prosper. The sooner we come to recognize this fact the better it will be for the interests of the country.

Heretofore farmers, lured by the belief that advertising journals were really agricultural ones, have given them a liberal patronage. But a manifest change is now taking place, and the question as to the intrinsic merit of the suggestions which appear in the columns of an agricultural paper are discussed in the light of their adaptation to their respective localities. Why is it that the disposition to quote agricultural articles found in journals foreign to their locality has assumed such a chronic character as to attract general comment? Where, we ask, is there such an array of agricultural and horticultural talent as can be found in the fruit and grain-growing regions of the West? Then, why not patronize this talent, instead of ignoring it?—*Colman's Rural*.

SMUT is not a disease, properly speaking, but it is the cause of an injury which may be regarded as a disease. It is a minute fungus, living in and upon the grain, and is propagated by spores, which answer the purpose of seeds. These spores are so very small that they may adhere to the seed grain unnoticed, and from them the smut will be developed more or less abundantly, as the season is favorable or otherwise to its growth. The usual preventive is soaking the seed wheat, just before sowing, in a strong solution of Blue Vitriol (Sulphate of Copper), drying the grain by the use of quicklime.—*Am. Agriculturist*.

GOOD MEN MAKE GOOD HORSES.—A horse is never vicious or intractable without a direct cause. If a horse is restive or timorous, you may be sure that these faults arise from defects in his education. He has been treated either awkwardly or brutally. Commence the education of a horse at his birth; accustom him to the presence, voice and sight of man; speak and act gently; caress him, and do not strike him. All chastisement or cruelty confuses the animal, and makes him wild. They are good men who make good horses.

A GOOD COW IS A VALUABLE MACHINE—the more food she properly digests, the greater the profit.

USEFUL INFORMATION.

Sleeping in Arctic Weather.

The Toledo Commercial publishes a letter written by one of the late telegraphic expedition to Siberia. The writer says:

"You say you can not imagine how we live in such a climate. I couldn't until I tried it. I didn't believe that it would be possible for me to lie out on the snow without shelter in a temperature of even 20° below zero, but I have done it once in 50° below, and repeatedly in 45°. One of Bush's parties, in February of last year, passed the night on an open, barren steppe, with their spirit thermometer standing 68° below zero, or 100° below the freezing point. Quicksilver they moulded into solid bullets with four minutes' exposure to the air. It is true they did not dare to go to sleep that night, but I believe that had they been properly fitted out with heavy furs and wolf-skin sleeping bags to tie over the head, they might have done it with perfect safety.

"I'm afraid you would think that I was availing myself of a traveler's privilege, and relating a very large 'yarn,' if I told you how comfortable I have slept on the snow in temperature of 30°, 40°, and 45° below. We are obliged to sleep in fur bags, of course, with our faces entirely covered, to take the utmost care to have our fur stockings perfectly dry; but I have slept in that way through the long Arctic nights as comfortably as ever I did in bed at home. From September, 1865, until I came aboard the Onward, a few weeks ago, I never slept in a bed, or on anything softer than the snow or a board. So you can imagine that the sensation was a curious one."

How to Destroy Mosquitoes.

A writer in the Scientific American explains his process for destroying mosquitoes:—The strongest crystalized carbolic acid must be placed in a bottle and covered with the same quantity of red cod liver oil. Shake the bottle thoroughly, until a whitish-colored foam appears; if such foam does not arise, however a small quantity of powdered lime should be added with a little water. Pour the mixture into a dish or other convenient article, and place it directly under the open window, as it is from this quarter the mosquitoes enter.

In my humble opinion the effect should be explained in this manner: The moment the mosquito enters, it loses the scent of blood; for, as the combined odor of the oil and acid is much more powerful than that of blood, it follows as a consequence, that the mosquito becomes suddenly perplexed. The consequence is that, after scrambling and skirmishing in the dark, the mosquito is led, as it were, instinctively into the mixture, where it is either drowned in the oil or burned to death by the acid.

Formerly I was accustomed to smear my face, arms, and breast with strong oil alone, but I frequently arose in the morning smelling so terribly that, though it protected me from mosquito bites, I was happy to lay it aside. I have slaughtered more mosquitoes with the article explained above than ever I could have done with my fists or any other dangerous weapons.

PROPERTY IN DOGS.—It is an old and general supposition that the law does not regard dogs as property, and that a dog found running at large in the street is anybody's property. Judge Dowling, of New York, had a dog-stealing case before him last week, in which he stated that a great mistake pervaded the public mind in regard to dogs; that by law they were as much a man's property as his horse or anything else he owned; and moreover stated that in case of killing a dog, unless in self-protection, the party could be made to pay the value of the dog the same as though it were a horse.

THE VALUE OF SMALL FACTS.—Few of us appreciate the value of little things. When Dr. Holmes sketches the enthusiastic Sacrahee, who tells us he could spend a whole life profitably in the study of a single bug, we are apt to smile at what seems to be a frivolous waste of time. Yet it is to these patient, laborious men of science, who pile together one by one the little stones of knowledge, that we are indebted for the glorious temple of progress in which we of the nineteenth century rejoice.

COMMERCE IN POLLEN.—A curious trade has sprung up in a demand for pollen to fructify certain plants. The palm tribe, the Cycadaceae and other greenhouse trees will flourish without producing stamens, and, for want of pollen, will not fruit. Nothing is more common or simple than to advertise in the Gardener's Chronicle for the pollen, for example, of the *Caryota urens*, and other tropical (English) plants, and it is received through the post.

A CEMENT of great adhesive power may be made by rubbing together, in a mortar, two parts of nitrate of lime, twenty-five of water, and twenty of powdered gum arabic, this forming a transparent cement of wonderful strength, and applicable to wood, porcelain, glass and stone. The surfaces to be united should be painted with the cement, and firmly bound together until the drying is complete.

Something About Anvils.

In a deserted shop in Pittsfield, Mass., there rests on its block an anvil that has done duty more than three hundred years. It is as sound to-day as it was in 1633, when Eltwood Pomeroy, after welding for the Stuarts the ponderous horse-shoes of the same style and pattern that his ancestors had made during generations for the Tudors and Plantagenets, grew weary of taxes without law, and work without wages, and anvil in hand sailed for the New World. A deft workman, he threw in the settlements, and left his anvil as an heirloom to his descendants. They show you in the Tower of London the anvil on which the sword was forged that Richard Cœur de Lion used in his contest with Saladin, and at the collection of Pompeian excavations in Naples there is an anvil, certainly older than the Christian centuries, which, of precisely the same shape we use, had evidently done service for stalwart workmen of many generations before the city was buried. But, better still, in the Egyptian room of the British Museum there is a veritable anvil of the Pharaohs. It is older than Rome, older than Jerusalem; as old as the days of Abraham, and probably in existence when the patriarch "was come into Egypt, and the Egyptians he-held Sarah that she was very fair." It is just like a modern anvil, made apparently in the same way, weighing about seventy-five pounds, and sound as it was when struck by the hammer thirty centuries ago.

STOWAGE OF CARGOES.—Much complaint is made of the bad storage of vessels, by the stevedores of Liverpool, Eng. It is thought that many vessels and lines have been lost from such carelessness. One of the Liverpool steamers, recently came near going to the bottom from this cause. The passengers describe the trip as one of constant fear and terrible apprehension. It is asserted that there is no port in the world in which so much had storage of cargo is performed. The Nautical Gazette says: "There are ninety vessels put back from British ports to be restowed where one returns to an American port for the same purpose. The case we allude to is not an isolated one by any means among steamers. It is high time that this matter was looked into on the other side, and if the underwriters have no voice in the matter, then the owners, for their own credit, and for the sake of humanity, should attend to the proper stowage of passenger steamers."

CURIOUS PRESERVATION OF A DEAD BODY.—At South Bend, Ind., the body of a deceased lady, buried ten years ago, was lately uncovered for re-interment, when the corpse was found to be in an excellent state of preservation. Although petrification had not taken place, the body was as perfect as the day it was placed in the coffin. The whole body was perfectly preserved, even to such parts as the tongue, which could be moved back and forth in the mouth. The expression of the face was retained and the color of the flesh was natural, except for its waxy appearance. The shroud, when exposed to the air, fell to dust.

If the chemical nature of the soil were known, and also the medicines administered during the sickness of the deceased, it is possible that the reason for this singular preservation might be ascertained. From the description given, it would appear as if it might be due to the presence of arsenic.

SIMPLE EXPERIMENT TO SHOW THAT AIR POSSESSES WEIGHT.—Place a wineglass full of water in a small flask and heat it until the steam has driven out the air; take it from the water, cork immediately and tightly and set it aside to cool. When cool, balance carefully in a delicate balance; then remove the cork to admit air, place the cork in same balance with the bottle and the additional weight of air admitted into the flask will be sufficient to sensibly turn the scales.

CHOOSING SPECTACLES.—For either short, long, or aged sight, spectacles should be of perfect material, ground to proper focus to suit the peculiar wants of the organ, and thoroughly polished. "Eye sharpeners," as they are called, should never be used without professional advice. The eye is too delicate to tamper with.

KEEP THE MIND BUSY.—When John Adams was ninety years of age he was asked how he kept the vigor of his faculties up to that age. He replied by constantly employing them. The mind of an old man is like an old horse; if you would get any work out of it you must work it all the time.

Few people know, and thousands do not know, that by setting a glass fruit jar on a folded towel, thoroughly soaked in cold water, the fruit can be poured in boiling hot, with no more danger of breaking than with a tin can.—*Exc.*

A NEW green pigment, said to be brilliant, is composed of twenty parts of oxide of zinc and one of sulphate of cobalt, mixed into a paste with water, and exposed to a red heat.

As the decay of wood advances its property of burning with flame diminishes. Carburetted hydrogen is not produced. For the purposes of fuel, decayed or diseased wood is of little value.

A LADY of Rochester, Minnesota, has obtained a patent for a fan, to be attached to a sewing machine and operated by the same power.

GOOD HEALTH.

Slapping as a Cure for Dyspepsia.

Some years ago a physician in New York city published a small book, in which he gave well written certificates of marvelous cures of dyspepsia. Patients began to flock to him. Their introduction to his mode of treatment was very queer. He took the patient into his consultation office, examined his case, and if it was one he could cure, he announced his fee as five hundred dollars, and to be paid in advance. If the patient's confidence was strong enough the money was paid, and then the doctor took him through a hall, up a flight of stairs, through another hall, then through a room, down a flight of stairs, up a flight, then to the right, then to the left, and at last they arrived in a small room without windows, artificially lighted, and in that room the patient was required to put his name to a solemn vow that he would never reveal the mode of treatment.

This being all finished, the patient was introduced to the treatment. It consisted in slapping the stomach and bowels. Besides this the patient was required to live temperately, and much in the open air. On rising in the morning he was required to spend from five to ten minutes in striking his own abdomen with the flats of his hands. Then he went out for a morning walk after having drunk a tumbler or two of cold water. At eleven o'clock in the forenoon he spent a quarter of an hour or more in slapping the howels with his hands. Then he laid down for a rest. He dined temperately at two o'clock, and spent the afternoon in sauntering about. At seven o'clock in the evening he repeated the percussion, and went to bed at nine o'clock. A majority of cases of dyspepsia that sought relief at this establishment had used all the other means except the slapping; that is to say they had lived on plain food and much in the open air.

It was the slapping, the pounding with the fists, kneading with the fists, sometimes with the fists of an attendant, that cured these people, for cured they certainly were. Marvelous cures were effected at this establishment. After the death of their doctor some of the patients felt themselves absolved from the obligation, and one of them described the treatment to me. In every case of indigestion, no matter what may be its character, slapping the bowels with the flats of the hands on rising in the morning, four hours after breakfast and in the evening on going to bed, is excellent treatment. I cannot conceive of a case of chronic indigestion which such manipulation would not relieve.

If the patient be so weak that he cannot perform the slappings or kneadings on his own person, the hand of a discreet assistant should be employed. It is marvelous how the body, the stomach for example, which, when these manipulations are first practiced may be so very tender that the slightest touch can hardly be borne—it is marvelous how in two or three weeks a hlow almost as hard as the hand can give is borne without suffering. If you have a pain in the side or across the chest, percussion will relieve it almost immediately. But constipation, dyspepsia, torpidity of the liver and other affections of the abdominal viscera are relieved more surely and completely than any other class of affections by percussion, kneading, etc. Such treatment comes under the head of counter-irritation. A new circulation is established in the parts near the point of suffering and congestion. Besides this especially in abdominal troubles, the manipulations appeal directly to the contractility of the weak relaxed vessels in the affected part.—*Dio Lewis.*

Effect of Alcohol and Exercise.

At a recent meeting of the Royal Society, a paper on the "Further Experiments on the Effect of Alcohol and Exercise on the Elimination of Nitrogen, and on Pulse and Temperature of the Body," was presented by Dr. E. A. Parkes. It contained a detailed description of experiments made on a soldier, a Scotchman, who had been brought up on oatmeal and milk, and who at one time had been in the habit of taking more than a fair amount of whiskey. As a soldier, however, he bears the character of a steady man in the enjoyment of perfect health. His experience as to the effect of alcohol is noteworthy. He commenced the exercise and brandy period of the experiment with a belief that the brandy would enable him to perform the work more easily, but ended with the opposite conviction. The brandy was taken in 4-ounce doses at 10 A.M., 2 P.M., and 6 P.M., in an equal quantity of water, and the work was chiefly done in the two hours immediately succeeding each dose, and from 6 to 8 A.M. The two hours' work from 10 A.M. to 12 M., immediately after the first four fluid-ounces of brandy, was, he thought, done equally well with and without the brandy. The man affirmed that he could tell no difference, except that, to use his own words, "the brandy seemed to give him a kind of spirit which made him think he could do a great deal of work; but when he came to do it he found he was less capable than he thought." After the second four ounces of brandy he felt hot and thirsty; but on the first two days he thought he worked as well as on

the "water" days; on the third day, however, he had palpitation of the heart, and was surprised he had to stop from time to time, because, to use his own words, "of his breathing not being so good."

The third four fluid-ounces of brandy at 6 P.M., produced on all three days very marked narcotic effects; immediately after taking it he became heavy, felt the greatest indisposition to exert himself, and could hardly refrain from throwing down his spade and giving up work.

He worked with no vigor, and on the second evening thought his muscular power decidedly lessened. On the third evening, as it was raining he could not dig, but took walking and running exercise under cover. On attempting to run he found, to his great surprise, as he is a particularly fast and good runner, that he could not do so; on attempting to run he had palpitation and got out of breath, and was obliged to stop, so that, he stated, on the next day, "if he had his accoutrements on and been ordered to 'double,' he could not have obeyed the order." After coming in from work on each evening he fell into a heavy sleep, from which he was roused with difficulty. This lasted for three or four hours, after which he was restless and sleepless.

The man's own judgment was, at the end of the trial, that he would prefer to work without the brandy; and when asked his reasons, he mentioned "the increased thirst, the heaviness in the evening, and the fluttering at the heart."

Mortality in San Francisco.

The annual report of the Health Officers, for the year ending June 30th, 1872, is a complete and interesting document, giving a detailed report of the mortuary and sanitary condition of the city.

Deaths the Past Four Years.

The total number of deaths during the year was 2,998. The preceding year we had 3,214; in 1870, 3,243; and for the year ending June 30th, 1869, the deaths number 4,093. Thus it will be seen a constant improvement in the mortality of our city has been going on during the last four years, notwithstanding the steady and considerable increase of population—our last year showing a less number of deaths than either of the preceding three years.

This is believed to be the best showing that can be truthfully made for any city in the United States, if not the entire world; and though our mortality is already so small proportionate to that large population, Dr. Bates believes that if we even had a moderately well sewered city we could boast without the fear of contradiction from any source of having the healthiest city in the known world. St. Louis is the only city of which we have any knowledge, that reports a less percentage of mortality than San Francisco, which can be accounted for by the fact that their system of sewage is greatly superior to ours; in fact St. Louis is said to be the best sewered city in the United States.

We have had a decided increase of cholera infantum which is to be attributed in a great measure to improper food and care of infants while teething, but more particularly to the poisoned atmosphere, which is the consequence of

Lack of Proper Sewage.

Of ninety-one deaths, the Second, Tenth, Eleventh and Twelfth Wards furnish more than one-half, and from the fact that these wards have very little sewage that is of any account. The number of deaths from typhoid fever is still larger than it should be, but we cannot hope for much diminution until a better and more general system of sewage is carried out. The general improvement in the mortality of our city during the past few years is almost entirely attributable to the increase of our private and public sewers and the connection of private drains and cesspools with the main street sewers.

A Bee Sting.

The sting of a bee, says the Country Gentleman is naturally more violent than that of a wasp, and with some persons is attended with fatal effects. Two deaths from such a cause have recently occurred. The sting of the bee is barbed at the end like a fishhook, and consequently is always left in the wound; that of a wasp is pointed, so that it can sting more than once, but a bee cannot. When a person is stung by a bee, let the sting be instantly pulled out, for the longer it remains in the flesh the deeper it will pierce, and the more poisonous it will become. The sting is hollow, and the poison flows through it, which is the cause of the pain and inflammation. The extracting of the sting requires a steady hand, for if it breaks in the wound the pain will continue for a long time. When the sting is extracted, suck the puncture, and thus prevent inflammation.

Spirits of hartshorn, if applied to the affected part, will more fully complete the cure. The poison is acid, and the alkali will neutralize it. If the hartshorn is not at hand, saleratus can be wet and laid upon the place; and soft soap will often ease the acute pain. On some people the sting of bees and wasps has little effect, but it greatly depends upon the state of the blood whether it will prove injurious, and these simple remedies, if applied at once, will soon effect a cure.



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SAN FRANCISCO:

Saturday, Sept. 28, 1872.

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scribe, we believe will more rapidly extend our list.
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once if fully acquainted with the benefits to be derived
from our columns.

ALFALFA ROOTS.—Mr. Riote, of Oakland, de-
sires perhaps of ascertaining why alfalfa con-
tinues green during the whole summer, pulled
or dug up an alfalfa root, and found it six feet
long, three months after planting. From a
Truckee paper we learn that alfalfa roots
washed out of the bank of a mining claim were
15 feet in length.

We can beat this by five feet. The old *Cul-*
turist makes mention of alfalfa roots that in con-
sequence of a break in a mining ditch a deep
gully was cut, the roots of alfalfa of two years
from seed, could be distinctly traced a depth
of 20 feet perpendicularly and almost filling
soil and subsoil with its masses of small hori-
zontal rootlets.

INQUIRY.—A correspondent who "firmly be-
lieves the *RURAL* is the paper for all classes,
desires our opinion of the merits of Warren's
Cooker and the Lawn Sprinkler, described in
Sept. No. of *American Agriculturist*.

We have no personal knowledge of their mer-
its, but know they are well spoken of by the
press generally.

No SIGNATURE.—A letter was received from
Los Angeles, in which Mr. Muller's name, of
Nevada, is used in connection with silk culture,
cannot be answered because the writer omitted
to give his name.

Our Fruits.

The Principal Varieties in Demand this Season;
the Growers; where Grown; Average Daily
Receipts.

California is a land of fruit and grain,—of
fruit perhaps even more than of grain, inas-
much as millions of acres of hill lands, the
larger proportion in fact of the area of the State,
are capable of being used for purposes of fruit
cultivation, where otherwise they might for-
ever remain unutilized.

The present status of fruit-growing is suffi-
ciently evident from the fact that the lower
part of our city, for weeks and weeks, has been
converted into one vast fruit market,—fruit,
fruit, everywhere, overshadowing even wheat.
And, thinking that our farmer friends in one
section of the State would wish to know what
those in the other were doing in this connec-
tion, we interviewed one of the largest fruit-
buying firms in this city, who kindly supplied
us with the following items regarding the choice
fruits that have been in demand this season,
where they have been grown, who has grown
them, etc.

Grapes.

The principal kinds sold in this market are
Muscat, the Tokay, the Isabella, the Sweet-
water, the Black Hamburg, the Rose of Peru
and the native or Mission grape. The Muscat
and the Tokay come principally from the up-
per Sacramento, Vacaville, and from Sonoma
county. The Muscat is white, large and full,
is a good-keeping grape, and is used for the
manufacture of choice wines. The Tokay is a
splendid table grape. It is large and red, and
will last till Christmas, if the frost and the
rains do not come in early and kill it. Some-
times it is quite plenty at Christmas.

The Isabella grape is grown in Santa Clara;
it is a black grape, possessing a peculiar flavor.
Amongst the other black grapes, the Black
Hamburg and the Rose of Peru are super-emi-
nent. They are large, fine grapes. The Sweet-
water is cultivated chiefly in Sonoma county,
is the first grape that comes in, and is one of
the finest varieties in the State. It will last till
October and November. The native grape, in-
troduced first by the Missionaries at Santa
Barbara, is well known; it is the principal
wine grape, the other varieties being raised
chiefly for table and market use.

We receive our largest supply of grapes from
Sonoma and the bay counties. Los Angeles
used to supply us with a large quantity, but
the distance is too great to sell them here now
with profit. Accordingly, Sonoma has taken
its place. There are two hundred to three hun-
dred growers in Sonoma, of whom only two or
three sell in this market, the rest converting
their grapes into wine. Hill is one of the prin-
cipal growers in that county.

From Solano County one hundred different
parties ship grapes to this market. From
Vaca Valley, Miller is the principal shipper,—
sending from 5,000 to 10,000 boxes to this mar-
ket every year. The grapes come in boxes of
from thirty to forty pounds each, by rail,
steamer and sailing craft, and generally arrive
in good order. They are nearly all bought for
immediate consumption, but the Italian board-
ing houses in the lower part of the city buy
large quantities for making wine for their cus-
tomers, some buying 2,000 or 3,000 boxes a
year.

Pears.

The Bartlett this year takes precedence of all
others, which have been to a certain extent ne-
glected, through the almost universal prevalence
of its culture. It is grown principally in the Bay
counties—Alameda, Santa Clara, Sonoma and
Napa. The principal growers are Hill and Ryan
of Sonoma, Smith of Sacramento, Watkins and
Gould of Santa Clara, Jones of Napa, and R. B.
Woodward of the Oak Knoll ranch, the largest
fruit ranch in Napa. It has paid better than ever
this year. There is a large and increasing demand
for it East. One firm in Sacramento this year
sent 13 or 14 car loads of it by rail overland. It
is shipped to New York, Omaha and Chicago.
During the season the receipts in this market
have been from 1,000 to 1,500 boxes daily, and
they are now from 100 to 150 boxes a day. It sells
for \$2 where other pears only bring from fifty
cents to \$1.

Poaches.

The Tillotsons and the Strawberrys come in
first, and are succeeded by the early and late
Crawfords. The Tillotsons are small and
watery, and do not keep long. The Strawberrys
are small and good looking, and keep pretty

well. The Crawford is a large, yellow peach;
some specimens weigh half a pound. The
peaches sold in this market come principally
from Old River and the Sacramento. The steam-
boats as they go up the river load from ranch to
ranch. Several ranches have from 7,000 to 8,-
000 trees bearing every year. Messrs. Solomon
Runyon, A. Runyon and J. Runyon, the prin-
cipal growers, have from 25,000 to 30,000 trees
in bearing, and frequently send down 1,000
boxes a day. The other principal growers are
Messrs. Brown and Hollister, of Sacramento.
The receipts this season have aggregated from
3,000 to 5,000 boxes per day.

Apricots.

The apricots sold in this market come prin-
cipally from Old River. This year the crop has
failed in nearly all the fruit districts. The
principal kinds grown are the Royal and the
Moore Park. The former is a round, yellow
apricot, and has a rosy cheek on one side. The
latter is the largest kind in the State, and is
grown in Sonoma and Napa. This year the re-
ceipts have been insignificant, but last year
they aggregated 1,500 to 2,000 boxes a day.

Plums.

Plums are grown all over the State, but prin-
cipally at Old River. Gould and Watkins are the
principal shippers to this market. The prin-
cipal kinds are the Washington, a large white
plum; the Jefferson, much like the Washington,
the common Greengage plum, the Bradshaw
plum and the Hungarian plum, the two latter
are oblong and of a dark color, and the Blue
Damson, a small round plum. The Hungarian
prune variety comes principally from Oak
Knoll ranch, near Napa. During the season
we receive in this market about 1,000 packages
a day. Only a very few are now coming in.

Apples.

Nearly every month in the year we continue
to receive large quantities of this oldest and
best known of fruits, which is grown in every
county in the State. The principal kinds com-
ing to market this year have been the Bellflower,
a fine flavored fruit, equally well suited for
cooking and eating, the Fall Pippin and the
Rhode Island Greening, both excellent cooking
and eating apples, and the Gloria Mundi, the
pride of pomoculturists, the largest apple in
America, specimens of which generally weigh
about a pound each. The principal apple
growers in the State who sell in this market are
Woodward of the Oak Knoll ranch, the De
Longs, James of Napa, and Blackwood, of
Santa Cruz. The daily receipts during the
fruit season are from 1,000 to 1,500 baskets per
day. They will continue at this rate for two
months.

Oranges and Lemons.

The golden fruits of the golden South begin
to come in from Los Angeles about the middle
of December, and their receipt lasts till about
July. Last year there were received in this
market 4,500,000 of the former, and 500,000 of
the latter. The largest groves of oranges are
those of Messrs. Wilson & Wolfskill, and of
lemons, M. Keller.

Cherries.

These most popular of fruits are grown in
immense quantities, principally in Alameda,
Colusa and Sonoma. They come across the
bay in 25 lb. boxes, and in chests of from 100
lbs. to 150 lbs. each. The daily receipts during
the season average 300 boxes and chests, and
cease after the fourth of July. The best and
most marketable kinds are the Black Heart,
the Ox Heart, the Napoleon Bigarreau and
the May Duke. Pepper, of Sonoma, is the
largest grower in the State.

Miscellaneous.

Figs are grown in many localities, and attain
a splendid size and flavor. The common
black fig sells best. The White Smyrna, or Su-
gar fig is a fine large fruit.

Nectarines, white and red, are received every
year in large quantities from Sacramento, So-
noma and Napa counties.

Quinces are also received in considerable
quantities from all the bay counties. The best
known varieties coming to market the present
season, are the Apple, Pear and Orange quinces.

In referring thus briefly to the principal kinds
of fruits that find a market in this city, we have
aimed in some measure to supply

A Want

Felt by all new settlers in the State. Coming
from the East and from Europe, they encounter
entirely different conditions in their farming
and horticultural operations from those to
which they have been accustomed. And we
shall be very much pleased to receive fuller and
more interesting details on the subject matter
of this article from our numerous readers and
correspondents throughout the State.

Attention! The Six Hundred.

This is intended more particularly for our
over six hundred agents of the *RURAL PRESS*.
Our new volume commences with January, 1873.
Every reader of the *RURAL PRESS* during the
last year, though he may not have been a sub-
scriber, has doubtless determined to take at
least one good agricultural paper for the next
year.

There are some who will take more than one;
but that our agents make sure that one of these
be the *RURAL PRESS*, let them give their atten-
tion at once to those within the circle of their
acquaintance and soliciting districts, and get
the first subscription of every one desiring to
read an agricultural paper; for the probability
is that once beginning with the *RURAL*, they will
soon determine that as a Farmers' paper it just
"fills the bill."

Early at Work.

Of the liberal offers which we make in our
columns, under the head of SCATTERING SEEDS,
our regular subscribers will doubtless avail
themselves. This will be the means of bring-
ing our paper to the notice of thousands who
now only see it occasionally.

It is important that agents go to these, who
will from this time on be receiving the paper
gratuitously, and solicit at once their subscrip-
tions to commence at the end of one and three
months as referred to in our offer. It is im-
portant that our agents call before others; not
that our paper will not be appreciated over any
other on this Coast, but because men are some-
times inclined to subscribe to the first paper
offered, and then decline a second though it
may be much the best of the two.

The Places to Work.

There is nothing like being on hand at Fairs,
Farmers' Clubs, political gatherings of the peo-
ple, and at all manner of elections, be there
with subscription book and pencil in hand, and
call upon every one who takes the *RURAL* to
renew his subscription, and upon those who
never have taken it, to subscribe.

Be courteous ever, but at the same time earn-
est. Men that are men, will subscribe more
readily at the solicitation of an agent who has
some "snap" in him and up to time, than one
who has no idea of either. Don't let it be told
you that the agent of this or that agricultural
paper is just a little ahead of you.

With this number of the *RURAL* we commence
the campaign for 1873; we wish our numerous
patrons to expect to see our agents at any mo-
ment, for their employers, "know they're out,"
and that they are determined to increase our
subscription lists by many thousands. We rest
the onward progress of the *RURAL* on its mer-
its.

State Fair Art Gallery.

The managers of the State Fair very correct-
ly consider improvement in the fine arts
among the objects worthy of their special en-
couragement. They very properly believe in
intermingling the poetry of life with the prose.
Hence we find under judicious management
the Society's art gallery has been greatly im-
proved and enlarged and the lights have been
arranged after the most approved style. The
artists appreciate this kind attention and have
come forward this year and contributed nobly
from their studios to make the art gallery a fea-
ture of the Fair. We like this idea of showing
the fine arts in the same room with other ar-
ticles of a light and elegant character. It com-
bines the useful and beautiful as they should
be combined in all the every-day matters of
life.

The art gallery at the Pavilion, forms a most
excellent and appropriate background to the
brilliant exhibition of fruit, furniture, and
other articles in front. The exhibition of oil
paintings and photographs is much larger and
better this Fair than ever before.

Thoroughbred Sheep.

The flock of thoroughbred Spanish Merino
sheep, of Smith & Overheiser, of San Joaquin
county, numbers 1,500 head. This is the lar-
gest flock of thoroughbred sheep in the United
States. These gentlemen have this season
already sold over 500 rams to the different
sheep-men of the State. They are of the Pat-
erson importation, and have been very care-
fully and judiciously bred for a long series of
years, and in quality as well as numbers, this
is one of the best flocks of Spanish Merinos in
the United States. They show a large num-
ber at the Fair.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING AUGUST 27TH, 1872. *

CONVICT'S SHACKLE.—Peter Runquist, Steilacoom City, W. T.

HARNESS-SADDLE.—George W. Dutton, Tomales, Cal.

HARROW.—James Harris, S. F., Cal.

HORSE-COLLAR.—Pemberton B. Horton, S. F., Cal.

FRUIT-BOX.—Charles W. Weston, S. F., Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Both Sides of the Question.

The columns of the RURAL are ever open to calm, discriminate discussion of all subjects pertaining to the advancement of agriculture. The subject of steam plowing is now receiving unusual attention, and some of the best mechanical minds of the country are awake to its importance; and because it is so, we think it the proper time to give all the information we can obtain in regard to it.

If we do this, as faithful chroniclers of what is going on in the world in this particular line of invention, we must give both sides of the question, the success as well as the ill-success of those who have preceded us, benefiting by their successful inventions, and learning from their ill-success, what to avoid.

If then we ask the question, why is it that after repeated trials of Fowler's English plow in the United States, that it is not generally adopted? We see no reason why anyone should suppose us opposed to the system. If we doubt whether the Fowler system will ever be popular here, it is not because we are opposed to steam plowing. What we want is something by which plowing can be done cheaper and better than with animal power.

If there is a steam plow in the United States that is a success, in the California acceptance of the term, let our farmers see it; but can we not say this, without being considered as opposed to steam plowing?

Silk Culture.

We have always doubted the success of silk culture in California on the grand scale that many proposed, with immense cocoeneries and worms by the millions under one roof, and feeding successive crops of worms from April to September. But we are not opposed to silk growing in California; because we believe that when prosecuted as in other countries, it will be equally a success as in those countries. The trouble is, these new industries are, with the most of us mere experiment.

If now we call upon Mr. Neuman to tell us of his success in his late experiment of feeding silkworms in this city and he fails to show any success whatever, but rather another complete, disastrous failure, it need not be said that we are opposed to silk growing in California or that we write on both sides of the question.

Contra Costa Fair.

We were not able to attend the late fair of Contra Costa county, owing to the fact that the fairs of the different Bay counties were this year so arranged as to time as to make it quite impossible that we could be at them all. We learn, however, that the fair was eminently a success, being fully equal to any preceding one, except perhaps in the exhibit of fruits; and though the specimens on exhibition were very fine, and highly creditable to the growers, yet the display lacked in quantity.

Year by year, one of the most attractive features of the Fair is the display of the handiwork of the ladies and young misses, and is exceedingly creditable to their good judgment and taste; and which was this year better than ever before, and speaks well for their progress in their own especial department of industry.

Dairy Products.

The exhibit in this department was not large, but was of the very finest description as regards quality, showing that a complete knowledge of what constitutes good butter and the way to make it is known and put in practice in Contra

Costa county, and excelled nowhere in the State.

Field Products.

There was the usual display of large and excellent vegetables, beets, potatoes, pumpkins and grains; whilst in the fruit department there were many beautiful samples that would be hard to beat, and that furnish unmistakable evidence of adaptation of soil and skillful culture.

In every respect the display was highly pleasing, and certainly creditable to those having the society's interests in charge, considering the means placed at their disposal.

Beginning of a New Industry

It is necessary, after each rainfall in the South, to go over the cotton fields with a hoe. This drawback which is one of the most costly and tedious items the Southern cotton-planter has to contend with, is not encountered in the growth of cotton in California. It is not planted here until the rainy season is over, and is picked before the first fall rains descend. The ground need only to be worked twice in this State, and, instead of the tedious hoe and expensive attendant labor, plows can be used.

The certain absence of rain here during the picking season, renders the expensive process requisite in the South, and known as "moating," unnecessary. This process consists in the separation of the rain-stained cotton from the pure. There are large tracts of land in the southeastern counties of the State (much of it still being public and therefore open to pre-emption), which, if planted in cotton late in April, will yield 450 pounds to the acre, no irrigation being requisite other than that which the clouds afford in ordinary seasons of rainfall. It is stated that one plowing will be ample, but we presume that point is still open to some doubt. Seven and a half cents per pound is said to be a liberal estimate of the cost of raising, picking and baling cotton in Kern Valley, after the ground has been once thoroughly broken, while cotton cannot be produced in any portion of the South for less than twelve cents per pound.

We Must Manufacture.

Specimens of California cotton, of this season's growth, from Dixon seeds, have been exhibited here within a few days. Although it was planted three weeks later than it should have been, and its culture and growth were attended with the usual drawbacks incident to all new crops, the specimens received are unusually white and silky, and the fibre long and exceedingly fine.

And, now that the success of this new staple has shown that our soil is wonderfully suited to its growth, while the profits attending its production are larger perhaps than those from any other agricultural staple we produce, the question suggests itself:

What are we going to do about it? Is the most of our cotton, like the most of our wool, to be sent abroad for manufacture, to support mechanics and merchants who are thousands of miles away from us, and to aid in supporting rings which put tonnage up to extravagant rates? Or is it to be manufactured here, thus affording employment to hundreds or thousands of home operatives? The growth of the cotton here is only one, and the crudest of the advantages which may be derived from that staple.

Water-power is abundant contiguous to the sections where it is grown, and should be utilized by the establishment of cotton mills. The price of fuel in this city is not near so high either, but that other factories—like the Oakland bagging establishment—may be set in operation, now that we are sure of an abundance of home-grown cotton.

Hundreds of now idle boys and girls could most profitably for themselves, and with equal profit to the community, in both a pecuniary and moral sense, be employed in cotton factories, which are the safety-valve for the children of the poorer classes in Massachusetts and Rhode Island.

We urgently call the attention of men of means to these facts. Employment for boys and girls must be found here, and can only safely and surely be found in manufacturing enterprises. It is therefore the duty of every one interested in our moral and material progress to aid in the establishment of these much more generally than they have heretofore done.

Bulletin.

OUR FRUITFUL LAND.—There was unusual activity in the wheat business yesterday, says the *Chronicle* of the 25th, the immense receipts requiring a large force of employes to transfer them from the different vessels and cars which came in heavily loaded. At the No. 1 Mission Bay Warehouse, near Long Bridge, owned by the Central Pacific Railroad Company, and leased by Mr. I. Friedlander, there were five schooners, three barges, two small steamers and twenty-two cars unloaded of their valuable freight. The cars were run into the warehouse, and the balance was placed on the wharf to await removal. There were also forty car loads of wheat sent off to another warehouse. One of the barges, the "Yolo," had on the great amount of 11,000 sacks, which, allowing 120 pounds to the sack, would give 1,320 tons, the largest cargo yet reported.

AGRICULTURAL NOTES.

CALIFORNIA.

HUMBOLDT.

Times, Sept. 14: FRUIT AND VEGETABLES.—The display of these in the markets about town is evidence that Humboldt county only needs the friction of industry to bring it out. Its capacity is just beginning to be tested in the way of raising farm products. The fallacy of the idea has been over and again proved, that a man must have either a large capital or a large farm to begin with to realize a handsome yearly income for his labor.

In an occupation that Nature so willingly lends herself to the coöperation and assistance of those who take advantage of her help, as in that of cultivating fruits, flowers and vegetables, there is no excuse for a failure of success, even with one who does not know as much about farming as Horace Greely.

In addition to the profits of this occupation, there is a keen pleasure in witnessing the unfolding and growth of plants, which is suggestive of a perfection of taste and skill unattainable in any other calling.

Commencing life on a farm with willing hands and persevering industry, though it contain but a few acres, is as sure a road to competence, as a bank stock investment, and a more satisfactory one, for the labor of the farmer not only benefits himself, but is addressed to the multitude. These hills of Humboldt could be made like pictures upon a house wall, and far more beautiful.

What a public benefactor is he, who, at the same time he is enriching himself and family, is beautifying the landscape, and adding his exertion to the wealth of the country. It is a necessity and duty of every permanent citizen, whether man or woman, to own and improve from year to year a patch of ground if it contain no more than a quarter acre.

THRESHERS WANTED.—We understand that large quantities of grain are remaining in the fields in the vicinity of Arcata, for the want of threshing machines to thresh it.

MERCED.

Argus, Sept. 21st: THE HARVEST.—Messrs. Delashmutt & March, who are running a threshing machine in this neighborhood, inform us that they have engaged threshing that will occupy the time of their crew and machinery for three or four weeks longer. Other threshers report about the same condition of things in this section of the county, which will carry the harvesting season long past the time when seeding for the next year's crop usually begins. The crop is far greater than ever before in this valley, and the acreage next year will be fully double that of the present season. Should the coming season prove favorable, a large number of workmen in addition to those now in the country will be required to harvest the crop of 1873, and farmers should organize so that a united effort can be made to obtain the help required at reasonable prices. Will they do it?

SAMPLES OF COTTON.—We are in receipt of samples of cotton of this season's growth from the fields of C. S. Peck and Wm. Farrell, both of which are as handsome as could be desired. The staple is long, fine and purely white, and will undoubtedly bring a handsome price in the market. The result of the experiment in cotton culture here this season, together with the high price it is likely to bring, will undoubtedly encourage our people to plant largely next year, as it is the most profitable crop that can be raised in this valley.

COTTON PICKING.—Col. Strong informs us that he has commenced picking cotton, and that the yield is very good. The staple will rank high in the market, and the crop of this county this year will be sufficiently extensive to make it an object to manufacturers. The crop is turning out well everywhere in the county, and the product of the Merced plantations alone will be worth in the market not less than \$30,000—a sufficient inducement to farmers, we think, to plant on quite an extensive scale next season.

NEVADA.

Republican, Sept. 19: EXTENSIVE SALE OF LUMBER PROPERTY.—It is reported on good authority that the Truckee Lumber Company have negotiated their entire lumber and manufacturing business in this place to J. G. Bryant, of Salt Lake City. The sale, if consummated, involves a large amount of productive property. We do not know the exact amount paid, but it is necessarily large. Messrs. Brickell & Hoadley have done and are doing a large and successful business, which has been increasing rapidly the present season, and they have in their employ about 100 men. Mr. Bryant is extensively engaged in the lumber trade at Salt Lake, and is thoroughly conversant with the same. He is also one of the Directors of the Second National Bank at Salt Lake, is a man of position and energy, and will bring all the capital necessary for the vigorous prosecution of the business.

EMIGRANTS FOR SIERRA VALLEY.—A number of emigrants from the State of Nevada left town this morning for Sierra Valley. There is room in that valley for several thousand industrious men and women who are willing to engage in farming.

TULARE.

Times, Sept. 21: SECOND GROWTH.—The oak trees in this vicinity, instead of robbing themselves in the traditional sombre garb of dreary brown, supposed to be appropriate to this season, and shedding their leaves, seem to think it is spring, and are putting forth a luxuriant second

growth of leaves. These young and tender leaflets of the most delicate green present a decided contrast to the old ones which have been scorched almost black by the fiery suns of the last two months. Truly our region is one of wonders. On our mountains the snow never melts, and in our valleys the roses never fade. Green leaves and bright flowers burst forth in autumn as in spring, and the "melancholy days" of other lands are the brightest of the year.

STANISLAUS.

News, Sept. 20th: A HEAVY FLEECE.—On last Tuesday we visited the ranch of C. C. Baker, some seven miles from this place. Mr. Baker owns not only a valuable ranch, but is also the possessor of a flock of some three or four hundred head of fine graded Spanish Merino sheep. Whilst there in company with two other gentlemen, we witnessed the shearing of his premium Spanish Merino buck—Silver Mine Jr. The fleece was taken off in our presence, neatly tied up and weighed; its weight being thirty-eight pounds. Mr. Baker also shaved two others of his fine bucks. The respective weights of their fleeces were thirty and thirty-two pounds. Making the aggregate of the three fleeces one hundred pounds. This we consider hard to beat in any country. Mr. B. is putting up extensive improvements on his farm, consisting of a fine two-story brick residence, and large outhouses. He is going into the business of raising fine, graded sheep on quite a large scale. Considering his vast experience in the sheep and wool business, we have every confidence in his success. With fine-wooled sheep and our extensive grain fields Stanislaus certainly bids fair for the future.

COL. C. DORSEY, of this county, has been elected President of the San Joaquin Valley District Fair.

MR. JOHN MITCHELL is erecting at this place a large warehouse, for the storage of his extensive grain crop, grown near this place.

A TRIP through the farms convinces us that there is yet a large quantity of grain in this portion of the valley unthreshed. Especially is this the case on the road from this place to Tuolumne City.

SAN JOAQUIN.

Independent, Sept. 21: CHICORY FACTORY.—The chicory factory erected by Raab, Meine & Co., is now in active and successful operation. About two weeks ago the firm shipped thirty-five barrels of chicory, and next week they will ship about seventy-five more. A barrel contains about 150 lbs. of the manufactured article. They have two mills capable of producing three tons per day. The green chicory is dried in kilns erected on the premises. Mr. Meine, a member of the firm, started the first chicory factory in California.

Republican: MUCH HAY.—Wheat is not the only important production of this valley, by any means. An immense quantity of hay for home use and for export is used here. Mr. Bugby, the owner of the hay scales upon which nearly all the hay comes into the city is weighed, informs us that for the past month the receipts are constantly increasing. It is worth here from eight to ten dollars per ton.

NEVADA.

Enterprise, Sept. 21: The pasturage in the flats about the summit of the Sierra Nevada Mountains is said to be most excellent at present. Although the nights are becoming quite cold, the herders say they would rather be up in the mountains than anywhere else. The herders who are in the valleys above Lake Tahoe say that grouse are very abundant this season. Deer frequently approach their camps and occasionally a cinnamon bear makes his appearance. The grizzly bear is not so common in the Sierras as in the Coast Range Mountains. Good sport can be had almost anywhere among the flats on the summits of the Sierras at the present time. The laws of both this State and California now allow of the shooting of all kinds of game.

Yesterday being Friday there was a fine display of fish in all our markets. There were to be seen not only trout from our mountain lakes and streams, but also salmon, sturgeon and other fresh water fish from the Sacramento river and other streams in California, with at least twelve specimens of salt water fish from San Francisco. There are a dozen or more dealers in fish in this city, and when we say that a single dealer often receives on a Thursday evening or Friday morning, 2,000 or 3,000 pounds of fish, some idea of the importance of the trade may be gained.

A WOOL COMPANY.—The Pacific Wool Growing Company has filed its certificate of incorporation in the County Clerk's office of this county. The objects for which the corporation has been formed are "to raise sheep and grow wool—raise horses and cattle and other live stock." The capital stock is \$120,000, divided into 1,200 shares. The following named Trustees were elected: J. H. Fish, A. Pierce, S. Jewett, James Drury and B. R. Boynton.

WE ARE obliged to defer for another week an excellent article from the pen of L. J. D. We are in the midst of agricultural fairs, County, District and State, that claim our immediate attention or we get behind the stirring news and events of the times.

In this world, full often, our joys are only the tender shadows which our sorrows cast.



The Garden of Childhood.

I know a garden of fragrance,
A garden of golden bloom,
There is sunshine wreathed in the roses,
And stars aglow in the gloom.
I know the pathways, turn by turn,
Far back in the long ago
I used to chase the butterflies there,
And watch for roses to blow.

How balmy sweet, in the olden time,
The breath of those dainty flowers;
The moments fell with a silvery chime
To sleep in the golden hours;
And the lilies used to love me then
As they leaned across my feet,
To hold me back in the pathway fair,
For they knew the hours were fleet.

As the lilies faded and died away,
And the roses side by side
Have faded year by year, to-day
I am left in the eventide;
If I know the garden so well, so well,
I never may enter there.
But morn by morn at the gateway still,
I can see the children fair.

Step down through the gilded blossoms,
With their faces all aglow,
And I look back through the broken days
To that time when mine was so:
And I wonder oft and oft again,
If the lilies bend as fair
To the little children in their flight
As they did when I was there.

I wonder now if the yellow gold
On the wings of the butterflies—
(I used to think them floating stars
Astray in the silvery skies)—
Spills down on the lily-cups of dew,
As they drift away in the light,
To find their homes in the isles of blue
Asleep on the verge of night.

Oh! I'm sad, so sad at heart,
For they cannot bring me back
What the lilies say to the roses now,
Or the sweetness life may lack.
I know the path to the garden,
But the children can only go,
Passing me by as I sit alone,
And I weep in the evening's glow.

The Loneliness of Farm Life in America.

An American traveler in the Old World notices, among the multitude of things that are new to his eye, the gathering of agricultural population into villages. He had been accustomed in his own country to see them distributed upon the farms they cultivated. The isolated farm-life, so universal here, either does not exist at all in the greater part of continental Europe, or it exists as a comparatively modern institution. The old populations, of all callings and professions, clustered together for self-defence, and built walls around themselves.

Out from these walls, for miles around, went the tillers of the soil in the morning, and back into the gates they thronged at night. Cottages were clustered around fencible castles, and grew into towns; and so Europe for many centuries was cultivated mainly by people who lived in villages and cities, many of which were walled, and all of which possessed appointments of defence.

The early settlers in our country took the same means to defend themselves from the treacherous Indians. The towns of Hadley, Hatfield, Northfield and Deerfield, on the Connecticut River, are notable examples of this kind of building; and to this day they remain villages of agriculturists. That this is the way in which farmers ought to live, we have no question, and we wish to say a few words about it.

Preference for City Life.

There is some reason for the general disposition of American men and women to shun agricultural pursuits which the observers and philosophers have been slow to find. We see young men pushing everywhere into trade, into mechanical pursuits, into the learned professions, into insignificant clerkships, into salaried positions of every sort that will take them into towns and support and keep them there.

We find it impossible to drive poor people from the cities with the threat of starvation, or to coax them with the promise of better pay and cheaper fare. There they stay, and starve, and sicken, and sink. Young women resort to shops and

factories rather than take service in farmer's houses, where they are received as members of the family; and when they marry, they seek an alliance, when practicable, with mechanics and tradesmen who live in villages and large towns.

The daughters of the farmer fly the farm at the first opportunity. The towns grow larger all the time, and, in New England at least the farms are becoming wider and longer, and the farming population are diminished in numbers, and, in some localities, degraded in quality and character.

Isolation is a Crime.

It all comes to this, that isolated life has very little significance to a social being. The social life of the village and the city has intense fascination to the lonely dwellers on the farm or to a great multitude of them. Especially is this the case with the young. The youth of both sexes who have seen nothing of the world have an overwhelming desire to meet life and to be among the multitude.

They feel their life to be narrow in its opportunities and its rewards, and the pulsations of the great social heart that comes to them in the rushing trains, and passing steamers, and daily newspapers damp with the news of a hundred brows, thrill them with longings for the places where the rhythmic throb is felt and heard. They are not to be blamed for this. It is the most natural thing in the world.

If all of life were labor—if the great object of life were the scraping together of a few dollars, more or less—why, isolation without diversion would be economy and profit; but so long as the object of life is life, and the best and purest and happiest that can come of it, all needless isolation is a crime against the soul, in that it is a surrender and sacrifice of noble opportunities.

Forsaken in Old Age.

We are, therefore, not sorry to see farms growing larger, provided those who work them will get nearer together; and that is what they ought to do. Any farmer who plants himself and his family alone—far from possible neighbors—takes upon himself a terrible responsibility. It is impossible that he and his family should be well developed and thoroughly happy there.

He will be forsaken in his old age by the very children for whom he has made his great sacrifice. They will fly to the towns for the social food and stimulus for which they have starved. We never hear of a colony settling on a Western prairie without a thrill of pleasure. It is in colonies that all ought to settle, and in villages rather than on separate farms.

The meeting, the lecture, the public amusement, the social assembly, should be things easily reached. There is no such damper upon free social life as distance. A long road is the surest bar to neighborly intercourse. If the social life of the farmer were richer, his life would by that measure be the more attractive.

Unmeaning Drudgery.

After all, there are farmers who will read this article with a sense of affront or injury, as if by doubting or disputing the sufficiency of their social opportunities we insult them with a sort of contempt. We assure them that they cannot afford to treat thoroughly sympathetic counsel in this way. We know that their wives and daughters and sons are on our side, quarrel with us as they may; and the women and children are right.

"The old man," who rides to market and the postoffice, and mingles more or less in business with the world, gets along tolerably well; but it is the stayers at home who suffer. Instead of growing wiser and better as they grow old, they lose all the graces of life in unmeaning drudgery, and instead of ripening in mind and heart, they simply dry up or decay.

We are entirely satisfied that the great curse of farming life in America is its isolation. It is useless to say that men shun the farm because they are lazy. The American is not a lazy man anywhere; but he is social, and he will fly from a life that is not social to one that is. If we are to have a larger and better population devoted to agriculture, isolation must be shunned, and the whole policy of settlement hereafter, must be controlled or greatly modified by social considerations.—Dr. J. G. Holland, in *Scribner's Monthly*.

WHY HE DIDN'T.—"My son," said a good mother to her young hopeful, "did you wish your teacher a happy New Year?" "No, ma'am," responded the boy. "Well, why not?" "Because," said the youth, "she isn't happy unless she is whipping some of ns boys, and I was afraid if I wished her happiness, she'd go for me."

Women Versus Sewing Machines.

Man invented the sewing machine, the most delightful time saving affair that a woman could have dreamt of. One hour's work in fifteen minutes! a day's toil finished in three hours! So we rejoiced and learnt to operate, and laughed at our grandmothers for their old-fashioned stitching and overhanding, and set to work to undo the good that had been done us as speedily as possible.

Fashion waved her wand and Vanity did the powwowing, and lo and behold! tucks appeared upon the scene—tucked petticoats, tucked waists, tucked dresses, tucked overskirts. It takes six times as long to tuck a skirt with a mean littled half dozen rows of tucks, as it does to hem it. Put two clusters of tucks, and you can hem and trim four skirts by hand in the same space of time. And we must have our old number all the same; all our garments exactly as before. And we toil from dawn until dusk to make a row of lines upon the edges of habiliments seldom seen by mortal eye, or down the backs and up the sleeves of others, which might be washed by the ordinary incumbent of the kitchen were they made plain, but which, under the circumstances, must go to the laundry.

Tucks, tucks, tucks, clusters and rows, bias and perpendicular, as well as horizontal! Whoso passeth basement windows or looketh up to second floor bedrooms, will often see pale, wretched, anxious little women who seem, save for a difference in attire, to be the well-known heroines of the "Song of the Shirt," tucking white muslin. Not the underpaid seamstress or the unhappy work girl, but the well-to-do lady of the house, determined to have as many clusters of tucks in her under garments as the lady next door has! And did not last week's wash exhibit four clusters of twelve tucks, each, in that enviable personage's garments?

The garments are no whiter, no smoother, nor do they fit better; but it would be so horrible not to have any tucks in one's wardrobe, and a seamstress charges so much, and so you bear the whirr all day, and as machine work kills sooner than hand work, if carried to the same extent, doubtless many die of it. There are little girls who have a fine tucked wardrobe which they will outgrow in a year, and no mother to make any more, because of those very tucks.

There are hosts of little babies that did not lived to be christened, and whose graves are just big enough for the little vases of flowers that stand upon them, who might have been great bouncing boys but for that tucked wardrobe of elfin robes and wraps, of which they only wore the garment that moulders in the grave with them. And I know more than one woman who is tucking health and bloom, perhaps life away, not for bread's sake, but just for a sort of mysterious vanity that no man could understand—just as Cousin Sally, and perhaps his second wife, may say of her, "What a woman she was! Twelve tucks on everything."

SYSTEMATIZING MENTAL LABOR.—As a marvelous instance of what one man may achieve by doing systematically and thoroughly whatever he undertakes, we can not do better than consider the life of Alexander von Humboldt. There was no part of the world he had not visited, and he had been nowhere without acquiring the most exact knowledge of the country, its geology, its animal life, its botany, all its physical characteristics, as well as the language, habits, customs, laws, religion, and history of its people. He led this life till he was ninety years of age, and even then no fact, in any part of the world, that had any bearing on scientific truth, escaped his notice. His mind was a museum, where all the knowledge that has been brought into the world was placed in order, carefully guarded, and always ready for use. We are not wrong in attributing the boundless learning and prodigious memory of this great man to his habit of systematizing his mental labor, and to his power of self-concentration, and to his belief in the wisdom of God.

A QUESTION FOR YOUNG MEN.—Would not the situation you are now filling be more remunerative if you were a rapid and elegant business penman and correct book-keeper, having a thorough knowledge of business affairs? If so, why not devote a few months to the acquisition of an education that will place you in a first-class position, where you can always command an excellent salary. The expense will not be great, and, in a few months, your extra salary will more than pay the expenses of your course.

YOUNG FOLKS' COLUMN.

Good Life.

He liveth long who liveth well—
All else is life but flung away;
He liveth longest who can tell
Of best things truly done each day.

Then fill each hour with what will last,
Buy up the moments as they go;
The life above when this is past
Is the ripe fruit of the life below.

Sow love, and taste its fruitage pure;
Sow peace, and reap its harvest bright;
Sow sunbeams on the rock and moor,
And find a harvest home of light.

A Boy Marvel.

Is a boy a thing? I rather think so. I think some boys are curious things too. If they are not, they often do very curious things. I have been reading of one boy who was regarded as a very great curiosity. People went long distances to see him. Learned scholars thought him as much of a puzzle as anything ever they saw.

His name was Henry Mondeux. You see he was French. His parents were poor, very poor. When he was seven years old his father told him that it was his duty to work for a living, and he was sent to keep sheep. In his lonely hours in the meadows he amused himself by incessantly counting over little heaps of pebbles, and arranging them in different ways. By-and-by the villagers about him noticed his strange employment, and when it was found that he could make rapid calculations in figures some of the people imagined he was helped by an evil spirit.

He could solve questions in figures that puzzled the oldest heads. If any difficulty of money matters sprang up in the little communities, he was called upon to settle it, and they always found his figuring correct. The admiration excited by his powers was not unmingled with awe, as the little rascal pretended that he could cast an evil eye on the cattle of those who displeased him. His reputation spread far and wide, and it became a favorite amusement to have him to divert the company on fete days at the neighboring farms.

One day he met two ladies, who, struck by his appearance, entered into conversation with him. In the course of the conversation Henri offered to tell the youngest her age in seconds if she would mention how old she was.

"Nineteen," said the young lady. Instantly he replied, "You have lived 589,184,000 seconds."

This was while he was a very small boy. He was always ready to answer such and even more complex questions, and soon became the wonder of all the country round. He finally went to Paris, and was there caressed and wondered over by the most famous people of France.

But perhaps the most wonderful fact connected with his history was the circumstance that during all this time he could neither read, write, nor cipher, and had not the slightest acquaintance with fractions, or any of the ordinary rules of arithmetic. How, then, do you suppose he could do what he did? I can not tell you. That is why I consider him a curious boy—he did what no one could explain. I can not tell what became of him at last. Only this much I know—that he was a wonderful boy. Don't you think so, too, Charley? And don't you wish you had been born with the multiplication table, and fractions, and dividends, and compound numbers, and the rest of those perplexing things, all in your head?—*Rural Home*.

An Obedient Boy.

A company of boys were playing very earnestly one day, and were evidently enjoying themselves finely. One, in particular, seemed to be the leader of their sports, and his whole heart was in the play.

Just as he was proposing a new game, and instructing his comrades about it, a neighboring window was thrown up, and a sweet, gentle voice called:

"Charley, your father wants you."

The window was closed at once, and the gentle lady immediately withdrew, not even stopping to see whether Charley heard, much less to ask him if he was coming.

The boy was so busily playing that it seemed doubtful if the mother's quiet voice would reach his ear, but she knew her boy, and the words had scarcely escaped her lips before everything was dropped, playmates and play forsaken, and Charley was within the doors, in answer to the call.

I think I have seen a boy somewhere, who does not obey quite like that.—*Little Christian*.

DOMESTIC ECONOMY.

Hints for Housekeepers.

As a general rule it is most economical to buy the best articles. The price is, of course, always a little higher, but a good article always spends best. It is a sacrifice of money to buy poor flour, meat, sugar, molasses, cheese, butter, lard, etc., to say nothing of the injurious effect upon the health.

Butter that is made in September and October is the best for winter use.

Lard should be hard and white; and that which is taken from a hog over a year old is the best.

Rich cheese feels soft under the pressure of the finger. That which is very strong is neither good nor healthy. To keep one that is cut, tie it up in a bag that will not admit flies, and hang in a cool dry place. If mould appear on it, wipe it off with a dry cloth.

The best rice is large and has a clear, fresh look. Old rice has sometimes little black insects inside the kernel. The small white sago called pearl sago, is the best. The large brown kind has an earthy taste. These articles and ground rice, tapioca, etc., should be kept covered.

To select nutmegs, pick them with a pin. If they are good, the oil will instantly spread around the puncture.

Keep coffee by itself, as its odor affects other articles.

Keep tea in a close chest or canister.

Oranges and lemons keep best wrapped close in soft paper and laid in a drawer.

When a cask of molasses is bought, draw off a few quarts, else the fermentation produced by moving it will burst the cask.

Bread and cake should be kept in a tin box or stone jar.

Salt codfish should be kept in a dry place where the odor of it will not affect the air of the house. Fish-skin, for clearing coffee, should be washed, dried, cut small, and put in a paper bag.

Soft soap should be kept in a dry place in a cellar, and should not be used till three months old.

Bar soap should be cut into pieces of convenient size, and left where it will become dry. It is as well to keep it for several weeks before using, it goes fast when it is new.

Cranberries will keep all winter in a firkin of water in a cellar.

Food for Old People.

Is your fat, good-natured grandfather living on fat beef and pork, white bread and butter, buckwheat cakes and molasses, rice and sugar, till he has lost all mental and physical energy, and desires to sit from morning till night, saying nothing, and caring for nothing? Change his diet. Give him fish, beefsteak, potatoes and unbolted wheat bread, or rye and Indian, with one-half or three-quarters of the carboniferous articles of his former diet, and in one week he will cheer you again with his old jokes, and call for his hat and cane.

Is he lean, and cold, and restless, and irritable? Give him the fattest meats, the best butter and as much sugar and molasses as he desires, not taking away entirely food for the brain and muscle, but adapting them to his circumstances. Perhaps his brain has been overworked, and exhaustion and fitful action follow. If so, he needs some form of phosphatic food to which he has not been accustomed—such as oat meal porridge, or oat meal cake, with milk, or a diet of fish, and pearl barley or pea soup. Or perhaps his restlessness comes from inactivity of the bowels. If so he needs fruit, vegetables, unbolted wheat bread, etc., with care to keep his mind at ease, and to have only such company as is soothing and agreeable.

Or perhaps irritability arises from the use of too much meat and other phosphatic food. If so, keep on a diet in which the phosphates are deficient, as rice, flour, bread, butter, etc., with other food adapted to their conditions and habits. But, that a regard to these different conditions and an adaptation of food to conform to them, will very much contribute to comfort and happiness in the declining years of life, there is not a shadow of doubt.

FRUIT SYRUPS, so called by courtesy, have been in constantly increasing demand of late years, the great growth of consumption being no doubt caused by the general introduction of soda fountains, not only into chemists' shops, where they have long held an established place, but into saloons, restaurants, and all places of popular resort. Pure syrup, of which very little is to be had at any price, is made by mixing the pure juice of any fruit, obtained by pressure, with a syrup made of refined sugar and water. But sugar is costly, and so is fruit, and at this rate, with the many profits that must come out of it, enough syrup for a glass of soda could not be afforded with that refreshing beverage at 4d. a glass only. So the chemist is consulted, coloring-matter, dye-woods, and the like are used, and to them are added extracts to produce the taste, and the result is "ice cold soda, with choice fruit syrups," which people drink by the quart, and then wonder that they do not feel well.

Pickles.

The following recipe for pickling cucumbers, etc., will be generally acceptable at this season of the year: Wash the cucumbers clean. Place about a dozen leaves of a grape vine on the bottom of the pickling vessel (a barrel or stone jar will do). Pack a layer of cucumbers snugly on the leaves, and sprinkle over them a small handful of salt. Then lay vine leaves again, and then cucumbers and salt, and repeat the order till the vessel is nearly full. Cover over with vine leaves, and put a round board on the leaves with a clean stone on the top. Fill the vessel with water till the cucumbers are covered; the board will prevent them from swimming on the water and so becoming exposed to the air. Taste the liquid; it should be pleasantly salt; add a little salt if it is too flat. Let the whole stand, in a not too cool place, for three weeks when the cucumbers will be sour and ready to eat. They will keep all the winter if put in a cool place. No vinegar is necessary. The pickles will be of an olive color, and are more wholesome than poisonous bright green sulphuric acid and brass kettle pickles sold in almost every store. The Germans use altogether the above recipe for pickles; but it is a fact that daintiness is more perfect in America than in Germany, and our correspondent does not wonder that the pickles here have done much to give that science its present perfection.

BONED HAM.—Soak a nicely cured ham the night before you wish to cook it, in tepid water. Next day place it in a large dinner pot of water, of the same temperature, and boil it briskly eight or ten hours. Take it up in a wooden tray, let it cool, and carefully take out the bone; cut it clear at the hock and loosen it around the bone on the thick part, with a thin, sharp knife, and slowly pull it out. Then press the ham in shape and return it to the boiling liquor. Take the pot off the fire, and let the ham remain in it until cold. It is like beef tongue when cut across in slices.

SOUPS.—Prof. Liebig gives the following direction for making soup: 1 ounce ox-marrow, ½ gallon of water, a sufficient quantity of vegetables (carrots, celery, cabbage, etc.), boil for one hour and a quarter, then add 5 drachms Liebig's Meat Extract, and salt *quantum sufficit*. This is sufficient for seven persons.

Practical Recipes.

To make rice waffles, take a tea cup and a half, or a common sized tumblerful and a half of rice that has been well boiled, and warm it in a pint of rich milk, stirring it till smooth and thoroughly mixed. Then remove it from the fire, and stir in a pint of cold milk and a teaspoonful of salt. Beat four eggs very light, and stir them into the mixture, in turn with sufficient rice flour to make a thick batter. Bake it in a waffle-iron. Send them to table hot, butter them, and eat them with powdered sugar and cinnamon, prepared in a small bowl for the purpose.

TO BOTTLE GREEN CURRANTS.—These are nice for pies, and many housekeepers put up a large quantity. Strip them from the stems. Allow six ounces of sugar to the pound of fruit, or about one pound of sugar to three pounds of currants. Put a layer of sugar and currants in the kettle until two-thirds full; set on back of stove, or in the oven, until the sugar melts and the juice starts. Now let them come to a boil, stew them awhile, if you wish, or bottle as quickly as possible; they must be boiling when bottled. Common small-mouthed bottles will do. The corks should be cut off smooth and even with the glass, and waxed neatly.

A FIRST-RATE PUDDING.—Into one quart of sweet milk, put one pint of fine bread crumbs, butter the size of an egg, the well beaten yolks of five eggs; sweeten and flavor as for custard; mix the whole well together. While the above is baking, beat the whites of the five eggs to a stiff froth, and add a teaspoon of powdered sugar; pour it over the hot pudding when cooked, return to the oven and bake to a delicate brown. We like the above without addition, but some prefer a layer of jelly, or canned peaches or other fruit, over the pudding before the frosting is added. No sauce is needed. It is not only delicious, but light and digestible.

MUSH MUFFINS.—With one pint of milk, a piece of lard the size of a walnut, and a teaspoon of salt, mix sufficient Indian meal to make a thick mush, which boil fifteen or twenty minutes. When this is so cool that it will not scald the flour, add a teaspoon of bakers' yeast and enough wheat flour to make a soft dough. Set to raise about ten o'clock A. M. (when wanted for tea) in a warm place. When light form into small and thin cakes, and bake them on the griddle five minutes on each side.

TROX PUDDING.—One cup of shred suet, and scant cup of molasses, one and a half cups of sour milk, two and a half cups of flour, one teaspoon each of soda and salt, and one cup of chopped raisins. Boil three hours. Sauce for the same. One cup of white sugar and one egg beaten together ten minutes, then add two tablespoons of boiling water and one teaspoon of brandy, or any essence that may be preferred.

FRENCH PUTTY.—Ruban, of Paris, has invented a putty made by boiling 4 lbs. of brown umber for two hours in 7 lbs. linseed oil, stirring in 62 grammes of finely chopped wax. It is then removed from the fire and 5½ lbs. chalk paste and 11 lbs. white lead are incorporated in the mass.

MISCELLANEOUS.

Feeding for Butter.

Some of our agricultural papers and dairy-men's Associations have been, and are discussing the question of food for milch cows, and in order to add to the facts already adduced, I will transcribe the result of a few experiments made by Boussingault and others, which have a direct bearing on the subject.

Messrs. Magendie, Sandras and Bouchardat have shown that the "fatty principles of our food, minutely subdivided, or made into an emulsion by the act of digestion, pass without essential change into the blood, where they are held at the disposal of the animal economy." Boussingault claims that "fatty substances are only produced in vegetables, and that they pass, ready formed, into the bodies of animals, to undergo combustion immediately, so as to evolve the necessary animal heat, or are stored up for future use."

Dumas, Payen and Boussingault, after a long series of experiments, gave a table of the percentage of fatty matters used in the different articles used as food for stock. Oil cake and maize have about 9 per cent.; bran and oats 5 to 5½ per cent.; hay 3½ to 4; wheat flour, peas, lentils, beans, straw, etc., about 2 per cent., and roots 1 to 1½ per cent.

By a long series of experiments made by Boussingault, he shows conclusively that "the cow extracts from her food almost the whole of the fatty matter it contains; and she converts this matter into butter." He says: "The fattening of oxen fixes a certain proportion of these principles in the same way as the cow. There is only this difference, that the cow returns with the milk she yields a considerable quantity of the fat she finds in her food. There consequently exists an obvious relation between the formation of milk, and fattening."

Allowing these deductions to be true, this accounts for the results claimed by L. W. Miller and others as to the value of sowed corn as compared with corn meal. Nearly all the dairymen at that meeting agreed with Miller, that corn-meal is the best accessible food to increase the quantity of butter. One dairymen said to me that the meal he fed his cows in the summer brought him \$2 per bushel, when he sold butter at 30 cents.

The practice and experience of our butter makers singularly coincides with the statements of Boussingault, as to the comparative butter-producing value of different kinds of food for milch cows. The experiments of Boussingault show but little butter-producing value in roots of any kind, and farther, that in no case does the fatty matter in the milk and other excretions equal that in the food eaten, but that a certain portion is used in keeping up the animal heat. He also shows that there is the most complete analogy between the production of milk and the fattening of animals; and, lastly, that "fat food"—food which will afford fat in the digestive canal—"appears to be the indispensable condition of fattening" (or of producing butter).

We find, then, that the peculiar fattening grain crop of America—maize—is the almost necessary adjunct to hay or grass in the production of butter, and as in case of the Chautauqua dairymen, it will pay double its cost in its transformation into butter. Our butter-makers, East and West, should not hesitate to feed liberally of corn-meal, being certain of a liberal return for the money expended. As expressed by a successful dairymen: "Your cow is a mill, and the richer the grist put into her hopper, the richer will be the grist ready for market."—*Cor. Live Stock Journal.*

Keep the Cattle Growing.

The most successful breeders of horses, cattle, sheep or swine, know from experience that although they may possess the best breeding animals they will not be successful in producing superior stock, if a continuous growth of the young animals is not kept up. In order to begin in time at this indispensable preparation for success, the broodmares, cows, ewes and sows are most carefully and suitably fed while with young, and as soon as the young animals make their appearance, they are taken the greatest care of, the dams being suitably fed while suckling, and when the young ones are weaned, they are not supposed to want for food or drink a single hour.

By this means a continuous and rapid growth is kept up, and the animals attain a large size and heavy weight at an early age. When breeding animals are not properly fed and comfortably sheltered in winter, the bad effect of such treatment is not confined to their own want of condition—it is shared by their progeny, and can never be remedied. When young stock are not fed well and comfortably sheltered in winter, their growth becomes stunted, and no subsequent amount of good treatment can repair the damage. Young animals may suffer for want of proper provender in summer and autumn, as well as in winter, and when this happens it stops continuous growth, and prevents ultimate success in the object of the breeder.—*Working Farmer.*

GRAPE SUGAR.—Raoult has found that a solution of cane sugar exposed in sealed tubes for five months to sunlight contained grape sugar. A similar solution kept in the dark, underwent no change.

PARASITE IN THE BLACK CRICKET.—A correspondent writes the *Scientific American* as follows: "I recently crushed a common black cricket, about three-fourths of an inch in length, and there came out of the body of the insect a brownish-colored water-snake more than nine inches long, about one-sixteenth of an inch at the largest diameter or center, and about one-thirty second of an inch at the smallest, or neck, with some appearance of head. It has lived now forty-eight hours in water, and there is no diminution of vigor. It is very active. The cricket was very lively with its strange burden, which was packed into the body between the soft parts and the external shell. Can you tell me what the phenomenon means? Did the cricket swallow the snake, or did the snake originate there?"

WATERING FRUIT TREES during the time of blooming, especially in dry weather, is strongly recommended by some farmers. Use first dung-water about the trees and then clear water, sprinkling the stems of the trees as high as one can conveniently reach. This is said to prevent the flowers from falling off and to aid the setting of the fruit. It is particularly good for apple trees.

Hints about Advertising.

If you have goods to sell farmers, how much better will it pay you to advertise in a farming paper, read and preserved by 15,000 intelligent farmers, than in miscellaneous daily or weekly journals with 30,000 readers, comprising only 2,000 farmers. A mining journal in California with 15,000 readers reaches more intelligent miners than any other ten papers in the Union.

Purchasers are more likely to look for information in the advertising columns of a paper devoted to their special interests, than elsewhere, when ready to buy. Some will not read advertisements upon any other occasion, but seek the best paper when wanted.

If you happen to be the only advertiser in your line of business in a paper, all the better. But if several firms advertise the same, your own judgment will question whether you can best afford to go unrepresented. Weekly journals are read most leisurely and carefully, and at a time when the subscriber is most favorably inclined to examine advertisements. This newspaper most specially representing your particular branch of industry is usually best entitled to your patronage, and the most profitable medium you can employ.

An advertisement in an honest and handsome sheet is favorable to the reputation of the advertiser. The readers of this Press are a superior and industrious class, who are able to purchase and who seek to patronize the best and fairest dealing tradesmen.

Advertising in cheap priced mediums (of limited circulation) is like buying goods at retail when you could as well take them at wholesale.

Information imparted to a list of superior and intelligent and active and industrious readers (naturally looked up to by others for information), is seed sown in good soil for this advertiser.

Fame and fortune are gained, nine times in ten, by liberal and judicious advertising.

Agricultural and Industrial BOOKS.

For Sale at this Office.

American Manures, and Farmers' and Planters' Guide—comprising a description of the elements and composition of plants and soils—the theory and practice of composting—the value of stable manure and waste products, etc., etc.; also chemical analysis of the principal manufactured fertilizers—their assumed and real value—and a full exposure of the frauds practised upon purchasers. By Wm. H. Bruckner, Ph. D., and J. B. Chynoweth. Price \$2, post paid. Address DEWEY & Co., this office.

The Fruits and Fruit Trees of America, or the Culture, Propagation, and Management, in the Garden and Orchard, of Fruit Trees generally, with descriptions of all the finest varieties of Fruit, Native and Foreign, cultivated in this country. By A. J. Downing. Illustrated: 1088 pages; 1869. The best authority, and only complete work. Price, in cloth and gilt, \$5, post paid, by DEWEY & Co., this office.

New American Farm Book—originally by R. L. Allen; revised by Lewis F. Allen, 1871. Embracing information on all general subjects pertaining to Farming and all branches of Husbandry—a wide range, yet very fully and ably treated. 526 pages. Price \$3, post paid. Address DEWEY & Co., this office.

Harris (Joseph) on the Pig. Breeding, Rearing, Management and Improvement. Illus., 250 pages, 1870. Interesting to all readers; instructive and full of hints to raisers. Price \$2, post paid from this office.

Cranberry Culture, by a Practical Grower in N. J. Joseph J. White. A special treatise of 126 pages. Post paid from this office, \$1.75.

Farm Implements and Farm Machinery, and the principles of their construction and use. With simple and practical explanations of the Laws of Motion and Force as applied on the Farm; by John J. Thomas; 287 illustrations and 302 pages. Sold by DEWEY & Co., post paid, for \$1.75.

Ten Acres Enough: A practical experience, showing how a very small farm may be made to keep a very large family, with extensive and profitable experience in the cultivation of the smaller fruits. Tenth edition, 1871. Price, post free, \$1.50, at this office.

Observations on the Culture of Silk in California. By I. N. Hoag, of Sacramento, 1870. Pamphlet, 33 pages. For sale by DEWEY & Co., Publishers of PACIFIC RURAL PRESS, San Francisco. Post paid, 25 cts.

Cotton Culture; by J. B. Symon; with an additional chapter on Cotton Seed and its uses. 150 pages, 1868. Price, post free, \$1.75, at this office.

How Crops Grow: by Johnson; a treatise on the chemical composition, structure and life of the plant, for all students of agriculture; with illustration and analysis. 394 pages; 1868. Post free from this office, \$2.50.

American Grape Growers' Guide; by Wm. Chorlton (N. Y.) 204 pages, 1852. Post free, \$1, from this office.

American Fish Culture, embracing all the details of artificial breeding and rearing of Trout, and the culture of other fishes; by Thad. Norris. Illustrated, 304 pages, 1868. Post free from this office, \$2.50.

How Crops Feed; Johnson, 1870. On the Atmosphere and the Soil as related to the nutrition of Agricultural Plants. Illustrated. 375 pages. Post free from this office, \$2.50.

Thresher's Guide and Farmer's Friend—by D. Hollman, a Californian, and a practical thresher for over fifteen years. It contains facts and hints of great value to those specially interested, who thresh or employ threshers. Published by DEWEY & Co., at this office. In flexible cloth, \$1. Post free.

Randall's Sheep Husbandry, illustrated, with a treatise on the Diseases of Sheep, Prevention and Cure Post free from this office, cloth edition, \$2.

[Continued from page 197.]

mentation was adopted and the alterations and amendments proposed concurred in.

The following officers were elected for the ensuing year: President—Charles G. Bockius; Vice-Presidents—S. R. Chandler, H. Burgett, S. E. Wilson, P. L. Bunce, Col. Boulware; Secretaries—J. H. Craddock, Phil. E. Drescher; Treasurer—George Ohleyer.

The following members were elected delegates to attend a meeting to be held at Sacramento, on Monday, September 23d, to organize a State Farmers' Club; C. G. Bockius, Henry Brown, John McIlmoil, S. E. Wilson, and C. P. Berry.

On motion the following question was selected for discussion at the next regular meeting: "Means of Inland Transportation." The Club then adjourned to meet Saturday, September 28th.

San Jose Farmers' Club and Protective Association.

President Casey called the Club to order at the usual time.

No one seemed desirous of occupying the fifteen minutes allowed for an address on any subject, there being but five or six present, but that number was more than doubled during the discussion. The discussion was opened by J. F. Holloway, on the question,

Does Farming Pay

In this valley, when considered in connection with the price of land and rents; if not, what is the remedy? He said that farming does not pay in this valley when considered in connection with rents, price of land, etc. Some may make it pay but the masses do not. This is self-evident. Now,

What is the Remedy?

The value of money and property is a fictitious one. The cost of sustaining our State institutions is a burden, and a grievous one. If this is not stopped, our country is played out.

Another thing, we must quit this everlasting small grain business. The producer is getting in debt every day. This does not appear to be the case with all, but it is so with the masses. They all count their land worth from \$100 an acre and upwards. This is too valuable for farming purposes; they can't make the interest on the investment by farming.

Men can't afford to pay the rent which is asked for farms in this country. Renters must not only take into consideration their taxes and rent, but also the cost of sacks, harvesting and the other multitude of expenses accruing in the business of grain-raising. The dealers and capitalists have a monopoly of everything; they are continually forming rings and combinations by which the hard-earned dollars of the farmer are to be transferred to their own plethoric purses.

The only remedy is to form counter combinations. If they won't pay a decent price for grain, don't sell. Wheat brings a higher price in Liverpool now than it did at any time last year and dealers here don't pay the farmers more than half so much as they did then. The farmers say they have no time to meet for the purpose of forming a combination. The dealers find plenty of time to hold their meetings and fix up their jobs.

Farming is mostly done by renters, and the big land owners "clean out" one set of renters to make room for others who know no better than to try renting at California rates. The great producing class in California will be poorer when the present crop is disposed of than before it was put in the ground.

Mr. Chipman thought there were many things to be considered on this subject, and many allowances to be made. He did not consider the points of the last speaker's arguments well taken, nor did he consider his ideas practicable. Farming does pay. There is one important fact that many farmers overlook. In this country

Grain Does Not Sell

Or lose by standing in the fields till rain comes, and most of the farmers in this valley, by taking advantage of that fact, might do their own harvesting with the help of one man, and save the money paid to others for doing what he ought to do himself.

Mr. Thomas said that when our farmers would consent to work all the time, and not hire their work done at a big expense, in order to be able to lie idle half the year, they would find that there is money in farming.

Mr. Bergen thought that it would not pay to raise wheat on ground worth more than \$40 per acre. He was satisfied that the way to make money on a farm was to change our mode of crops, and how to change was what he wanted to know.

Mr. Hobson said the farmers probably made something at farming, but not as much as they should. He said that what he was worth he had made by cultivating the ground. He could take ground worth \$150 per acre, and by planting it to onions, could clear fifty cents per day, over and above a comfortable living for himself and family.

The main trouble with the farmers is that they hire too much work done. They want to get through too quick. Our long, dry seasons are a blessing to the country, if farmers would take advantage of them; they give him a long time in which to harvest his crops and save the expense of extra hands.

Farmers ought to learn how to farm; he wondered why they did not come to the Club to hear and learn, and then go home and put the ideas gained into practice. In the East, if a man gained four or five thousand dollars by

patient industry in forty or fifty years, he thought he was doing well, while here we live recklessly extravagant, and find fault if we can't clear that much in one or two seasons.

Land Grabbers

May oppress the poor by charging too high rents, but then there is a grand Providential arrangement that men die, and in a few years their large estates will be divided up. Farmers are generally happy and do well, and here we are better off than anywhere else. We should not say so much against speculators and moneyed men; they build up various enterprises, and give remunerative employment to the poor.

Running in Debt.

Mr. Cadwell said one great drawback is that farmers run in debt, then they have to sell off their crops in a hurry at what they can get, and are cramped in their next year's operations. The remedy for this is to keep out of debt, even if they have to farm on a small scale.

Extravagance and Debauchery.

Mr. Ware still strongly believes that farming pays, pays by the present mode; and yet the present mode is extravagant in the extreme. The profits of the farm are largely used in debauchery and in extravagance instead of in developing the resources of the farm. Extravagant in spending time as well as money.

There is a benefit in labor; a person without active employment seems to him like the stagnant pool formed by diverting the pure brook from its course and letting it spread on the plain; it gives off nothing but stench and disease. An industrious economical person is always virtuous and a gem in community, while a reckless person is apt to lack virtue.

Economy and Industry

Will insure success in farming as in any other occupation. Speculators live off our extravagance; then let us work more and borrow less. We are not independent because we lack industry and economy. Industry and economy is all we need to make our present mode of farming successful.

Mr. J. F. Holloway said we should all be actuated by a desire to assist the needy; but instead, we always heap the misfortunes of the unfortunate class on their heads, without trying to help them. It is necessity that makes industry and economy, but riches that induce and support the abominations of the land. There is an utter wrong somewhere when one class live on the labor of another. The rich land-owners oblige the poor renter to hustle off the crops by the terms of the lease. We do not object to the rich, but to the mode of getting rich. O; but we have no patience with those grabbers who grind the last penny out of the poor.

Sell Help.

Mr. Chipman is disgusted with this thing of trying to help others; he has tried it and with but poor success. Men must help themselves; if others help them they lean too much on the help and are apt to fail.

Mr. Hobson would hate to have it go out from this club that farming don't pay—for it does pay and pays well. He does not believe in this tirade against men that own large farms; they bought them, the land is theirs, and they are entitled to it, and they ought to own it, and be protected in that right.

Mr. Ware thought some men preferred working for wages because they did not desire the care of a farm or any other business on their minds. Another thing that had been overlooked,

The Rise in the Value of Land.

The farmer has a right to count that in as part of his profits. He bought for ten and could sell for \$75 per acre, but is satisfied that he can make more farming his land for the next ten years than he could by selling and investing the money in something else.

There were some others spoke but nothing new presented.

Subject for discussion at next meeting—Fertilizers and Fertilizing.

Oakland Farming, Horticultural and Industrial Club.

[Meeting of Sept. 13th, continued—Reported for the PACIFIC RURAL PRESS.]

Hedge Protection of Fruit Trees.

Mr. Dwinelle—"I think we have attended too little to the protection of fruit trees from the coast winds, by planting sheltering belts around them that would not be effected unfavorably by the winds. I have known people to plant the Monterey cypress at the back of San Francisco, where there was nothing but sand hills, to be able to have fine trees and flowers by its aid. In two or three years after planting it in the most exposed situations, you have as warm or genial a climate as you can wish for. If you will look around you, you will easily see the good effects of a little shelter. It protects from the cold breezes and from the northerly winds that make the apples fall from the trees, and bake them even before they fall. This subject is now attracting a great deal of attention in the grain-growing valleys. The good effects of shelter may be seen even here. In one of Mr. Kelsey's nurseries, when you think it is a cold day outside, just go in be-

tween the rows of trees and you will be inclined to believe that it is a very warm day. I think that peach trees need this; plum trees need it too. I think that peaches can be raised in many places on the plains with such protection."

Mr. Pryal—"The excellence of this system is so well known in the older countries that they always plant belts of shelter before planting trees. I think by farmers planting shelter belts they would protect their crops and cattle and modify the air. Twenty or thirty families settling in a valley with each a little cottage having a fire, would modify the air."

Mr. Pryal—"Hedges are of the utmost importance for the protection of our grain crops. We get ten bushels now where we would get twenty by planting hedges. In England, I have seen them plant 20,000 or 30,000 pinasters on their coasts, which, although of slow growth, are yet fine trees. It is time that our farmers should go and do likewise."

Good Tree Planting Endorsed.

Mr. Webster—"I was very much pleased at what Mr. Montandon said about tree-planting, and can verify his statements from my own experience. There is nothing lost by preparing ground for the trees. The ground should be well manured. Myself and neighbor, Mr. Chas. Nichols, just across Fruit Vale Avenue, set out some almond trees one season. He dug his holes deep, four feet in diameter, and mixed the manure well with plenty of old bones, scraps of iron and other rubbish with the dirt. I did not take much trouble; I dug the holes two feet deep and two feet in diameter, and set my trees in. He took perhaps half a day. But the results have been that after four years his trees are twice the size of mine."

Various Kinds of Tree Shelter.

Mr. Carr—"Mr. Dwinelle's remarks about shelter are very pleasantly confirmed by some of the door-yard operations in Oakland. Mrs. Moore, two years ago, planted an Auracaria under a pepper tree, which is now as large as if it was seven or eight years old. The Auracaria excelsior is a fine tree for the purpose of a wind screen. I would recommend the pepper as a wind shelter trees. In Los Angeles they enclose the fields with the willow, which in a few years furnishes fuel as well as shelter. But the willow is comparatively useless when compared with the pepper. A gentleman with whom I am acquainted, who has planted the pepper, considers it very valuable. It is planted in double rows, and alternately."

Mr. Webster—"In the Monterey cypress you have an advantage, because it grows higher—twenty to thirty feet higher."

Mrs. Carr—"The pepper tree at its full growth reaches forty or fifty feet. At Los Angeles the gardeners prefer it, on account of the ventilation afforded by it, as the wind passes easily through its branches."

Mr. Pryal—"It grows better twelve or fourteen miles from Oakland, where, at ten years old, it is fifteen to twenty feet high. Here it only grows eight or nine feet in the same time. Were it grown at Mission San José, it would obtain a greater height."

Mr. Dwinelle—"Those at my father's place, at Berkeley, reach only eight feet high."

Mrs. Carr—"The pepper trees at San José, eight or ten years old, are very beautiful and large."

Mrs. Carr—"At a windy place on Long Island, I have known of a fence 15 or 20 feet high to be planted, and there were grown on these exposed lands peaches as fine as any in the New York market."

Mrs. Webster—"I have grown the English holly, and it makes a most beautiful screen."

A Native Hedge Plant.

Mrs. Carr—"The finest hedge I have seen has been at Mr. Wheeler's place, at San Mateo. It is eleven years old and now fourteen feet high. It is a native plant that grows wild in the foot hills. It makes a fine luxuriant hedge. Sometimes at the back of San Mateo you can gather bushels of seeds on the hills. It is the same as that observed by Mr. Webster, at Mr. Snellings, at San Lorenzo, and spoken of as the holly."

Dr. Carr on Tree Planting, Etc.

Dr. Carr—"It seems to me that in taking up the subject of tree planting and pruning, we have tried to accomplish too much in too little time. People in California are too impatient for results. They act as if they expected to live but a very short time. I have seen some of the tree-planting, and have witnessed many of the results spoken of by Mr. Montandon. If a fruit tree is planted in the way indicated, the result will be as stated this evening. We do not seem to think that the material of fruits comes out of the atmosphere or earth. We may plant a grapevine most anywhere and it will grow and produce a certain amount of fruit. Let it be planted in a proper place and the result will be entirely different. There is a certain amount of iron which these plants require, and in which the soil is deficient. There is also a certain amount of the material which is at the basis of bone, and which requires to be supplemented. We must plant so that the roots will strike down and not grow laterally. The surface soil, containing a greater amount of the materials necessary for the growth of trees than that below it, should be removed down. When we plant a tree we must make a proper excavation, and take care not to return as we found, the soil that we have taken from below; otherwise the tree will not thrive. It

will, if we put the surface soil below. We then lay the foundation of a tree that will last many centuries.

In regard to pruning, we must remember that the quality of fruits is more important than the quantity. We seem to think that we do a great deal if we raise a large quantity, but a superior article will bring twice the price in the market that an inferior one will do. There is little difference between the cost of good pruning and cultivation and bad.

You may remember that when Sir Joshua Reynolds was asked by a certain painter what he mixed with his colors in order to make them look so well, answered: "brains." In California we

Must Mix Brains with our Operations.

By ordinary means of culture it is sometimes possible to arrive at superior results, but where brains are an ingredient we can always have such results. This is as true in tree planting as in everything else. There is a great difference between the value of these services wherein brains are brought into requisition and those which are not. We must bring to our work the results of study and observation. If we act according to ordinary methods we shall obtain certain results; but if we bring brains to our work it tells on the prosperity of the country.

The Prosperity of the Country

Depends much on the brains of the country. Its true wealth consists in it. This is why I am arguing this matter of mixing brains with our work. I do not care if there was not a dollar in the world—have brains and intelligence, and wealth would come. Wealth will grow as naturally from it as grapes from the grapevine.

Bits and Dimes.

EDS. PRESS:—There are comparatively few of us, perhaps, who are not in the habit, at times, of using improper and ungrammatical words and expressions, knowing them to be such; many of which, through force of habit, have become so common among the masses that they seem almost excusable; yet here in California—especially in the mining districts—there are some which stick out so prominent that they seem almost unpardonable.

For instance, provision, board, etc., are generally called "grub," and when designated by this name—especially among ladies, as is often the case—it sounds somewhat vulgar and unrefined. But the most universally adopted, yet inexcusable word for persons of sense to use, is "bit," when applied to money—twelve and one-half cents—just as bad and no worse than "levy," the name commonly made use of for the same denomination in the Southern States.

Now I neither know nor care how, why and wherefore the terms came into use, it is enough for me to know that there are no such denominations in Federal money—as the school children here are doubtless all aware; therefore I would humbly suggest that we "children of a larger growth," discard this outlandish "bit," altogether, and, as truly loyal American citizens, adopt and put into circulation, cents and dimes in its stead, that our brother citizens in other States, may not feel that they have entered a foreign country the moment they commence to do business in California. I. A. H.

Colfax, Cal., Sept. 23d, 1872.

The suggestions of our correspondent are in the main, very appropriate, and yet custom makes the law in most cases, governing the use of our language. But what does our correspondent mean by "stick out," in the 9th line of his communication? "Stick out" of what? Perhaps it has reference to something "improper," and "ungrammatical;" perhaps "among ladies," would "sound somewhat vulgar and unrefined;" we are in doubt as to what it does mean—possibly, "glass houses."

Double Eagles.

EDITORS RURAL PRESS:—You will confer a very great favor by inserting in your columns the time or date, of the coinage of the double eagle; also the time of the passage of the act by Congress. Please state the name of the mint where the same was coined, and oblige, SUBSCRIBER.

Farmington, Sept. 11, 1872.

The first coinage of the double eagle was in 1849, we are not informed at which mint the coinage was made, or the date of the act of Congress authorizing it.

WOOL GROWERS' MEETING.—At a meeting of some of the prominent wool growers of Sonoma county held at Petaluma, Friday evening, 13th inst., Wm. Hill was chosen President and S. A. Marshall Secretary. The object of the meeting was to take preliminary steps towards the organization of a Wool Growers' Association for the counties of Sonoma, Marin, Mendocino and Lake. E. Denman, Wm. Hill and Harry Mechem were appointed a Committee to draft By-laws for the Association and submit them to a meeting of wool growers to be held at Cloverdale on the 3d day of October next. Among those present whose names are not mentioned above, were A. Canfield, Thos. Scott, J. H. McLanghlin, Henry Hall, J. H. Jacobs, Willis Faight and J. M. Hudspeth. We hope that the meeting at Cloverdale will be largely attended by our wool growers. The proposed organization will be productive of much good to our wool interests.—Russian River Flag.

State Fair.—Continued.

The display of vegetables is good as to quality, showing an improvement in that respect. The most remarkable pumpkin this year is only a 112 pounder, but it was grown in six weeks from the blossom.

Agricultural machines are few in number, and the department does not show its usual life. A few California inventions will be noticed hereafter.

One of the greatest attractions, most highly commended, is Mr. Baccus' sewing machine attachment—a very simple water wheel connected directly to the shaft, whereby the machine is run without labor. The valve is moved by a foot rest, so that the supply of water is regulated by the foot, and consequently the power is under the control of the operator. The patent for this invention was received through our agency, and our readers may soon expect a full illustration of it.

Painfully we notice the absence of any considerable number of new articles of manufacture. New products are too scarce for a new and developing agricultural and industrial fair as ours. But the few interesting ones found here will be duly noticed.

IN CONSEQUENCE of the unusual press of matter incident to the holding of the several agricultural fairs and meetings of the Farmers' County and State Clubs, our usual illustration for the 9th page of the RURAL is necessarily omitted this week.

California Fruits at the Cincinnati Exposition.

From the Cincinnati Daily Gazette we extract the following:

Earliest in the field is a collection of fruit from California, brought by Mrs. Lisle Lester, the representative of the State Agricultural Society of the Golden State. Through the courtesy of this lady we were permitted to examine the fruit now on hand. It arrived in bad order, especially the grapes, and when opened it was found necessary to place it in a refrigerator, in order to preserve it. Mr. Davis, agent of Hunt's Excelsior refrigerators, on exhibition, kindly gave the fruit place, where we saw it on Saturday in fair prospect of being kept until Wednesday.

The specimens consist of grapes, apples, and pears. They are sent by two gentlemen, Mr. Johnson and Mr. Strong, of Sacramento, California. The grapes are really marvelous in size and flavor. There are four varieties. One is the Muscat, a pale green, almost transparent grape, with a pulp of exquisite flavor, resembling in tissue the plum. The seeds are small, but the grape is large, prolate-spheroidal in shape. The bunches often weigh from a pound to a pound and a half each.

The Flaming Tokay is another variety, like the Muscatel in size and shape, but differing in color and flavor. It is a handsome reddish purple in color, and has a distinct and very pleasant flavor.

The famous Mission grape is shown in two varieties; one a large dark purple, the other about the size of our Catawba, also dark purple. The latter is the grape most used for making wine. The collection can not fail to be of interest to all who are lovers of the grape.

There are but two varieties of apples. Three varieties of pears are shown—the Seckel, very large, and the Bartlett, of exquisite beauty but not above the size of our own. Lisle Lester, immediately on her arrival, telegraphed for more fruit, and hopes to have perfect specimens before the week ends. This lady speaks gratefully of the reception she had by the officers of the Exposition, and is, of course, deeply impressed with the grandeur of the great exhibition in which she is deputed to represent the fruits of California.

Rainfall of 1869 and 1870 at Kernville.

MONTH.	INCHES.	MONTH.	INCHES.
November 6.	1.1	April 2.	1.1
December 15.	1.1	April 4.	1.1
February 9.	1.1	April 12.	1.1
February 21.	1.1	July 3.	1.1
February 23.	1.1	July 4.	1.1
February 25.	1.1	July 5.	1.1
January 10 and 11.	1.1	July 8.	1.1
March 18.	1.1	July 30.	1.1

FOR 1870 AND 1871.

MONTH.	INCHES.	MONTH.	INCHES.
October 23 and 24.	1.1	February 5.	1.1
October 25.	1.1	February 10.	1.1
October 26.	1.1	February 21.	1.1
November 7.	1.1	February 22.	1.1
December 3.	1.1	March 1.	1.1
December 6.	1.1	March 13.	1.1
December 15.	1.1	April 7.	1.1
January 10 and 11.	1.1	April 8.	1.1
January 18.	1.1	April 17.	1.1

The above comes to us from Mr. S. R. Ellsworth, and may interest the readers of the RURAL in that locality and vicinity, and perhaps he kept by some for future reference.

Sore Throat, Cough, Cold, and similar troubles, if suffered to progress, result in serious pulmonary affections, oftentimes incurable. "BROWN'S BRONCHIAL TROCHES" reach directly the seat of the disease, and give almost instant relief.

Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plates. 4 Catalogues, 20c. F. K. PHENIX, Bloomingdale Nursery, Ill. 2v-17t

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Sept. 26.

FLOUR—The interior and local demand is reported good, with a fair inquiry for export. Exports for the week aggregated about 3,800 barrels. We quote prices as follows:

Superfine, \$4.00@4.37½; extra, in sacks, of 196 lbs. \$5.25@5.50; Oregon brands, \$4.75 @5.25 in sacks of 196 lbs.

WHEAT—The market has not been very active since our last review; eight full cargoes were shipped during the week, aggregating 167,000 centals; receipts for the same time reach the unusual amount of 473,000 centals. Sales aggregate 60,000 sacks fair to choice, at \$1.57½@1.65. The range for shipping grades is \$1.60@1.62½; and choice milling, \$1.60@1.65 per 100 pounds. Coast ranges from \$1.40 to \$1.55.

The latest Liverpool market quotations come through at 13s. 3d. @13s. 4d. per cental.

BARLEY—Market firm. Sales embrace 15,000 sacks, at \$1.10@1.17½, which is the range at close.

OATS—Market is rather dull. Ordinary to choice, \$1.50 to \$1.80 per 100 lbs. Some Oregon now in market held at \$1.75@1.80 per 100 lbs.

CORN—Yellow, \$1.60@1.62½ per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs.

None in first hands.

RYE—Is quiet at \$1.85@1.90 per 100 lbs.

STRAW—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN—Price is now \$18 per ton from the mill.

MIDDLINGS—For feed, reduced to \$22.50 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been light during the week. Quotable at close at \$9@15.50.

POTATOES—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from \$1.40 to \$1.75. Halfmoon Bay, \$1.45@1.65 per 100 lbs.; Cuffee's Cove, \$1.70@1.75; Mission, \$1.40@1.50; Carolina, 75c. per 100 lbs.

ONIONS—Have declined to \$1 per 100 lbs.

WOOL—The market continues dull. Sales of 160,000 lbs. Fall at current rates. Spring is neglected and nominal. Fall, 11@14c. for burry, and 15@18c. for clear; 20c. for choice.

TALLOW—Good quality of Cal. 8@8½c.

SEEDS—Flax 3c.; Canary, 4½c. Mustard, 2@3c. per lb.

PROVISIONS—Following are jobbing quotations: California Bacon 12½@15c. per lb.; Eastern do. 11@12 for clear and 13½@15 for sugar-cured Breakfast; Cal. Hams 14@15; Eastern do. 19@20c; California Smoked Beef, 12½@13c. per lb.

BEANS—The following are jobbing rates: Pea \$3.50; Small White \$3.50; Small Butter, \$3.25; large \$3.75. Bayo, \$3.50@3.60.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 6c Pecan, 20c per lb.; Hickory, 12c; Brazil, 15c; Chili Walnuts, 15c.; French Almonds, 25 @30c.; Princess Almonds, 35@40c.; Cocoanuts, \$8.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7@8 per lb. do. 2d quality 6@7 per lb.; do. 3d do. 3@5c.

VEAL—Quotable at 7@12½c.

LAMB—8@9c.

MUTTON—Quiet at 7c. per lb.

PORK—Undressed grain-fed is quotable at 5½@6½c. dressed, grain-fed, 8@9c. per lb.

POULTRY—Live Turkeys, 20@22c. per lb.; Hens \$8.50@9.00; Roosters, \$6.00@7.00 per dozen; Spring Chickens, \$4.00@4.50; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 per dozen.

WILD GAME—Quail, \$1.50@2.00; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, 75c. Ducks and Geese, \$2.00@3.00 per dozen; Venison, 8@10c. per lb.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 30@45c. per lb. Inferior and ordinary roll is plentiful, but dull at 30@35c.; choice 40@45c. New firkin is quotable at 25@30c.; pickled, 32½@35c.; Eastern firkin 18@27½c.

CHEESE—New California, 11@14c; Eastern at 14@17c. per lb.

Eggs—California fresh, are dull at 40@45c.; Oregon, 37½@40c.; Eastern, 27½@32½c. per doz.

LARD—California 12@13. Eastern in cases 13@13½c.; do in tins 11½@12c.; in kegs, 12@12½c. per lb.

HIDES—Sales for the week embrace 1,380 Cal. dry at 17@18c., and 1,600 salted at 8@9.

FRUIT MARKET.

Tahiti Oranges, M 30 @ 35	Plums, Common. — @ —
Limes, M 17 @ 20	Figs. — @ —
Au'lin Lemons, M — @ —	Crab Apples, lb. — @ —
Sicily do., M 15 @ 16	Strawb'r's, lb. — @ —
Bananas, bunch 25 @ 30	Raspberries, lb. — @ —
Pineapples, doz 50 @ 60	Cantaloupes, doz 1 @ 1.50
Apples, Cal, 100 @ 1.50	Watermelons, doz 10 @ 15
Pears, Bartlett, 75 @ 85	Grapes, Mission, 1½ @ 1½
Pears, Seckels, 75 @ 85	Chasselas, 2½ @ 3
Pears, C'king, 5 @ 10	Blk Malvoisie, 3 @ 4
Peaches, Comm. 5 @ 10	Rose of Peru, 3 @ 4
Apricots, 5 @ 10	Blk Hanburg, 3 @ 4
Nectarines, hz. — @ —	Black Prince, 3 @ 4
German Prunes, 5 @ 8	Muscad of Al'r 3 @ 4
Hungarian Prunes, 5 @ 8	Flame Tokay, 5 @ 6
Quinces, hz. — @ 10	Black Morocco 6 @ 7
Pomegranates, doz — @ 75	Wine Grapes, 1¼ @ 1½
Plums, Choice, 1.50 @ 2.00	

DRIED FRUIT.	
Apples, doz.....	7 @ 8
Pears, doz.....	8 @ 9
Peaches, doz.....	8 @ 9
Apricots, doz.....	8 @ 9
Plums, doz.....	5 @ 7
VEGETABLES.	
Cabbage, doz.....	1 @ 1½
Garlic, doz.....	4 @ 4½
Rhubarb, doz.....	— @ —
Green Peas, doz.....	— @ —
Sweet Peas, doz.....	— @ —
Green Corn, doz.....	18 @ 15
Marrowfat Squash per ton.....	— @ —
Artichokes, doz.....	5 @ —
GENERAL MERCHANDISE.	
Cucumbers, doz.....	50 @ 75
Summer Squash, doz.....	75 @ —
Tomatoes, river, doz.....	50 @ 60
Tomatoes, bay, doz.....	50 @ 60
String Beans, doz.....	3 @ —
Lima Beans, doz.....	3½ @ —
Egg Plant, doz.....	1 @ 1½
Peppers, doz.....	1½ @ 2
Okra, doz.....	3 @ 4

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—No English Standard Wheat bags, hand sewed, in the market; for machine sewed, 15@16½; Flour sacks 9@9½c. for qrs. and 13½@15½c. for hlfs. Standard Gunnies are jobbing at 19@20c.; Wool 70@75c.; Barley sacks 17½@18½; Hessians, 40-inch goods, 12½c. per yard.

BUILDING AND FENCING MATERIALS—The demand for lumber in the interior is brisk and the export trade is light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$16@18; do. surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$35@45.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, M.....	\$20 00
Rough refuse, M.....	\$6 00
Rough clear, M.....	\$2 50
Rough clear refuse, M.....	\$2 50
Rustic, M.....	\$3 00
Rustic refuse, M.....	\$2 40
Surfaced, M.....	\$2 50
Surfaced refuse, M.....	\$2 50
Flooring, M.....	\$3 00
Flooring refuse, M.....	\$2 00
Beaded flooring, M.....	\$2 50
Beaded flooring refuse, M.....	\$2 50
Half-inch Siding, M.....	\$2 50
Half-inch Siding refuse, M.....	\$2 50
Half-inch Surfaced, M.....	\$2 50
Half-inch Surfaced refuse, M.....	\$2 50
Half-inch Battens, M.....	\$2 50
Pickets, rough, M.....	\$1 40
Pickets, rough, pointed, M.....	\$2 50
Pickets, fancy, pointed, M.....	\$3 00
Shingles, M.....	\$3 00

The new scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—	
Rough, M.....	\$25 00
Flooring and Stepping, M.....	\$37 50
Flooring, narrow.....	\$40 00
Flooring, second quality, M.....	\$30 00
Laths, M.....	\$3 50
Furring, M.....	\$1 00
Redwood—	
Rough, M.....	\$25 00
Rough refuse, M.....	\$20 00
Rough Pickets, M.....	\$18 00
Rough Pickets, pointed, M.....	\$20 00
Fancy Pickets, M.....	\$20 00
Siding, M.....	\$25 00
Tongued and Grooved, surfaced, M.....	\$40 00
Do, refuse M.....	\$20 00
Half-inch surfaced, M.....	\$20 00
Rustic M.....	\$2 50
Battens M.....	\$1 00
Shingles M.....	\$3 50

Sugar Pine is jobbing at \$50@60 for clear and \$35@45 for second quality.

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 23c; Manila, 18½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 12½.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c. @5½, Salmon in bbls. \$5.00@6.00, hf do. \$3.50@4.00; Case Salmon, \$3.00 for 2½-b. cans, \$2.50 for 2-b. cans, and \$2.00 for 1-b. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.50@1.25; do No. 2, \$1.50@1.62½.

NAILS—Quotable at \$6.00@9.00 for assorted sizes.

RICE—Sales of China No. 1 at 6½@7c. and No. 2 at 6@6½c. per lb; Siam, quotable at 5½@6½c. in mats; Hawaiian, 9@9½c. per lb.

SOAP—The prices for local brands are 5@10c. and Castile, 12@12½c. per lb.

SUGAR—We quote Cal. Cube at 13½c; Circle A Crushed, 13c. and Granulated 12½c; Golden C. 11c; Extra Golden C. 11½c; Hawaiian 8@10½c. as extremes per lb.

SYRUP—Prices may be given as follows: 47½c in bbls, 50c in hf bbls, and 55c in kegs.

SALT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

TEA—We quote as follows for bulk descriptions: Amoy — Common to fair, 30@45c.; superior to fine, 55@65c.; extra fine, 75@85c. Foochow — Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Souchong and Congou — Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Japans — Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55 @75c. per lb.

A Thousand Flowers!

Is it possible to condense the fragrance of flowers, so that the perfume of a thousand could be confined in a single bottle? Yes, and in MURRAY & LAMMAN'S FLOWER WATER the feat is accomplished. A single bottle of that great perfume contains more fragrance than a thousand flowers.

THROUGH the length and breadth of the land the celebrated SILVER-TIPPED Boots and Shoes are sold by the million, for parents know they last twice as long as without Tips. Try them. For sale by all dealers. *

An easy Boot or Shoe is a joy forever. All who wear those made with the CABLE SCREW WIRE know it. Light, tight, will not rip—try them. * All bear the Patent Stamp.

San Francisco Retail Market Rates.

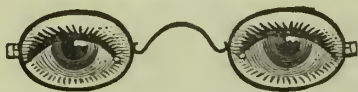
THURSDAY NOON, Sept. 26, 1872.

MISCELLANEOUS.	
Butter, Cal. fr. doz.....	50 @ 60
do Oregon, doz.....	18 @ 35
Honey, doz.....	20 @ 25
Cheese, doz.....	20 @ 25
Swiss Cheese, doz.....	45 @ 55
Eggs, per doz.....	50 @ 65
Lard, doz.....	18 @ 20
Sugar, cr., doz.....	10 @ 12½
Dry Cal. Hides, doz.....	12 @ 12½
Beet, doz.....	12 @ 12
Sugar, Map. doz.....	12 @ 12
Plums, dried, doz.....	15 @ 30
Peaches, dried, doz.....	20 @ 30
Wool Sacks, new 70.....	70 @ 70
Wheat-sks, 22x36 15.....	15 @ 16½
PRODUCE, ETC.	
Flour, ex, doz.....	1.50 @ 1.50
Superfine, doz.....	.75 @ .75
Corn Meal, 100 lb. doz.....	.30 @ .30
Wheat, per 100 lbs. 60.....	.65 @ .65
Oats, per 100 lbs. 1.50.....	.80 @ .80
FRUITS.	
Apples, doz.....	— @ —
Pine Apples, doz.....	— @ —
Bananas, doz.....	75 @ 75
Canteleups.....	15 @ 37½
Cal. Walnuts, doz.....	25 @ 25
Watermelons.....	25 @ 37½
Green Peas, doz.....	8 @ 10
Craneberries, doz.....	1.00 @ 1.00
Strawberries, doz.....	1 @ 15
Raspberries, doz.....	1 @ 15
Craneberries, doz.....	1 @ 25
Gooseberries, doz.....	— @ —
Cherries, doz.....	— @ —
Oranges, doz.....	50 @ 75
Lemons, doz.....	1.00 @ 1.50
Limes, per 100.....	2.50 @ 2.50
Figs, fresh, doz.....	10 @ 15
Asparagus, doz.....	10 @ 15
Artichokes, doz.....	10 @ 15
Brussels sprigs, doz.....	3 @ 5
Beets, doz.....	2 @ 25
Potatoes, New, doz.....	2 @ 2½
Potatoes, Sweet, doz.....	4 @ 4
Broccoli, doz.....	1.00 @ 1.00
Cauliflower, doz.....	1½ @ 1½
Cabbage, doz.....	1.00 @ 1.00
Carrots, doz.....	15 @ 25
POULTRY, GAME.	
Chickens, piece.....	75 @ 100
Turkeys, doz.....	25 @ 30
Ducks, doz.....	50 @ 50
Tame, doz.....	1.00 @ 1.25
Teal, doz.....	2.50 @ 2.50
Geese, wild, pair.....	1.00 @ 1.00
Tame, pair.....	3.00 @ 4.00
Hens, each.....	75 @ 75
Snipe, doz.....	10 @ 25
English, doz.....	10 @ 10
Quails, doz.....	2.50 @ 2.50
Pigeons, doz.....	1.00 @ 1.00
Wild, doz.....	2.00 @ 2.00
Hares, each.....	3½ @ 5
Rabbits, tame, doz.....	25 @ 25
Wild, doz.....	2.50 @ 2.50
Beef, tend, doz.....	18 @ 20
Corned, doz.....	8 @ 10
Smoked, doz.....	15 @ 15
Pork, rib, doz.....	10 @ 15
Chops, doz.....	15 @ 15
Veal, doz.....	15 @ 20
Cutlet, doz.....	12 @ 15
Mutton chops, doz.....	12 @ 15
Lamb, doz.....	12 @ 20
Tongues, beef, doz.....	12 @ 12
Tongues, pig, doz.....	12 @ 12
Bacon, Cal, doz.....	18 @ 18
Oregon, doz.....	18 @ 20
Hams, Cal, doz.....	16 @ 18
Hams, Oregon, doz.....	16 @ 18
* Per lb. + Per dozen. † Per gallon.	

VEGETABLES, ETC.

Supernine, doz. 4	75	@	—	Beans, cwt.	1 00	@	5 00
Corn Meal, 100 lb. 3	00	@	50	Dry Lima Beans,	17 00	@	25 00
Wheat, 100 lbs. 1	00	@	50	Flour, 25 ton.	17 00	@	25 00
Oats, 100 lbs. 1	50	@	50	Potatoes, doz.	25	@	2 00
FRUITS, VEGETABLES, ETC.							
Apricots, doz.	—	@	—	Celery, doz.	75	@	1 00
Pine Apples, 1 doz.	—	@	—	Cucumbers,	—	@	15
Bananas, doz.	75	@	75	Tomatoes, doz.	20	@	6
Cantaloupes, doz.	75	@	37 1/2	Onions, doz.	25	@	50
Watermelons,	25	@	37 1/2	Dried Herbs, b. b.	25	@	20
Cal. Walnuts, lb.	—	@	20	Garlics,	8	@	10
Cranberries, doz.	1 00	@	100	Green Peas, doz.	5	@	6
Strawberries, doz.	15	@	15	Green Corn, doz.	15	@	20
Raspberries, doz.	—	@	—	Lettuce, doz.	12	@	25
Cranberries, O. A. w.	1 25	@	125	Mushrooms, doz.	5	@	50
Gooseberries*	—	@	—	Horseradish, doz.	8	@	20
Cherries, doz.	—	@	—	Okra, dried, doz.	50	@	20
Oranges, doz.	50	@	75	Pumpkin, doz.	3	@	4
Lemons, doz.	1 50	@	1 50	Parsnips, doz.	20	@	20
Limes, per 100	2 00	@	—	Parsley, doz.	20	@	25
Figs, fresh, doz.	1 15	@	15	Pickles, doz. gal.	50	@	1 00
Squashes, doz.	50	@	50	Hubbards, doz.	6	@	25
Artichokes, doz.	50	@	50	Radishes, doz.	—	@	—
Brussel's sprts.	3	@	5	Summer Squash, doz.	3	@	25
Beets, doz.	25	@	25	Marrowfat, doz.	—	@	3
Potatoes, doz.	2	@	2	Hubbards, doz.	4	@	4
Potatoes, Jewett, doz.	50	@	50	Dry Lima, sh.	6	@	8
Broccoli, doz.	1 50	@	2 00	Spinage, doz. hskt.	25	@	50
Cauliflower, doz.	1 50	@	1 1/2	Salsify, doz. bunch	12	@	25
Cabbage, doz.	1 00	@	1 00	Turnips, doz.	—	@	25
— doz.	15	@	25				

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PEBBLES ARE MADE from Rock Crystal cut in slices and ground convex, concave or periscopic, for Spectacles. In Europe and in the Eastern States they are superceding glass.

Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.

They are COOLER to the Eyes—a very important gain. They are much harder than glass, and DO NOT SCRATCH.

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Illustrated Circular for style of frames sent to any address free.

Pebbles sold as such by us, are Warranted.
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Home Shuttle Sewing Machine.

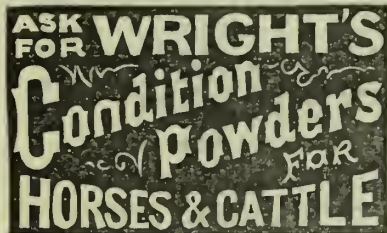
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This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (stitches on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

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The Simple Mailing Machine.

Its features are:
Simplicity of Construction.
Durability.
Ease of Operation.
Requires no expensive outlay.
Adapted to all styles of labels.
Puts them on securely.
It enables use of old papers for wrappers.
And soon saves the cost of printing labels.
It systemizes the work of mailing.
It is the cheapest machine.
May be paid for in part by advertising.
Address, for terms and description,
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Jackson, Tenn.

One of the above machines can be seen at the office of the PRESS.
11v4tf

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Manufacture all sizes of

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Which they offer to the trade at reduced prices; also the celebrated Obermann Self-Fastening Bed Spring.

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.
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23v3-6m

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21v2-1y

TULE LAND,

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16v23-3m

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Important to Wool Growers.



**PURE BLOODED
FRENCH MERINO RAMS
FOR SALE BY ROBERT BLACOW,
Of Centerville, Alameda County, Cal.**

These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock.
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Importers and Breeders of



Cashmere or Angora Goats,

—OF—

PURE BLOOD AND ALL GRADES.

For Sale in Lots to Suit Purchasers.

Including a Choice Lot imported by A. EUTYCHIDES, native of Angora. For particulars apply to

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—OR—

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Cotswold Sheep and Angora Goats.



A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

JUST ARRIVED!

Eighty-five head of Choice, Pure Bred Angora Goats—47 Bucks and 38 Ewes—this largest importation ever made to this coast, mostly from the flock of Richard Peters, of Atlanta, Ga. A pamphlet, with particulars, furnished to breeders on application.

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And all such as are interested in raising FINE STOCK, attention is invited to the flock of Severance & Peet, consisting of

80 Thoroughbred Spanish Merino Rams, and 200 Yearling and two-year old Ewes,

Just imported from Addison County, Vermont. These Sheep were all selected from noted flocks by one who has bred this variety of Sheep for fifteen years, and are superior in the combination of qualities that go to make up a perfect Sheep. A portion of this flock will be offered for sale on reasonable terms.

NOW IS THE TIME TO BUY,

As this variety is rapidly advancing in the East.

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Breeders and Importers of the

Cotswold, Lincoln, Leicester,

Texel and South Down

SHEEP.



ALSO, THE ANGORA GOAT.

Now offer for sale the Pure Bred and High Grades We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

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3v4-10t

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WOOL COMMISSION MERCHANTS,

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10v3-3m

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14 Yearlings,

9 this year Calves.

Apply to

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11v4-1m

White Ranch, Narcassio District,
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AT SACRAMENTO,

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THE MOST ATTRACTIVE SPEED PROGRAMME

Ever offered in the Union.

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A GRAND REGATTA ON THE RIVER,

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A public sale of Thoroughbred Stock at the Park each day of the Fair.

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6v4-td

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12v3-tf

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1 year Plum and Pear Trees, Roses and Shrubs, \$25 per C.
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Raspberry and Blackberry Plants, 6 varieties, \$2 per C.
Strawberry Plants, 10 varieties, \$1 per C; \$3 to \$4 per M. by express; Giant Asparagus and Honey Locust Hedge, \$1 per C. \$3 to \$4 per M. by express. Larger quantities and older trees proportionately low.

Send for Catalogue. **J. B. JONES,**

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Brandy.

Best grape brandy, vintage 1871.....\$25
Best grape brandy, vintage 1870.....25
Best grape brandy, vintage 1869.....25
Best grape brandy, vintage 1868.....25
Best grape brandy, vintage 1867 or older.....Diploma.

Dry Wines.

Best white wine, vintage 1871.....\$25
Best white wine, vintage 1870.....25
Best white wine, vintage 1869.....25
Best white wine, vintage 1868.....25
Best white wine, vintage 1867 or older.....Diploma.
Best red wine, vintage 1871.....25
Best red wine, vintage 1870.....25
Best red wine, vintage 1869.....25
Best red wine, vintage 1868.....25
Best red wine, vintage 1867 or older.....Diploma.

Sweet Wines.

Best white wine, vintage 1871.....\$25
Best white wine, vintage 1870.....25
Best white wine, vintage 1869.....25
Best white wine, vintage 1868.....25
Best white wine, vintage 1867 or older.....Diploma.
Best red wine, vintage 1871.....25
Best red wine, vintage 1870.....25
Best red wine, vintage 1869.....25
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Best red wine, vintage 1867 or older.....Diploma.

Special Wines.

Best California port wine, vintage 1871.....\$25
Best California port wine, vintage 1870.....25
Best Cal. port wine, vintage 1869 or older.....Diploma.
Best California sherry wine, vintage 1871.....25
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Best California sparkling wine, vintage 1870.....25
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Best California Angelica wine, vintage 1871.....25
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Miscellaneous.

Best samples of grape syrup, not less than one gallon.....\$20
Best sample of grape sugar, not less than five pounds.....20
Best twenty-five pounds of raisins.....50
Best still.....50
Best grape crusher and separator.....50
Best and cheapest tank, cask or butt for wine or brandy for storage.....50

Grapes.

Best twelve varieties of the table grapes, not less than three bunches each.....\$25
Best six varieties of table grapes, not less than three bunches each.....20
Best three varieties of table grapes, not less than three bunches each.....15
Best two varieties of table grapes, not less than three bunches each.....10
Best one variety of table grapes, not less than three bunches each.....20
Best twelve varieties of wine grapes, not less than three bunches each.....25
Best six varieties of wine grapes, not less than three bunches each.....20
Best three varieties of wine grapes, not less than three bunches each.....15
Best two varieties of wine grapes, not less than three bunches each.....10
Best one variety of wine grapes, not less than three bunches.....20
Best variety of raisin grapes.....10
Best and greatest variety of grapes, not less than three bunches each.....60
Second best and greatest variety of grapes, not less than three bunches each.....40

The above list of premiums, together with the Rules and Regulations which have been adopted by the Association, will be published in a pamphlet form for free circulation on application to the Secretary, I. N. Hoag.

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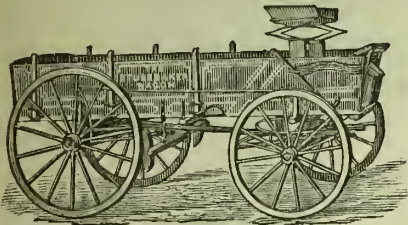
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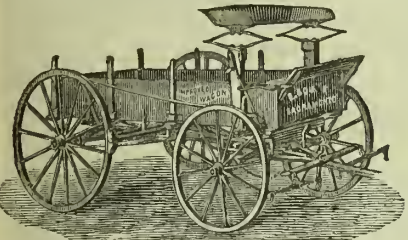
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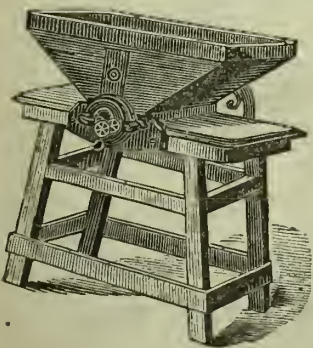
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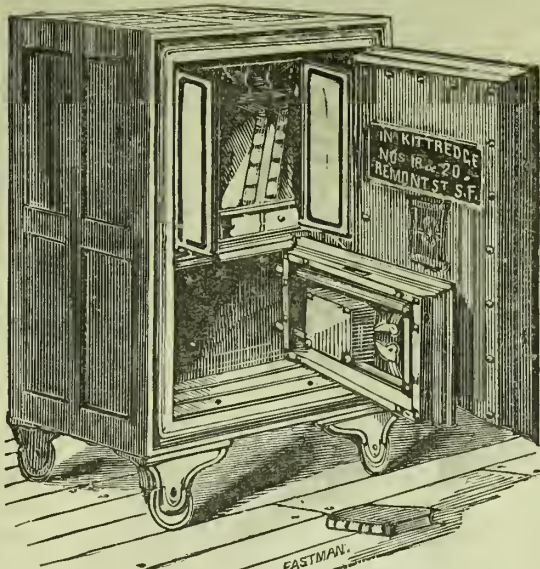
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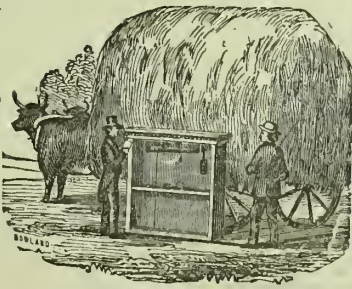
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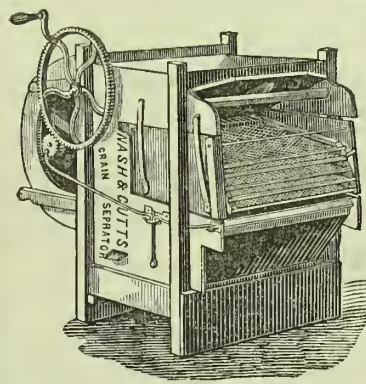
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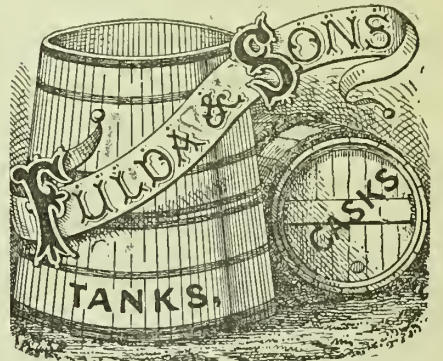
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13v4-cow

Something New for the Kitchen.

THE Aerating Egg Beater.

Various devices have been presented to the public for beating eggs, but nothing, we think, equal to the one herein shown. This, in fact, is the only aerating device ever made, and is very properly called the "Aerating Egg Beater." This Beater, as will be seen by reference to the engraving, is simply a tin can with a cone bottom and a cone dasher, the lower portion of the dasher being perforated with very small holes, as shown. Under this arrangement the upper portion, when forced down, fills with air, which is forced through the egg, thereby finely dividing and thoroughly aerating the mass. It beats one egg as well as half a dozen. For further particulars address

WIESTER & CO.,
17 New Montgomery St. (Graud Hotel Building), S. F.



Volume IV.]

SAN FRANCISCO, SATURDAY, OCTOBER 5, 1872.

[Number 14.]

Cape Horn.

In our illustration we present one of the most notable objects of interest in the great Northwest. It was photographed by C. E. Watkins, Yosemite Art Gallery, S. F., and engraved by R. S. Bross of N. Y., expressly for the columns of *Croft's Western World*; and we are indebted to that paper alike for the engraving and the accompanying word description of the beautiful scene presented.

Cape Horn derives its name from the danger in passing; it is a bold promontory, situated on the north side of the Columbia River, in the Territory of Washington, about midway between the Cascades and the Dalles. The river bends around it from the Northeast, the channel keeping mid-stream, in which are numerous rocks that rise above, or near to the surface of the water, which, together with the high winds that often blow a strong gale "around the horn," dashing the waters into a foam against the rocks, make the passage a dangerous one, even for the most skillful oarsman.

This promontory is of basaltic formation—like most others on the Columbia—and rises near two hundred and fifty feet perpendicular from the water's edge, and extending about a mile in length, the lower part projecting several hundred feet out into the river. Near the summit, and from many crevices of the cliff, a kind of fir or stunted cedars are to be seen, which add materially to the charm of this otherwise most romantic locality.

Only a short distance above Cape Horn—on the South, or Oregon side of the river—is situated another perpendicular rock of peculiar basaltic formation, "Rooster Rock," and still another, which rises from the middle of the river for some hundreds of feet, called "Lone Rock." At another point a tiny stream of sparkling water pours over the cliff in one unbroken fall, seven hundred feet in height.

Our illustration represents a small party of pleasure and curiosity seekers, on a pleasant afternoon, when the wind had lulled, who have successfully rounded the Cape, and are about landing at the base of the promontory, while above them—kind of guard of honor—soars the intensely blarneyed bird of the nation—the American Eagle. Near the party are to be seen some of these peculiar basaltic formations which are common to the

Columbia—formations that many eminent geologists like so well to tell us *all about*; but, since the learned report on the Cardiff Giant, reports should be taken with many grains of allowance.

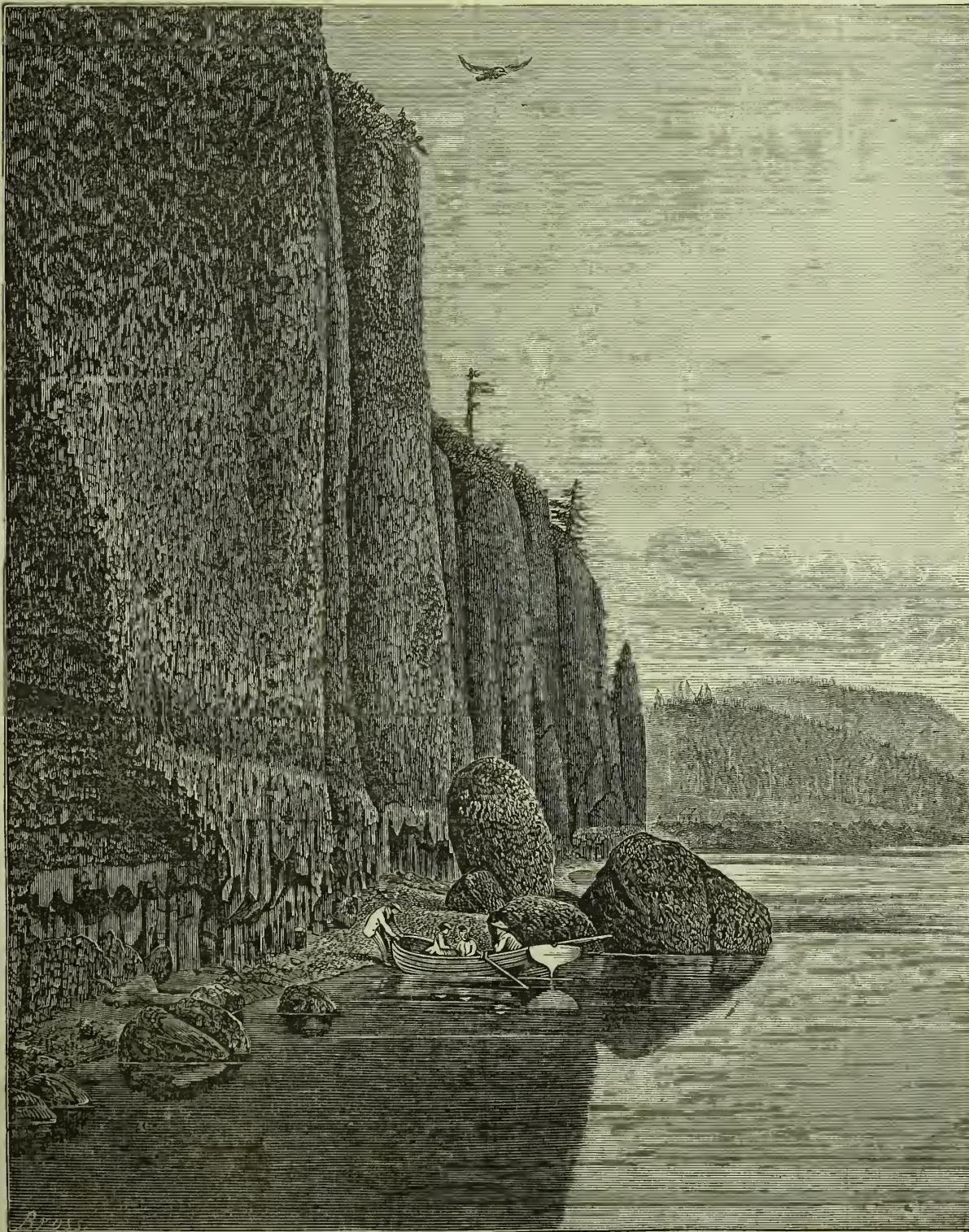
The Columbia River is navigable a distance of one hundred and thirty miles, from the

northern and southern direction; the Cascades are a continuation of the Sierra Nevada Mountains of California, and are the central range. The eastern range is above the great falls of the Columbia. The western is along the shore of the Pacific Ocean, called the Coast Range. The Columbia has three large falls in the

Old Fort Walla Walla, now Wallula—there are two great falls, known as the American and the Shoshone, the latter being three hundred and sixty-two feet perpendicular, with cliffs towering on each side one thousand feet from the water's edge.

The Cascade Range is the most important of the three ranges of mountains named, and derives its name originally from the great number of beautiful cascades which pour out of almost every ravine and crevice of the mountains, many times from the very summit presenting in the sun's rays a grand constellation of glittering jewels.

For varied and remarkable scenery the Columbia River, for one thousand miles from its mouth, is certainly the most notable of any river in the world. The most magnificent views of earthly scenery are presented from different points. High mountain peaks, covered with perpetual snow, are to be seen in all directions. Among these peaks the most notable are Mt. Hood, Mt. Jefferson, Mt. Adams, Mt. St. Helen, Mt. Rainier, and the Three Sisters. The sight is grand beyond description. At places, the country, as viewed from the river, looks barren and worthless, and the waters move sluggishly towards the sea. At others, the country presents the most beautiful appearance, with gardens, vineyards, crops and herds—a perfect Elysium. Again it is covered with thick forests of heavy timber—or the broad, rich bottom lands are awaiting the husbandman to yield a thousand fold the seed sown. Another view, and we have the submerged forests; then again, the towering basaltic cliffs rising on each side of one thousand to fifteen hundred feet in height, through which the river runs with a rapid current. Many beautiful cascades are to be seen on each side, while passing along this narrow channel; some of these in their fall from the heights, are lost in spray before they reach the river below, while others come pouring down



CAPE HORN ON THE COLUMBIA RIVER.

Ocean to the Cascades, the head of tide water. At the Cascades, Dalles, and several other places, railroads have been built around the falls and dangerous rapids, which connect with steamboats of light draft, which run up the Columbia and its numerous tributaries for seven or eight hundred miles distant.

There are three general ranges of mountains west of the Rocky Mountains, running in a

distance of seven hundred miles; the Cascades, one hundred and thirty miles from the ocean; the falls of the Columbia, forty miles above the Cascades; and the Kittle Falls, five hundred and thirty miles above the Columbia. Besides these falls, there are many dangerous rapids. On the Southern Columbia, Lewis, or Snake River, as it is more commonly called, which unites with the main river a few miles above

from over the cliff, hundreds of feet above, in one unbroken sheet. Many of these falls would present at a distance the appearance of a mountain-glacier, were it not for the fine sheets of spray, which are wafted by the winds in clouds hundreds of feet away.

The climate in the Valley of the Columbia and its tributaries is unusually healthy, and unrivalled by any in the Union.

CORRESPONDENCE.

Vineyards of the Foothills.

That our Eastern readers may form something of an idea of the importance that the vineyard interests of California are likely to assume at no very distant day, we give the remarks of a correspondent of the *Stockton Independent*, writing from Gold Spring, Tuolumne County, in which he speaks of the vineyards to be found within the circle of two miles of foothill lands.

When it is understood that these foothills occupy the whole western base of the Sierra Nevada, more than three hundred miles in extent from north to south, and with a breadth of from five to fifteen miles, and nearly every acre suitable for vineyards, and that at present not one twentieth part is devoted to any description of culture, something of an idea can be formed of the opportunities yet open to the immigrant of the Atlantic States and European countries.

The Grape Interest.

Before leaving Stockton you requested me to examine into the vine-growing interest in the neighborhood of Columbia and Gold Spring, the extent of the vineyards, the quantity of fruit produced and the quality and adaptability for making wine, etc. I am, therefore, pleased to send you the following:

I first visited L. F. Jarvis on his vineyard called Vine Spring Vineyard, at Gold Spring. It contains 40 or 60 acres, planted with vines, a large portion being yet young and not in full bearing. He has produced, for the last three years, about 7,000 gallons of wine each year, also a quantity of raisins and other dried fruit from his fine orchard. This year Mr. Jarvis will produce about 10,000 gallons of wine, or 60 tons of grapes.

John Moore has the next vineyard of about five acres, which will produce 20 tons of grapes. Mr. P. M. Trask has the next vineyard, just above Gold Spring, overlooking that place, and is located on high ground with a fine view of the surrounding country. He has 15 acres with vines, or 15,000 vines, that produced about 6,500 gallons of wine. The vineyard looks very finely. There is also a very fine orchard of peaches, apples and pears, and some fine large fig trees. Mr. Trask will have 45 tons of grapes this year.

Mr. John King's vineyard adjoins this ranch, which produces 15 tons of grapes. Mr. McNichols is next, and produces 15 tons also. Next to this is the Gold Spring Vineyard, owned by Mr. Caverone, with a production of 50 tons of grapes. Mr. Daniel Johnson's vineyard, one mile from Columbia, produces 25 tons of fruit.

Mr. A. D. Champney's Mayflower Vineyard on Table Mountain, near Springfield, has 35 acres in vines and a fine fruit orchard. Only 10,000 of the vines are in bearing and will produce this year 5,000 gallons of wine, or 35 tons of grapes. Mr. Newbumer's vineyard joins this. It has five acres in vines and will produce 15 tons of grapes.

Mr. George White's vineyard, just below Springfield, of 15 acres, and several other vineyards in the same locality, will produce 45 tons collectively. At Shaw's Flat, one mile from there, are also several small vineyards capable of producing 15 tons or more of fruit; and below Columbia, on the Sonora road, is Mr. Bird's vineyard, and several others, which will produce together 35 tons of grapes.

The vineyards in the vicinity of Yankee Hill produce some 7,000 gallons of wine or 50 tons of fruit. Parsons Bros. at Columbia, have six acres in vineyard that produces 15 tons of grapes, and in the same locality there are some other small vineyards which produce from 10 to 15 tons or 1,500 gallons of wine.

The vineyards near Summit Pass will produce 10 tons of grapes, and Mr. Rheme's vineyard, near Columbia, about 16 tons of grapes.

Circle of Two Miles.

The entire product of the locality mentioned, all within a circle of two miles will amount to 471 tons of grapes or 70,850 gallons of wine. This estimate is made at the very lowest possible yield, and I feel satisfied that if the entire grape crop of this locality were collected that could be made available at this point that it would amount to not less than 100,000 gallons of wine; besides a large quantity of brandy could be made.

I have examined the wine produced in the the majority of the vineyards mentioned, and am satisfied that the grapes grown on them will make excellent wine, but most of the wine is spoiled in its manufacture. To manufacture a good wine it requires a great deal of experience and thorough knowledge of the material from which the wine is to be made.

The best method to advance this great interest is the establishment of a large wine house by some one who understands the business thoroughly, where the wine grower can sell his grapes and not be subjected to the risk of making a bad and unsaleable wine. Such an establishment could place a uniform and perfect article in the market, which would not spoil

and would be sure of a quick sale at a paying price.

As soon as such an establishment is started in this locality you will see the hills around Columbia and Gold Spring covered with fine vineyards, and the vintners of this locality will find that it is more profitable to sell their grapes to such an establishment than to make poor wine. With a ready market at their door they will find that grape raising is one of the best paying agricultural pursuits, besides being the most pleasant.

When the importance of the wine-growing interest of this locality is thoroughly understood, you will very soon after see the railroad coming up this valley to freight away the product. Hoping that this will meet the object of your inquiries, I remain yours respectively,

H. W. Q.

Gold Spring, Sept. 15, 1872.

Raisin Grower Abroad.

ED. RURAL PRESS:—Having just returned from a European tour, the last part of which partook somewhat of a business character in which my California friends may be interested, I send you this item hoping that it may be acceptable to your columns.

Malaga.

We had determined to make Malaga the scene of our last visit in Europe, and with this view had been studying its history; how it has always been a commercial city, how it has belonged successively to the Carthaginians, Romans, Goths and Moors, and how through long centuries and all these changes its productions and exports have been as at present, wine and raisins, surpassing in quantity and quality any other place in the world. Here then should be our place to learn about these products,—products so well suited to our pleasant California home.

Malaga is a city of 120,000 inhabitants, and is the chief city of southern Spain. It is built on the side of a wide bay of the Mediterranean bordered by lofty mountains, while to the eastward from the hill-tops it is overlooked by the ruins of its ancient fortifications.

Many English and American merchants reside here. In addition to the immense trade in wine and raisins, quantities of figs, nuts, olive oil and brandy are exported.

Wines.

Thirty or forty thousand butts of wine are produced annually, nearly all of which is exported to the United States. There are three general varieties of wine made, viz.: Mountain, a sweet wine, Malaga and Legrimas,—the tears—which is the richest and best. It is made from the juice that exudes and drops into a vat, the grape being suspended for that purpose, and not crushed as in the ordinary way.

Some forty kinds of grapes are cultivated. Generally those pleasant to the palate do not make good wine, and those that make good wine are not pleasant to the taste. There is an exception to this rule in the production of a small quantity of wine made from Muscat grapes, which are usually with more profit made into raisins. But this wine is good only in its use to qualify other wines by mixing a small portion of it with them. I cannot write on this subject—I'm not a wine drinker—but I have a wonderful liking for

Raisins.

Of these, three varieties are made. First—The Muscates, which are of superior flavor, good size and of symmetrical bunches, in short they are the best raisins made. They are packed in boxes of twenty-five pounds each, or in half or quarter boxes, containing a half or quarter of that quantity. Secondly—Sun or Bloom raisins, which are prepared in precisely the same way as the Muscatel, but from a different grape. These grapes are very large and long and are covered with bloom like a plum. They are here known by the name of *Uva larga* (long grape). The best of these raisins are packed in boxes and marked "Bloom Layers." The poorer are packed in casks, and are generally picked from the stems. Thirdly, are the Lexias, so called from being dipped in ley (lexia) made from wood ashes, before being dried. These are packed in casks or grass mats and are much inferior to the other varieties.

Raisin Making.

They commence gathering grapes about the middle of August, choosing only the bunches which are fully ripe. In a week they return for another selection, and so continue till all are gathered. The raisins are dried on the ground, on vacant spots left in the vineyard for that purpose. These are selected where the ground is of the darkest color, that it may absorb the full force of the sun's rays during the day and retain the heat during the night. The bunches are carefully laid upon the ground in such a manner as not to press upon each other. They usually dry in from twelve to fifteen days.

Climate.

Here are the same clear soft-blue summer skies and crystal atmosphere as in California, while the average temperature is a little cooler than in Sacramento Valley. Irrigation is as necessary here as with us, though they have dews here, sometimes heavy, but always injuri-

ous to drying raisins. Contrast this with the entire absence of dew in the great valleys of California and you will realize one advantage in our climate over this most renowned raisin-producing region of the world.

Conclusion.

I have purchased a quantity of the best varieties of raisin vines, which I shall thoroughly test here, with a view of engaging extensively in the production of this desirable article of food. I cannot answer private correspondence on this subject, but will answer through your columns any questions of general interest of which I may have a knowledge worth imparting to others. Believing it to be a duty to contribute to the fund of information which our leading agricultural paper should contain, I remain,

Yours with respect,

W. A. SANDERS.

Red Bluff, Oct. 2, 1872.

Wine Growers' Association.

The following are extracts from the address of G. G. Blanchard, of El Dorado, before a recent meeting of the members of the above named association at Sacramento:

It was for many years that the *Vitis Venifera* of the Continent of Europe was accounted the only variety which could be successfully cultivated in America, for wine making. The science of the vine grower was bounded by the horizon of European experience. The mind of the American culturist never left the furrow his fathers had made; a hybrid or grape of indigenous growth, he never had the hardihood to estimate. The same varieties of grapes, in different localities, have different flavors, and make a dissimilar wine. The Catawba and Hungarian of Coloma are unlike those of any other locality.

The fruit of the vine never follows in quality that of the parent seed. That of the Tokay produces anything but the Tokay; whether or not the great family of vines, which now number thousands, originated from one or more primordial forms, is not known. Yet we do know that the varieties are increasing.

The quality is also a constant subject of change. The Isabella, at first found by Isabella Gibbs, from whom it derived its name, a wild plant in 1817, and the Catawba, discovered by Adlum on the banks of the Potomac, were not in quality what the same varieties are at the present time. Manner of pruning, time of pruning, mode of cultivation, soil, climate, and character of dressing, all possess a wonderful influence over the fruit. The varieties may be increased, almost indefinitely, by a systematic cultivation of seedlings and hybridization.

Every country will produce its own variety of any particular product; while the species is never changed by emigration, the quality is.

From the wonderful improvement wrought upon the vine by the hand of man, and the facility with which it yields to his skill, it has been denominated the "Human Vine." Its facile stem may to any form be trained, and its pendant clusters of every size and hue excite the admiration of stoics. The Parrhasian deity, fed in infancy on ambrosia and wine brought by pigeons from streams of ocean, and nectar drawn by eagles' beak from the rock, was the father of our Bacchus, the first discoverer and cultivator of the vine, and of the mode of extracting its precious liquors.

The wine groves of Icarus, under his culture, made Atica famous, and the inspirations excited by their juices of his extraction made Icarus immortal in history. The sultry delicacy of the voices of her timid maidens keeping time with the swinging thyrsi gives to the vine a delicious antiquity, and festoons its early memories with poetry, love and grace. Vine bowers gave to the *Idean vale* mellow, voluptuous pleasures, and softened to enchantment the rays of light as they streaked among its fruits.

"Glory, the grape, love, gold—in these are sung
The hopes of all men, and of every nation."

No particular system of cultivation is absolutely the best for every locality and condition. The soil, nature and variety of grape, climate and age of plant must all be considered. All methods are successful in a degree. But the greater the care and skill, the more complete the success.

Next to the horse the vine is man's most attractive and obedient servant, and as readily responds to his mastership. It produces the mistress of fruits. There is enjoyment and nourishment in the eating and the enjoyment is prolonged in the consumption of its wines. Its culture in California is yet in its infancy. Who can point to a single variety of indigenous grape of any considerable extent of cultivation? Is it ascertained what variety is best, and best suited for different localities? All that can be said is, that this or that of the exotics is superior to some other. But not until the cultivation of the seedling has become general and choice selections made from these can it be said that this or that is best.

The only indigenous vine in El Dorado county of which I have any knowledge is known as Broad's XXX, a seedling culled from 2,500—its fruit resembles and is about the size of the Muscat of Alexandria, possesses a virgin taste, marked for its luscious fruity piquancy, but unmixed with any known bouquet; the vine, in consistency, is between the compact Catawba and porous sweet water, the pips small and few.

The vine is susceptible of wonderful improvement by crosses. By hybridizing the different varieties of acknowledged excellence a perfect cross may be produced. They unite with mu-

tual and happy effect, yielding a quality of bouquet and aroma unlike either, but peculiar to both. The real extent and worth of our soils we shall never know until hybridizing and the rearing of seedlings is made the study and has secured a modicum of employment.

I believe California will yet produce a richer, more palatable, more marketable and sanitary wine than Europe, and for the table our present varieties of grapes excel.

How to Put Up Honey.

Last season I put up about 1,000 pounds of honey in glass jars, and in two seasons previous, I put up almost the same quantity. I had no difficulty in disposing of it, and had a great demand for it after it was all gone, and could have sold three times the quantity, if I had it.

I now propose to tell your numerous readers how I did it. I purchased my jars by the gross, in New York, getting the kind most suitable for that purpose, which, according to my idea, was the Dexter. The quart jars were used, which hold a trifle over three pounds when filled.

A piece of nice white comb, or two pieces as large as can be conveniently introduced, is put in the jar, which is then filled with nice liquid honey. Buckwheat honey should not be put up in this way, as it candies soon and is not as salable.

A piece of comb shows what it is and helps very much in making sales. "It is so nice to have a piece of comb," they will say. Some of mine (the first that was put up) had no comb in them, and when customers ordered the second time, they said send as many as possible with comb in them. Now for selling it! I did not send it to a commission merchant, but found my customers and traded with them direct.

Save the Commissions.

They said they could sell it much better to buy directly of the producer, besides saving the commission.

I was in New Hampshire then, 100 miles from Boston, and learned of reliable dealers in most of the large places between me and Boston. Samples of my honey were sent to several of these places, from which, in some cases, I realized more than I afterwards sold it for at wholesale. Where I had an acquaintance, he would willingly show the sample to the grocery-men, and in no place where I sent a sample did I fail in getting an order.

I made boxes large enough to hold one dozen jars, packed in sawdust, and sent by express, never having one broken or lost.

They were delivered to purchasers' express office at \$13 per dozen, C. O. D., and some offering higher price for first choice. I realizing fully twenty-five cents a pound, net, and sent it off as fast as I could put it up. They retailed it for \$1.15 to \$1.25 per jar, making a good profit, and desiring to trade with me in the future.

That is how I did it, and others may do the same. A nice label was pasted on each jar.

The honey, after being removed from the combs, should be warmed before putting it in the jars, as it will prevent it from candying so soon.—*Cor. Bee-Keepers' Journal.*

Railroad Timber.

The Santa Cruz *Sentinel* learns from Mr. C. W. Davis, who has had considerable experience in railroad car-building, that white fir is a first-class material for building truck, platform and passenger cars. It is superior in point of strength, elasticity, hardness and durability; when thoroughly seasoned, as is well known by wagon-makers, who use this timber for wagon beds, a nail or spike can hardly be driven into it. Mr. Davis for over two years was the car-builder for the Market Street Railroad, San Francisco, and during that time built all the cars of the road, up to its transfer with the Southern Pacific; he also had charge of their works, and built the turn-table, and the depot at Menlo Park, etc., and during that time had occasion to use large quantities of Eastern ash, oak, hickory, and other hard woods, and his opinion is that fir is superior for the various wood-purposes in railroad and car-building, where the best of durable, hard, tough wood is necessary.

A car bolster is generally 8 or 10x12 inches square, by 9 feet long, and the sills are 4x8 and 4x10, and 40x60 feet long, according to the length of the car, and it is required that the timber be of the best material. The Eastern wood, on account of long passage, steaming in a ship's hold, has no life—it dries-rot, or becomes more or less brittle, consequently a better wood is needed, which the fir of Santa Cruz supplies. Railroad and car builders may do well to make a note of this.

THE OCCUPANTS OF SPACE.—The number of stars visible to the naked eye, in the entire circuit of the heavens, has been usually estimated at about 6,000; an ordinary opera glass will exhibit something like ten times that number; a comparatively small telescope easily shows 200,000; while there are telescopes in existence with which, there is reason to believe, not less than 25,000,000 stars are visible. And yet when all of these are seen and numbered, the eye will have visited but a mere speck in the illimitable bounds of space.

FARM NOTES.

Rules for Management of Cows.

Never buy a cow of a dairyman, for if he is a good manager he will sell only his poor animals.

To determine which cows are the best for keeping, try their milk separately, and weigh their butter—for sometimes a cow may give much milk and little butter, and vice versa.

Cows should run dry six weeks before calving—if milked closely before calving the calves will be poorer.

A cow newly come in should not drink cold water in cold weather, but moderately warm slop. Calves intended for raising should be taken from the cow within a few days, and they will be less liable to suck when old. Feed them first with new milk for a time then skim milk, taking care that all the changes are gradual, by adding only a portion first; add gradually a little meal.

Calves well fed and taken care of, with a quart or two of meal daily in winter, will be double the size at two years they would have attained by common treatment. Heifers thus treated may come in at two years old, and will be better than neglected animals at three, and one year of feeding saved.

Hearty eaters are desirable for cows, and they may usually be selected while calves. A dainty calf will make a dainty cow.

Heifers should become accustomed to be freely handled before calving, and their teats should be drawn. They will not then be difficult to milk. Begin gradually and never startle them.

In milking cows, divide the time as nearly as practicable between morning and evening, especially at time of early grass, that the udder may not suffer.

Persons who milk should keep their nails cut short—animals are sometimes hurt with sharp nails, and are unjustly charged with restlessness.

Old cows should be fatted at fifteen years. The dairyman, therefore, who has fifteen cows, should raise a heifer calf every year to supply the vacancy; if the herd is thirty cows he should raise two calves and so forth.

Heifers dried up too early after calving, will always run dry about the same time in after years—therefore be careful to milk closely the first year, until about six weeks before calving.

Spring cows should come in while they are yet fed on hay, and before they are turned to grass, which will be more likely to prevent caked bag and milk fever.—*Annual Register.*

Worn-out Soil.

Our American farmers talk a great deal about worn-out soils, just as though land would not remain fertile forever if as much plant-food was returned to it as taken out. In the agricultural districts of Europe a farmer is expected to constantly increase the fertility of his land instead of wearing it out.

Mr. Lewis, of England, made experiments with soil owned in one family a thousand years. He sowed a piece continuously to wheat for twenty-seven years, with an average crop of fifteen and five-eighths bushels per acre. A piece in barley nineteen years, gave twenty bushels per acre; and a piece in grass, fourteen years, gave 2,600 pounds a year. This soil, consequently, represented the condition of the soil, with the ordinary cultivation and rotation as practiced; but similar land of the same farm, to which fourteen tons of manure had been applied, produced thirty-six bushels of wheat and thirty-six bushels of barley; and with two hundred pounds of sulphate of ammonia and three hundred of phosphate, it produced forty-eight bushels of barley. This, again, shows the value of manure in England and the increased fertility of its soil through the application of manure; and any farmer, knowing the cost of manure in his locality, may easily estimate whether it will pay him to use it or not, bearing in mind always that it is much cheaper and easier to keep up the fertility of the soil than to bring it back when once it is impoverished.

Fertility of Water.

The following is an extract from the speech of the Hon. Robert B. Roosevelt in the House of Representatives, May 13th, 1872, comparing fish culture with agriculture:

The relative fertility of the water and the land is altogether in favor of the water. An acre of land will produce corn enough to support a human being, but an acre of water will support several persons, and could readily be made, with proper aid, to sustain the lives of many more. The former requires manning, working, planting and harvesting; the latter merely requires harvesting; and that, where the fish are sufficiently abundant, is hardly labor at all.

While the yield from the land is reasonably large, the profit is exceedingly small. The field must be plowed, and harrowed and fertilized; the corn must be planted; it must be plowed again; and still again, must be hoed; and at last the ears must be stripped, husked and ground. What is the net result of this compared with the natural increase of fish growth in abundance, almost without effort, finding their own food, and finally taken in some net which does its fishing while its owner is sleeping?

Important Experiment in Chicken Raising.

The following results of careful experiment in the raising of chickens, and the preliminary arrangements thereto, will be interesting to all who would raise fowls for market, expecting to make the business profitable:

An experiment with thirty hens and one rooster was tried for sixty days, as also a rooster with six hens for the same length of time, to see what would be the effect as a matter of fact in the two processes of breeding fowls, and to ascertain the effect upon the embryo in the egg, after the expiration of sixty days in the two lots of fowls, which of course were not allowed to communicate with each other, nor with any other fowls.

The result ascertained was this, that at the expiration of sixty days the embryo in the eggs of the six hens was found to be double the size of those of the thirty hens, and that but few of the eggs hatched in setting of the hens among the thirty fowls, while nearly every one of the eggs were hatched from those obtained from the six hens; and the vigor or strength of the chickens of those of the six hens at the time of their hatching was fully equal to those from the hatchings of the thirty hens a week old.

It will be necessary only to state that neither of these lots of fowls were confined, but had a large range, and were the result of the breeding of fowls that had been kept in the same manner for a series of generations; neither had they been degenerated by breeding in and in, but with reference to the production of healthy and vigorous broods of chickens.—*Cor. Pomeroy's Democrat.*

The morale from the foregoing would seem to be this, that though roosters are often forced into Mormonous positions, the thing may be overdone as affecting the health and strength of the offspring.

Small Farm Maxims.

1. Small farms are cheaper and easier to manage than large ones, and pay better for the capital invested. Therefore, small farms are best.

2. If you want to make your farm pay, you must give it your daily personal attention. But if your farm is too large you cannot do this; hence, as I said above, small farms are the best.

3. If you don't want your farm to run away, you must stop the little leaks. We may expect fewer leaks on a small place than on a big one, hence again, small farms are best.

4. Feed your land well, and it will feed you. It takes less to feed a few acres than a great many. So you see small farms are best.

5. If you would live long and enjoy life, work a little, then rest a little. But if you have a large farm you must labor all the time. Here again, small farms are best.

6. To raise big corn, you must keep small grass. To make small grass you must cut often. So in this, we find small farms the best.

7. If you have a good fence you need fear no loss by stock. But fences are costly. Thus once more we find small farms are best.

8. If you want good roads, and plenty of schools, churches, and mills you must have a dense population. If farms are large this is impossible. Therefore, I declare small farms to be best.

9. Farms should increase in value year by year. It costs less to improve a few acres than a great many. Here, as before, small farms are best.—*B. W. J., in Rural Carolinian.*

WORKING UP BEESWAX.—The old-time practice of the wholesale destruction of a colony of bees when the honey was to be taken, has been considerably reformed in view of the fact that it is poor economy to kill the goose which lays the golden egg; and the wholesale destruction of honey comb has been stopped, as it has been discovered that it is largely economical to supply the old comb to other hives to help young colonies to set up in their housekeeping. Still there will be comb to be made into wax, and it is well to know how to make the most of it.

A pound of common beeswax in the lump is worth, say thirty-five cents, and a pound of bleached wax is worth, in the lump, twice as much. When maple sugar first appears in the early spring, you will see it sold in neat little cakes at the rate of seventy-five cents to a dollar per pound, when the price in the lump is twenty-five cents. So with beeswax; take a parcel of salt-cellars, and cast little cakes of wax, sixty to the pound, and sell these at five cents apiece.

Before casting the cakes of wax, prepare a lot of silk ribbon loops, which will serve to hang the cake of wax by, and as the wax is poured into the moulds, lay the ends of the loop in the edge of the mould so it will stick well in the wax, and you have neat and saleable little articles which will fetch very much more than the same material in the lump.—*Rural New Yorker.*

A DISEASE among silkworms, known as *pebrine*, is now being rapidly and successfully exterminated by destroying the eggs from all the moths that are affected.

MISCELLANEOUS.

Tide Power.

F. G. Bramwell, C. E., at the late meeting of the British Science Association, remarked at considerable length upon the necessity which would soon be felt for devising some substitute for coal, as a source of motive power; and after pointing out various possible substitutes therefor, seemed to infer that the most practical one which presented itself at this time was tide power. On this subject he said:

I would suggest that, in those cases where there are large manufacturing districts within a few miles of the sea, and where there is a rise and fall of the tide, coupled, in the outset at all events, with natural indentations of the coast which might be comparatively readily dammed up for the storage of the water, there such storage should be made, that the water should set to work turbines, which will work with very nearly the same percentage of the total power given out by the water, whether they are immersed, or whether they are not—that these turbines should be employed in pumping water at a high pressure into accumulators, and that pipes should be laid on from those accumulators to the neighboring manufacturing town, and should there deliver their power to the consumers requiring it, to be used by them in water-pressure engines.

Suppose a beginning were made with the city of Bristol, which is very favorable for the application of this suggestion. Here the rise and fall of the tide might be taken at 24 ft. Half a square mile of water enclosed would, after the most lavish deductions for loss, yield in Bristol at least 5,000-horse power, probably sufficient to replace the whole of the power of the stationary engines now at work in Bristol. This subject appears to me, looking at the opportunity which good turbines give of utilizing the power residing in water under constantly varying conditions of head—looking at the fact that this power may be transferred to an extremely small quantity of water under high pressure, and that, therefore, such water may be transmitted for many miles through pipes at low velocities, even although those pipes be of no great size. Looking at these facts, I say, I cannot help thinking that there is here open to the talent of the mechanical engineer a new field of enterprise, and one which, if successful, would tend to economize the fuel we so much value, and to leave more of it for consumption in metallurgical operations, and in other operations requiring heat.

We may mention in this connection that the ideas above suggested, or something similar, are about to be tried at the mouth of Quinepiac river, a stream which empties into New Haven (Conn.) harbor. Great expectations are entertained of the economy and success of the experiment, which is to be undertaken on a plan different from anything heretofore employed in utilizing the power of tide water.

A STEAM PAVING TOOL.—A novel apparatus of this kind has lately been tried in Paris, namely, a Steam Rammer. As used from time immemorial the rammer is a heavy iron-shod implement which the workman raises about a foot from the ground and allows to drop, as rapidly as he may, successively upon the boulders or blocks to be set. The object of the invention of Mr. Lignier is to save the laborer the severe physical exertion of raising the heavy tool; an exertion producing in time an injurious effect upon the lungs. In the apparatus of M. Lignier the heavy weight is lifted by a small Lenoir gas engine. To the fly-wheel of the engine is connected the rammer of steel, smaller but heavier than the ordinary instrument. The movement of the machine is controlled by the operator; and the rapidity of the operation, according to the inventor, more than counterbalances the greater cost.

EFFECT OF CHANGE OF BAROMETRIC PRESSURE ON HUMAN BEINGS.—Mr. Paul Best has shown in *Les Mondes* that in the destruction of life by diminishing the barometric pressure, the direct cause is the deficiency of oxygen, and that an animal that will die with the pressure reduced to 18 cm. will endure a reduction to 6 cm. Before life is extinct, if oxygen is added. And the converse is also true that the evil of too great pressure comes mainly from the too large amount in that case of oxygen, dilution with nitrogen prolonging life. He remarks that workmen employed at great elevations would accordingly find benefit in an arrangement for supplying more oxygen; and those occupied in diving for pearls, etc., by a contrivance for supplying nitrogen.

SOLDERING IRON TO BRASS.—The receipt for an alloy has been lately published which was claimed to have the same expansion as iron or steel—the formula being: 3 parts tin, 7½ zinc and 39½ copper. *The Mechanic and Builder* thinks this may make a good solder for brass and iron, but that the claim of its expansion by heat being equal to that of iron or steel, is erroneous. As it is nothing but a brass containing some tin, like bronze, its expansion must be like that of all brass and bronze compounds, viz: about two-thirds more than that of iron; so that it expands almost double that of the latter by the same rise of temperature.

Binary Stars—Supposed Interesting Discovery.

The motions of the fixed stars hitherto observed are supposed to be elliptic, but Mr. Wilson, at a late meeting of the Royal Astronomical Society of London, read a paper wherein he stated that a careful examination of all the observations made upon the double star, Castor, have led to the remarkable conclusion that Castor and its "double" are moving in hyperbolas, that consequently their mutual relation are but temporary, and that each will at some time in the future move independently of the other.

Their relations to each other are similar to that of a certain class of comets which are sometimes brought within the temporary influence of our sun, but which after passing their perihelion, in our system, move off into space with a curve which will never admit of another return to our own system.

This supposition, if confirmed, will lead to a more close examination of the movements of other binary systems of stars; for it can hardly be considered that Castor can be the only exception to the general rule.

This alleged discovery suggests some most interesting and startling problems, and opens up to our contemplations an infinitely varied and complicated system of movements in space, by which suns as well as comets, even if they do not come into actual contact, may at least meet with perturbations, which must change not only their own orbits, but the orbits of their dependent planets as well.

It may also become a pertinent enquiry whether some of the double stars, whose apparent distance apart has seemed too great to justify the hypothesis of a physical connection may not afford still other difficulties of motion, not yet met with in our study of the stellar universe.

AN ARTIFICIAL MIRAGE.—At the late meeting of the British Association of Science, Professor Everett read a paper on "Mirage," in the course of which he described an interesting experiment devised by Prof. Maxwell, in which the beautiful effects of mirage were obtained by means of three liquids in a cubical vessel with plate glass sides six inches square, the lowest liquid being a saturated solution of alum, the highest pure water, and between them a thickness of about a quarter of an inch of Scotch whisky, containing enough sugar to make its specific gravity intermediate between those of the other two liquids. It is much more refractive than either of them. Triple images were obtained, with great distinctness, of all the objects in an extensive landscape, the middle image being inverted, and either elevated or depressed, according to the position of the eye. The range of triple vision extended to objects as far as 10 degs. from the horizontal direction, either above or below, and all three images were sufficiently distinct to show whether white blinds were up, down, or half-way down, in a row of houses at the distance of 700 yards.

THE LEAF A VICARIOUS ORGAN.—Some interesting experiments have lately been conducted by M. Cailliet, to determine the precise action of plant-leaves in the absorption of water in the liquid form. They have led him to the conclusion that leaves do not absorb water while the roots are fully supplied with moisture. But when the ground is too dry for the roots to obtain it, if water be brought in contact with the leaves, they will absorb it for the nourishment of the plant. The experimenter thus educes the fact that the action of the leaf is a vicarious and not a natural function.—*Pop. Science Monthly*

SUNLIGHT IN OCEAN DEPTHS.—An ingenious plan was devised by Professor Agassiz, on his late expedition, for determining how far the ocean depths were permeable to sunlight. A plate prepared for photographic purposes was inclosed in a case so contrived as to be covered by a revolving lid in the space of forty minutes. The apparatus was sunk to the required depth, and at the expiration of the period stated, drawn up and developed in the ordinary way. It is said that evidence has thus been obtained of the operation of the actinic rays at much greater depths than hitherto supposed possible.

WINTERGREEN OIL IN JAVA.—Wintergreen oil has been found in two species of plants on the Island of Java, the *gaultheria punctata* and *gaultheria cucurbita*, which grow luxuriantly near the tops of volcanoes. Quinic acid is also found in both of them. This is another instance of the occurrence of plants in the East corresponding to species found on the western coast of North America. The wintergreen so common with us is a great curiosity on the continent of Europe, and the oil made from it is highly prized as a scientific specimen as well as for its agreeable odor.

STEEL VS. IRON IN COLD WEATHER.—At the recent half-yearly meeting of the Grand Trunk Railway of Canada, in respect to the rails being exposed to severe cold for a great length of time, the President said that from 3,500 to 4,000 rails on that line break every winter! But he found comfort in the fact that, in about 110 miles of steel track, only eight or ten rails have broken. This would seem to indicate that Bessemer rails are suitable for cold climates.

The California State Fair.

Held at Sacramento Sept. 19th to 28th, 1872.

Exhibition of Stock.

Stock Display Extraordinary.

The display of stock at the Fair is the largest and finest exhibition ever before brought together on this coast, of horses, cattle, sheep, Angora goats and swine. Of the

Angora Goats and Sheep

The following are the exhibitors and the numbers exhibited:

Messrs. Landrum & Rodgers, of Watsonville, Cal., exhibited twenty-one pure breeds, and ten grades, 15-16 and 31-32 pure of the Angora goat; and nineteen pure bred Cotswolds sheep, and ten graded Cotswolds half breeds, and two pure breed Southdowns. Have in addition at their mountain ranch, Monterey Co., about 1,600 full bloods and grades, and at their home ranch near Watsonville, 110 pure breed Angora goats, eighty-five of which are just imported from the farm of Richard Peters, of Atlanta, Georgia.

Thomas and Shirland.

Auburn, Placer Co., Cal., has eleven head of pure blood Angora goats, seven bucks and four does on exhibition. On their home ranch at Anburn, Cal., they have eighty-one thoroughbred and about 1,200 grades. The eighty-one thoroughbreds above mentioned are of the original importation of A. Eutychides, Esq., a native of Angora, in Asia Minor.

Thomas Butterfield and Son

Of Hollister, Monterey Co., Cal., have on exhibition twenty-five pure breeds of the Angora goats, and eleven full bloods, 31-32 pure, and four grades. In addition they have on their home ranch and in other places, 120 pure and about 1,800 grades and full bloods, mostly three-fourths and above, also some 1,800 sheep of the Cotswold, Lincoln, Leicester, Texel and Southdown breeds and their crosses.

N. Gilmore, of El Dorado, El Dorado Co., Cal., exhibits nine pure bred Angora bucks and one full blood buck, 31-32 pure, which have been ranged during the past summer on the highest peaks back of Lake Tahoe, at an elevation of about 9,000 feet, with a band of seventy pure breeds, and about 1,000 grades running from one-half to full bloods.

Sheep.

T. and C. McConnell of Elk Grove, Sacramento County, exhibited 38 Spanish Merinos descended from the celebrated Infantando and Paular flocks. The original members of their flock were imported from Vermont in 1856.

They have at home 250 head of thoroughbreds and 9,000 grades. Have sheared from the whole flock an average fleece of 7½ pounds. The sheep grew larger here than in Vermont for the climate is such that they keep on growing in winter as well as in summer. These gentlemen are trying to secure length of staple and freedom from wrinkles and gum. King William, who once took a sweepstake at Sacramento, was from their flock and sheared 30 pounds of wool of 12 months' growth.

Thos. Cotter of Elk Grove shows 28 head of Spanish Merinos from a flock of 130 thoroughbreds. He has imported 95 head from Vermont which he selected from 9 of the best flocks in the State. He looks for short-legged animals with wool covering as much of the body as possible. He has to shear some of them around the eyes quite often to enable them to see. He wants long wool with a light colored yolk. He don't want his sheep too wrinkly but likes to see nice folds about the neck.

Green Mountain sheared 24 pounds of 12 months' growth.

Golden Fleece sheared, 20 pounds of 12 months' growth.

The last animal was from the flock of Rollin Lane, Middleburg, Vermont. Mr. Cotter sold to Mr. Baker, of San Joaquin Valley, all the ewes of the last importation and his ewe lambs at \$15 each. This little bill for sheep footed up \$7,500.

L. J. Orcutt, of Cummington, Mass., shows 14 Spanish Merinos from a flock of 95 in charge of J. H. Glide, Sacramento. They are in the business of importing merinoes from Vermont. August 1st, they came out with 340 head. The sheep were imported from the flocks of Wm. R. Sanford, G. Cutting, John T. Ritch, Dan. Buell and Bro. and Stickney Dean, from Addison Co., Vt.

Cotswolds.

W. T. Wilson, of Oak Grove, shows 4 Cotswolds which are left from a flock of 105 which he has imported from England. From England to New York the charges were £3 each, and from New York here about \$13 each by the car load. One of the bucks shown has weighed

360 pounds. The four will average about 325 pounds each. We hope to have an illustration and more particulars of these sheep in about a month.

Mr. Wilson shows a very fine pen of Spanish Merino ewes from the flock of his wife who is the widow of the late Thaddeus McConnell, who made the first importations of Spanish merinos into the country.

Mr. McCoull hred for compact bodies and length and amount of staple. He recognized the fact that neither wrinkles or oil make clothes or mutton.

Graded Sheep.

H. A. Rawson of Red Bluff, exhibited a flock of 35 grades of ¼ merinos and ¾ Cotswold blood. He claims for his wool the least percentage of waste in scouring. He is breeding for weight and length of fleece and freedom from foreign matter. The wool buyers of Red Bluff turn a cold shoulder upon oily wool.

Severance & Peet, are a firm established for permanent importation and breeding of Spanish Merino sheep. They propose to have as good sheep as money can buy and keep steadily on, even if the best sheep go down to \$5 per head. Mr. Severance is well known in connection with the diamond drill, and Mr. Peet is the son of one of the most noted sheep breeders in Vermont. They have lately landed 366 head in California, of which Mr. T. A. Wilson, of Stockton, "got away" 160 sheep at \$11,400. There are two bucks on the way valued at \$1,000 each. There are 24 sheep on exhibition here. Hero sheared a fleece of 11 months' growth weighing 24½ lbs. Several others will shear about as much. Eureka has been left at Stockton. The reputation of these men and the permanent character of their establishment, will insure confidence in their importations.

Smith & Overhiser, Grayson, Stanislaus Co., show 28 head of Spanish Merinos and 2 French Merinos. These were bred in California, from flock formerly owned by J. D. Patterson. They are breeding for size, bone, constitution and weight of fleece. Those which show the darkest color have been kept from the dust. The alkali cuts the grease and makes the wool lighter and more profitable for the buyer. They have 3,000 thoroughbred sheep, 200 of them French Merinos. They think the Spanish Merinos the best of all breeds for large flocks and poor pastures.

The French Merino is preferable on account of size and the staple has less oil, is shorter, more dense, and not quite as fine as the Spanish. They have sold about 600 thoroughbreds at prices generally ranging from \$40 to \$100, but sells a few at from \$150 to \$200.

Challenge is too good a sheep to sell for \$500, for his fleece of seventeen months' growth is estimated at forty pounds.

Silver Mine was sold to C. C. Baker, of Stanislaus Co., but his fleece is on exhibition at the Pavilion. It was of twelve months growth and weighed thirty-eight pounds.

R. A. Branton, Dixon Station, Solano Co., has three French Merino sheep on exhibition. He has thirty thoroughbreds and 400 grades at home. He has been engaged for three years in breeding on his own account, and for ten years with John D. Patterson. His stock is from Bingham's importation from Vermont. Mr. Bingham is a partner of the firm of Bingham & Brannon. Mr. Branton has sold this year thirty-five bucks at prices ranging from \$50 to \$100 each. He is breeding for size of carcass and quality of wool, and wants to get rid of wrinkles. His sheep weigh 160 to 180 pounds each, and the clip of his thoroughbred flock will average 16 pounds each.

Mr. L. Harden, Millville, Shasta Co., shows a fine Spanish Merino, Lord Silvery Fleece, imported from the flock of H. J. Starr, Carey, Ohio. On May 5th, 1872, Mr. Harden brought in seventy head of sheep. He has eight or ten bucks of this importation at \$75 to \$150. His sheep are very compact and short legged. Lord Silvery Fleece has a fleece of sixteen months' growth estimated at forty pounds, and is not for sale at \$1,000.

Robert Beck, of Sacramento, exhibited a flock of Merino sheep raised by Mr. William Chmberlain, Red Hook, Dutchess Co., New York.

This flock is descended from the full blood Merino sheep of Mr. Ferdinand Fischer, Wirschenblatt, in Silesia, Prussia, who imported them in 1811 from Spain, having carefully selected them from the best flock there. They have been bred from that time to the present in the most scientific manner, until they have gained the reputation of being the Electoral flock.

In 1851, 1853, 1854, 1856, 1867 and 1868, 166 sheep were carefully selected from the Fisher flock and 125 to cross the blood properly from the flock of Mr. F. Wiedehack of Beitzsch, Count A. Fries, Cernahora, who are descendants of the superior breed imported by the Empress Maria Theresa and the Emperor Joseph II., in 1775 and 1782. The qualities most sought for are fine fleeces covering every part of the sheep with an even quality of wool and good strong constitutions. The rams shear from 12 to 20 pounds unwashed wool, and ewes from 8 to 14 pounds.

These sheep have taken the first premiums in fine wool classes at the State and National Fairs every year since 1854. Were not entered for premium here.

The Milkman's Herd.

Robert Aaburner of 12 Mile Farm, School House station, San Mateo county, exhibited 3 thoroughbred and 6 grades.

Water Prince, 4 years old, roan, weight 2,600, growth 8 feet 2 inches, Vol. X No. 13, 114, from

imported Water Prince No. 13, 112 and imported Pocahontas Am. Herd Book, Vol. 111, page 602.

Crown Prince, 6 months old, roan, from Water Prince and Pocahontas. Calf by Mark Antony, No. 20,393 and Buttercup by Water Prince. Mr. Ashburner has been breeding Durhams for three years. He cares little for color but seeks general symmetry and milking qualities. He sells milk to a dealer in San Francisco and has a herd of cows that will average three gallons of milk per day. He gets for his thoroughbred calves from \$150 to \$200 and for grades from high grade cows, \$50 each. He grows a large amount of mangel wurzels for his cows and gets 40 to 60 tons per acre. He thinks 3 or 4 tons of beets equal to a ton of hay. He feeds them in connection with other food; prefers not to feed too many. He uses large quantities of oil cake meal.

Cattle.

J. H. Chambers, St. John, Colusa Co., exhibited twelve head of thoroughbred Durhams and two grades. He is breeding for general symmetry, breadth of hips, fullness over heart, large arm, small legs below knee, straight hind-legs, square rump and deep flank. Don't care about seeing a fine tail; this he finds quite as often in Spanish cattle as in any other. The herd was originally owned by R. J. Walsh, of Colusa Co.

Devon Cattle.

J. R. Rose, of Lakeville, Sonoma Co., exhibits a herd of twelve Devons which are all descended from animals recorded in Devon Herd Book, but notice of new issue did not reach Mr. Rose in time to get in his report of stock. This was the only large herd of Devons exhibited. In the State there are two herds at San José, one at Bloomfield, and another belonging to Mr. Williamson, of Sherman Island. We shall be glad to hear of other herds. For this breed is claimed adaptation to rough country, and scanty feed; a superior quality of beef and a great amount in proportion to feed consumed; excellent milking qualities, and they are said to be the best of all working cattle. As points indicating milking qualities, Mr. Rose looks out for the hair, which turns the opposite way from the rest of the coat in a position back of the udder. The wider this streak of hair the better. He also looks for dark yellow skin, large folds of loose skin back of the udder, and large, well-shaped teats.

He exhibits Bloomfield, 7 yrs. old, weight, 2,180. This is an animal of remarkable points, and Mr. Rose thinks if he had been owned in a country where Devons were known and appreciated, he would have been famous for the next fifty years.

Frank Quarterly, four years old, took the sweepstakes among the Devons.

Phil. Sheridan, three years old, Gen. Sherman and Sonoma, each two years old, and Victor, one year old, comprise the male members of the herd.

Curly, the mother of the herd, is ten years old, and shows excellent milking qualities.

Maud, four years old, Curly (third), Nellie, one year old, and two calves, not named, comprise the herd.

Swine—Berkshires.

R. S. Thompson, of Napa, shows thirteen of this favorite breed. They are much esteemed here for their strength of bone, thrift of growth and for the predominance of red meat in the carcass, which is greater than in any other save the famous Westphalia. In addition to this, their thick coat of dark hair prevents scurf or sunburn. They can be readily fattened at any age, and keep on growing till two or three years old. His original stock has been imported from Adam Rankin, Monmouth, Warren Co., Ill. Mr. Rankin imports from England and Canada, and is said to have paid \$1,000 for a single animal. The herd is as follows: One pair two years and five months old, from Mr. Rankin's herd. The male is not very fat, but weighs 603 lbs. They have produced 15 pigs.

Dexter is 19 months old, in thin condition, weighs, 442.

Napa is 15 months old.

Young Comet is very fine indeed. He weighed 140 lbs. at four months old, and is too good a pig to sell for \$200.

Belle is from imported parents, 19 months old.

He has a lot of pigs at home that are six months old, and weigh 180 to 215 lbs. each. He generally sells small pigs at \$40 per pair or \$25 each. We have it from other authority that there are only two herds of thoroughbred Berkshires in the State.

R. M. Sparks, of Marysville, exhibits Loretto Bettie and six Berkshire pigs. The old pair were imported from Bnsh & Brothers, Winchester, Ky. He has imported 23. He gets \$25 each for pigs. Can make Berkshire hogs weigh 350 lbs. at 12 months old.

Carmon & Staples, Snisun, Solano Co., show five pens, containing 19 head of Poland and China and one Berkshire. They imported four head last fall from Wm. Stevenson, of Virginia, Cass Co., Ill. This breed is very highly esteemed in Illinois, because they grow to greater size in less time on the same feed than any other breed. There have only been two or three other importations of this breed. At 18 months old they weigh from 300 to 500, according to the care they have had, and at two years old it is nothing uncommon to find them weighing 700 to 800 lbs.

James Moore, of Freeport, Sacramento Co., exhibits the Essex sow, Eliza, and 11 half-blood Berkshire pigs. He thinks that this cross makes a harder hog than either Essex or Berkshire. He gets the fine bone, easy-keeping

qualities and early maturity of the Essex and the size and strength of constitution of the Berkshire. He sells pigs at \$25 each.

Peter Burns, of Sacramento, shows seven Essex pigs, bred from the importations of A. D. Patterson, Alameda, and R. J. Walsh, Colusa Co. He sells full-blooded pigs at \$20 per pair, when 7 to 10 weeks old. He claims for the Essex fineness of bone, excellence of meat and extra weight in proportion to feed.

Poultry.

Mrs. Burns made almost the only exhibition of poultry, consisting of two coops of ducks of the English Magpie and White Australian varieties, one coop White-Breasted American Geese, four coops of chickens, Light Brahmas, Jersey Blues, White Dorkings and Cochins Chinas.

Grapes.

O. B. Shaw, of Sonoma, exhibits an excellent specimen of genuine Malaga Raisin Grapes, which grew on black gravelly loam at Sonoma. The grape is very long, of a light green color, taking a yellowish tinge, sometimes verging toward brown on the side exposed to the sun. The skin is very thin, the pulp sweet and not very fleshy. The bunches are long and very loose. The vine is a vigorous grower and a great bearer, but liable to be killed down by frost.

St. Croix,

Said to be an excellent wine grape, very showy and of fine flavor for a table grape. The vine, leaf and cluster strongly resemble the Malaga, but cluster is more compact and pulp less fleshy.

Chili Rose,

Is an extremely showy variety and of a very fair quality. The berry is somewhat darker than the Tokay, smaller and nearly round, and with a much more compact cluster. When fully ripe, the grapes drop off easily and are much injured by the wind. The vine grows very thrifty and is an average bearer. This variety might be very profitably grown as a table fruit where well protected from wind and frost.

Vegetables.

Among the wonders in this line was a pumpkin only six weeks old from the seed and weighing 112 lbs. They are "some pumpkins" on the San Joaquin this year. A lot of cabbages grown from seed this year averaged 43 lbs. in weight and were said to be of very fine quality.

H. H. Burwell, of Amador Co., showed a lot of Giant Bocca Onions, averaging 6 inches through, and they were said to be no more than an average of a lot of 30 tons.

John Studens' Mexican Melons were long, solid and fine. This variety bears the best reputation of any in the Sacramento Market.

John H. Wolf, of Brighton, made a fine show of melons, squashes, pumpkins, corn, etc. He raises as many melons on two acres as he can handle and ship from the middle of July till frost comes. Melons bring in the Sacramento market, from 75c to \$1.50 per dozen for watermelons and 50 cts. per dozen for canteloups.

At this rate he considers canteloups more profitable. He can ordinarily get \$150 worth of canteloups per acre at 50 cts. per dozen. Among potatoes he prefers Early Rose and Late Rose, for this locality. Only early potatoes can be grown to profit about Sacramento, as dealers prefer Bodega potatoes as soon as they can get them.

Articles Exhibited.

The following is a partial list of articles placed on exhibition, many of which are important and would be reported more fully but for want of space and the liability of taxing the time of our readers with too long a report. Other things concerning which we have gathered notes, will be mentioned hereafter.

Implements and Machinery.

Mattison & Williamson, Stockton—Hay forks.
Baker & Hamilton, S. F.—Two Eureka gang-plows, manufactured by the Sweepstake Plow Company, and one Marysville Chief gang-plow.
R. Jones, agent for Keller & Co., Sac.—Two farm wagons for general purposes.
Treadwell & Co., S. F.—Display of agricultural machinery.
Baker & Hamilton, S. F. and Sac.—An Eagle straw-cutter.
Charles Herriman, Sac.—One double rotary harrow.
Baker & Hamilton, Sac.—One iron harrow.
J. C. Bowden, Farmington, San Joaquin county—A Separator.
W. H. Keep, Stockton—Three sizes of the Globe pump.
Baker & Hamilton, S. F. and Sac.—One deep-tiller plow.
E. F. Aiken, Sac.—A one-horse corn cultivator.
Waterhouse & Lester, S. F. and Sac.—Dole's tenoning machine and morticing machine.
M. S. Bowditch, S. F.—Atwood & Co.'s horse-power, Little Giant (removed to the Park).
Fish Brothers & Huggins, Sac.—Threshing machine.
W. B. Ready, Sac.—Clipper mowing machine.
M. S. Bowditch, S. F.—Excelsior wind-mill, self-regulating and adjustable, (removed to Park).
E. L. Brooks, Bodega, Sonoma county—Model of a farm gate.
E. B. Tenney, Ripon, Kansas—Excelsior washing machine.
T. C. Churchman, Sac.—One sweep horse power.
Baker & Hamilton, S. F.—One tubular harrow.
Mattison & Williamson, Stockton—One tubular harrow.
M. R. Rose, Sac.—Self regulating wind-mill.
B. F. McCoombs, Eureka, Humboldt Co.—Freeman's washing machine.
M. R. Rose, Sac.—Three deep-well force pumps (two at the Hall and one at the Park).
Richard Parker, Sac.—Blakesley & Williams' patent steam jet-pump or apparatus for raising water for irrigating purposes.
Mattison & Williamson, Stockton—Three plows.
Treadwell & Co., S. F.—Hoadley's portable steam engine.
F. B. Stevens, Sac.—Hunter's patent pruning knives.
W. H. McBurney, Sac.—Hay press.
M. Barthel, Antioch—Farm gate.
M. S. Bowditch, S. F.—One Challenge feed mill.

Charles E. Johnson, S. F.—A portable fence.
E. M. Tyler, Dixon, Solano Co.—Patent flytrap.
John A. Ball, Grass Valley—Elevator or water lifter by hand power.
J. N. Hanson, Stockton—"Irish Champion" gang-plow.
O. J. Backus, S. F.—Hyde's combined water wheel and sewing machine.
Baker & Hamilton, Sac.—Pitt's California thresher, hay rakes, etc.
C. H. Hubbsrd, Sac.—Hay press.
J. L. F. Warren, S. F.—True's potato planter and Jebbs' patent churn.
J. M. Betts & Co., Sac.—Gorham's broadcast seeder and cultivator combined.
A. McCall—A lot of gang-plows.
Thomas Orchard, Sac.—Two well augers and one post auger.
R. Jones, agent for Keller & Co., Sac.—One Excelsior mowing machine.
Baker & Hamilton, S. F. and Sac.—One two-horse corn cultivator.

Machinery, Manufactures and Products.

Treadwell & Co., S. F.—Spark arrester for threshing engines.
John Quigley, Alvarado—Collection of various kinds of seat for dairy purposes.
W. H. Keep, Stockton—Three portable forges and blowers.
E. B. Tenney, Ripon, Kansas—Window sash balance.
William Blake, S. F.—Clothes renovator and simple dyes.
J. Campbell, Sac.—One wire mattress.
D. C. Brown, Sac. (for Peck & Brown)—Rock River building paper.
Laukoter Brothers, Sac.—Five sets of Stock's patent pump valves.
Jute Manufacturing Co., Brooklyn, Alameda Co.—Display of raw and manufactured jute, ten potato sacks, ten grain sacks, five wool sacks, two skeins of raw jute, one package of twine, four strands yarn, bolts of potato and grain gunny cloth.
James Pearson, Sac.—Parson's car couplings.
Nichols, Falvey & Co., Sac.—One bee hive.
Reynolds & Fuller, Sac.—Combined wash-boiler and machine.

R. S. Thompson, Napa—Display of woodenware.
Kimbball & Hebard, S. F.—Patent improved window extension screen and mosquito bar.
Bowen Brothers, S. F.—Saleratus, yeast powders and pure ground spices.
N. Clark & Co., Sac. (Pacific Pottery)—Sewer pipe and fire-brick.
I. J. H. Meyer, S. F.—A carondelet table.
John J. Cies, Sac.—Case of home-made cutlery.
John T. Lollner, Napa City—Mahogany cane made by William Toppin entirely with a jack-knife, one cane made from wood taken from the Kearsarge.
George Thielston, S. F.—Chrono lithograph.
Huntington, Hopkins & Co., Sac.—Weston's patent differential pulley blocks and a locomotive headlight.
Warren Wagon, Sac.—Stovepipe damper.
Cooley & Green, S. F.—Crandall's patent spring beds.
Jesse Healy, S. F.—Miscellaneous assortment of Averill's chemical paint.

Geo. G. W. Morgan, Sac.—Dressed stone, manufactured by the Union Stone Company of Boeton, Mass.; flooring and roofing tile of the same; also a general collection of stoneware.
John Quigley, Alvarado, Alameda Co.—Specimens of salt manufactured at the Alvarado Salt Works; sack of table salt.

John Breuner, Sac.—A large and elaborate display of furniture of all kinds.
E. Eisenburg & Bros., S. F.—One case of cigare of California manufacture.
Wick & Clark, Sac.—General assortment of undertakers' material, caskets, etc.
E. A. Wilcox, Sac.—Crystalline toilet articles for the hair.

Supple Needle Manufacturing Co., S. F.—Display of needles for sewing machines.
D. A. Todd, Sac.—Roller skates.
Huntington, Hopkins & Co., Sac.—Wire goods, door trimmings, window trimmings, blind or shutter trimmings, axes, locks, general hardware, iron and steel, mechanics' tools, table cutlery, pocket cutlery, pruning shears and knives, circular saws, mill saws, hand-saws, anti-friction metal, shot, kitchen utensils and general tinware.

Lock & Montague, S. F.—French cooking range, Eureka portable range, warming furnace, farmers' caldron or steamer, warming furnace or bath-house heater, laundry stove.
A. T. Sherwood, Sac.—Four spring beds.
H. Krebs, Sac.—Rustic window shades and gilt frames.

Nichols, Falvey & Co., Sac.—Lot of willow ware and brooms.
C. H. Krebs, Sac.—Cans of copal varnish from the San Francisco Pioneer Varnish Works; boiled linseed oil, from the Pacific Lead Works, San Francisco; white lead from the Alta Works; five gallons of castor oil, from Briggs Bros., Marysville; three samples of California paints; three pounds of glue, from the Pioneer Glue Factory of San Francisco; California turpentine from Corder's distillery, Marysville.

S. Look, S. F.—Spring bed.
H. C. Kirk & Co., Sac.—One barrel of glue.
Carlton Newman, S. F.—Glassware, bottle glass, green glass bottles, tincture bottles and vials, demijohns and carboys.
W. M. Haddon, Sac.—Two bales of hops.
J. S. Stoddard & Brother, Wheatland—One sack of flour.

P. Hart, Sacramento County Hospital farm—Three-fourths bushel of onions, one bushel of potatoes and box of peppers.
J. S. Harbison, Sac.—One patent beehive.
E. Groats, Napa—Patent churn of seven sizes.
Leaman's automatic car coupling, invented in Dayton, Ohio.

George G. W. Morgan, Sac.—Design for a canal and narrow-gauge railroad.
Bachman & Newburg, Sac.—Three bales of hops.
San Francisco Wood Preserving Co., S. F.—One piece of worm-eaten wood, piece of worm-eaten plank, piece of worm-eaten buoy, six cases of disinfectant, one case of elastic black varnish, and one piece of worm-eaten pile.

Clark & Harbison, San Diego—Ten pounds of honey.
J. S. Harbison, Sac.—Ten pounds of honey.
Mrs. J. P. Odbert, Sac.—Varieties of preserved fruits, canned fruits, jellies, pickles and catsup.
John Bidwell, Chico—One sack of flour and one sack of Chile wheat.

Redington & Williams, Sac.—One sack of bearded wheat.
Keefer Mills, Butte Co.—One sack of flour.
R. Haskins, Dutch Flat, Placer Co.—"Little Giant" hydraulic pipes and universal joints for hydraulic mining.
William Van Wert, Chico, Butte Co.—One box wheat-heads and a sack of wheat of the "Pride of Butte" variety.

E. J. Sparks, Lincoln—Samples of club-head wheat.

Harness.

J. T. Stoll, Sac.—Phaeton double carriage harness, single Imperial rubber harness, Mexican saddles, with large display of whips and bits.
J. D. Lehman, Stockton—Saddle-trees.
J. T. Stoll, Sac.—Express wagon harness and light double farm harness.

Vegetables.

William Bihler, S. F.—Cabbages and sugar beets.
Samuel Storms, Sac.—Ears of popcorn.
Captain Lytleton, Sac.—A marrowfat pumpkin of last year's growth.
Jacob Heber, Sac.—Half a peck of white onions and half a bushel of sweet potatoes.

John Smith, Sac.—Tomatoes and sugar beets.
J. C. Nickeson, Lincoln, Placer Co.—Watermelons and muskmelons.
J. R. Johnston, Sac.—Collection of vegetables.
John H. Wolfe, Sac.—Peruvian watermelons, mountain sweet watermelons, yellow flesh watermelons, white flesh watermelons, ice cream melons, marrowfat, custard and Valparaiso squashes, Yankee pumpkins, tomatoes, green sweet corn and white corn.
N. W. Brooks, Sac.—Two large squashes.
D. D. Bernard, Sac.—Collection of vegetables.
J. H. Wolfe, Sac.—Tomatoes and Lima beans.
G. E. Wolfe, Sac.—Half a peck of castor beans.
Robert Williamson, Sac.—Collection of table vegetables and castor beans.
Thomas O'Brien, Rosedale, Sac.—Flowering plants in bloom; plants with ornamental foliage; display of fuchsias, cut flowers and bouquets.
Mrs. H. W. Higgins, Sac.—Domestic wheat bread.
Mrs. Wolfe, Sac.—Wheat, corn and brown bread and soda biscuits.
E. A. Wilcox, Sac.—Crystalline hair toilet articles.
J. R. Johnston, Sac.—Three stalks of tobacco.
E. F. Aiken, Sac.—Field peas, garden peas and varieties of other peas.
Peter Burns, Sac.—Yellow corn and red and white potatoes.

C. W. Adams, Sac.—Lima beans.
J. H. Carrington, Florin, Sac. Co.—Domestic wheat bread, made by his daughter nine years of age.
John Studerous, Sac. Co.—Display of watermelons.
A. M. Adams, Sac.—Display of locks.
P. Fisher, Brighton—Two bushels of Chile wheat.
C. W. Adams, Sac.—Half-a-peck of Lima beans.
Mrs. S. M. Hoover, Elk Grove—Kentucky cucumber for exhibition, and ten rolls of butter, twenty pounds.
Mrs. Cronkite, Sac.—Domestic wheat bread, brown bread, domestic biscuit.
Mrs. E. F. Aiken, Glen Garden—Ten pounds of butter in rolls, soda biscuit, domestic corn, brown and wheat bread.
P. Hart of the County Hospital grounds, makes a fine show of vegetables. Among these are noticeable a lot of yellow Danvers onions, a splendid lot of red peppers and a sack of Neshannock potatoes.

Fruit Other Than Grapes.

John H. Wolfe, Brighton—Apples, pears and peaches.
Thomas O'Brien, Rosedale—Display of pears.
T. B. Flint, Sac.—An array of pears.
Master George H. White, Sac.—Apples and other kinds of fruit.
James Holland, Sac.—Apples, pears and quinces.
W. L. Willis, Elk Grove—Quinces and figs.
H. T. Hutchinson, Marysville—Apples, quinces, pears, plums and figs.
James Crozier, Stockton—Apples and quinces.
W. R. Strong, Sac.—New Zealand flax in different stages.
J. R. Nickeson, Lincoln—Apples, pears and quinces.
A. S. Greenlaw, Sac.—Pomegranates.
James Holland, Sac.—Plums and figs.
Mrs. H. Cronkite, Sac.—Varieties of jellies and catsup.
Miss Tinnie H. Smith, Sac.—Boxes of dried apples pears and plums.
Mrs. N. Clark, Sac.—Jellies and preserves.
Mrs. E. F. Aiken, Glen Garden—Dried apples, peaches, pears, nectarines, purple egg plums, currants, tomatoes, raspberries, blackberries, blueberries, apricots, etc.

J. B. Nickerson, Lincoln—Fifty pounds of dried apples.
L. A. Gould, Santa Clara—Twenty boxes of dried pears, peaches, plums, prunes, apples, strawberries, peas, cherries, gumbo, ourrants, blackberries and tomatoes.
B. N. Bugbey, Folsom—Japanese chestnuts in the burl.
Robert Williamson, Sac.—Boxes of dried apples, peaches and plums, half a peck of Languedoc almonds and model for a fruit-drylay house.
R. L. Bampton, Washington—Yolo Co.—Variety of apples, and nine varieties of pears.
Robert Williamson, Sac.—White Smyrna figs (second crop), three varieties of seedling pears.
P. H. Murphy, Brighton—Four varieties of apples; orange quinces and Bartlett pears.
Ira S. Bamber, Placerville—Dried apple, pears, peaches, plums, nectarines, figs, prunes, blackberries, strawberries, gooseberries, elderberries, raspberries, currants and cherries.
A. S. Greenlaw, Sac.—Varieties of apple and pears.
S. Bamber, Placerville—Varieties of apples, pears, peaches, plums and nectarines.

Vine Growers' Entries.

B. N. Bugbey, Folsom, Grape brandy of the vintages of '67, '68 and '69; Fahir Zagos brandy of '70; Muscatel brandy of '70 and '71.
B. N. Bugbey, Folsom, Zinfandel, Reisling and Burgundy dry wines of '71.

Eberhardt & Lachman, San Francisco, grape brandy of the vintage of 1870 and 1871. White wine of 1869, white and sweet Catawba wines of 1870, white and Catawba wines of 1871. Dry Muscatel of 1871 and dry Catawba of 1870. California wine cocktail bitters, California sparkling Muscat of 1871, California wine bitters, old hock, Malaga wine, port wine, Madeira wine, of 1869; sweet Muscatel, port, claret, red Zinfandel, Mount Vineyard, angelica and sherry of 1870; Muscatel, port, Mount Vineyard and angelica of 1871.

George West, Stockton, Zinfandel dry red wine of the vintages of 1870 and 1871; white dry of 1871. Zinfandel sweet red and white wines of 1871. Sherry of 1866, 1870 and 1871; Port of 1867 and 1870, and Port No. 1 and 2 of 1871.

Schell, Krause & Co., Knight's Ferry, Glen Clara brandy, vintage of 1868 and 1871. Schell, Krause & Co., Knight's Ferry, Sherry of 1868; Port and Madeira of 1869; Hock of 1871.

J. R. Snyder, Sonoma, El Cereito brandy of 1865 and 1866, Reisling Zinfandel, Mission, Zante White and other wines.

Schell, Krause & Co., Knight's Ferry, Glen Clara red wine of 1869 and Glen Clara wines Nos. 1 and 2 of 1871.

Lewis Adler, Sonoma, white wine, vintage of 1866.

O. W. Craig, Sonoma, Hock and Malaga of 1867; sweet Muscatel of 1871, grape brandy of 1872.

Orleans Hills Vinicultural Association, Sac.; Reisling wine of '67, '68, '69 and '71; Orleans of '69, '70 and '71; Muscatel of '70 and '71; Catawba of '69, '70 and '71; White wine of '69, '70 and '71; Zinfandel of '72. Port of 1869, 1870 and 1871.

Toaky wine of 1869, 1870 and 1871.

B. N. Bugbey, Folsom, California Port of 1869, 1870 and 1871; Chambertin of 1871; Orleans Sweet wine of 1871.

J. L. Snyder, Sonoma, dry native Muscatel and El Cerito of 1865. Zinfandel and Native wines.

J. W. Stoughtenberg, white wine of 1870 and red and white wines of 1871.

J. Rutter, Florin, white dry wines of 1870 and 1871; white sweet wine of 1871.

Newhall & Culbertson, Tuolumne county, Sherry of 1860. White wine of 1868 and 1870, with sample of grapes.

Alfred V. Lommott, Sonoma, Sherry of 1867.
J. H. Carrington, Florin, Sacramento Co., grapes of the following varieties: White Muscat of Alexandria, Cannon Hall Muscat, flame-colored Tokay, Rose of Peru, Black Hamburg, Black July, Black Prince, Blue Malvoisie, Zante Currant, White Gneiss, California Mission, Red Rose, White Malaga, Royal Muscadine, White Chasselas, Black Morocco, Fontainebleau, Black St. Peter, Frankindale, Isabella and Catawba.

M. Keller, Los Angeles, brandies of 1870 and 1871; white wines of the vintages of 1867, 1868, 1869, 1870 and 1871; Port Wine, Sherry, Angelica and El Dorado of the vintages ranging from 1868 to 1872.

Robt. Chalmers, Coloma, Catawba Wine Bitters, Native Wine Bitters and Port Wine Bitters (no date); Blackberry cordial (no date); Green Hungarian of 1870 and 1871; Catawba and Native wine mixed, Isabella, Angelica, Burgundy, Muscat and Port of 1871; Reisling of 1870.

White Muscat, Mission and Rose de Peru of 1871.

Robert Chalmers, Coloma, Muscat wine of 1871; Native White wine of 1869 and 1871.

Grambart & Wells, Drytown, Amador Co., White wine of the vintage of 1866.

C. Detten, Stockton, Dry White wine of 1870. Coloma, Grape brandy, apple brandy and peach brandy of 1870; grape brandy and cherry brandy of 1871.

J. R. Nickeson, Lincoln, Placer county—Two gallons of grape syrup; grape brandy of 1870 and 1871; White Muscat brandy of 1870 and 1871; pear brandy of 1871; apple brandy 1870 and 1871; peach brandy of 1871; black-berry brandy of 1872; Claret of 1868; Melonia, Catawba, Rose de Peru, Zinfandel and Red Burgundy of 1870; Los Angeles—Los Angeles and White Nice of the vintage of 1868; Los Angeles and Madeira of 1869; White Malaga, White St. Peter, Los Angeles, White Muscat and White Catawba of 1870; Sweet Catawba, White Tremander, Los Angeles, Muscat and Malaga, Derish Gray, Muscatel and Sweet Red wine of 1871; Sherry and Port of 1869; Sherry, Port, Angelica and Claret of 1870; Port and Angelica, of 1871.

Grapes.

J. R. Nickeson, Lincoln—One box of Malaga raisins of 1871 and one box of the same of 1872.

J. R. Nickson, Lincoln, Placer county—White Spencer, Portugal Muscat, White Dutch, Pride of Foothills, White Morocco, White Portuguese, Green Tokay, Delaware, White Cicerian, Large Damascus, Diana, White St. Peters Hamburg, Catawba, Black Morocco, Blue Martelle, Yellow Province, Bishop, Black Frontignon, Black Portuguese, White Napoleon, Black Cluster, Black Zinfandel, Purple Chasselas, White Syrian, Black Malvoisie, Cleffner, White Tomalis, Black Chile, 18 varieties of seedlings, Reine de Nice, Golden Hamburg, White Chasselas, White Muscadine, Rose Chasselas, Black Burgundy, Black Lestra, French wine, Black Muscadine, White Tokay, White Cynthia, Medoc from Bordeaux, White Olney, Green Portuguese, Flame-colored Tokay, Rebecca, Red Florence, White Herman, Duree, French Reisling, Purple Frontignon, Dilbrat, Pedro Ximenes, Tokay Los Angeles, S. S. Friend, White Malaga, White Chile, Red St. Peter, Orleans, Red Tremenia, Black July, Black Prince, White Selina, Tokay Muscat, Black Muscadine, Golden Chasselas, Thompson Black, Purple Burgundy, Red Burgundy, Yellow Muscadine, White Malvoisie, Grisloy Frontignon, White Candaline, Early Madeleine, Black Muscat, Black Peino, Black Sicily, Frollinger Japanese, Pink Malaga, Seedler Sultana, White Palestine, White Morocco, Black Malaga, White Muscatel, Early White, Victoria Hamburg, White Sweetwater, Black Hamburg, Red Mountain, Black Lombardy, White Cantiline, Blue Martelle, Clinton, Deisch Gray, White Dutch Sweetwater, Melvina, White Dundertown, Florence, Purple Damascus, Clino, Black Giant, Deacon Saberrlin, White Tremenia, Reisling, Isabel, Early Round Black, Miller's Burgundy, Lincoln, Verdelho, Pride of Paris, White Hamburg, White Rance, Black Portugal, Clustered Cerian, Black Malaga and Rose of Peru grapes.

J. Rutter, Florin, Blue Malvoisie, White Muscat, Mission, Black Hamburg, Flame-colored Tokay, Frankindale, Mountain Red, Dutch Sweetwater, Catawba, White Gneiss, Black St. Peters and Lombardy grapes.

Monson Yerxa, Sac., California Muscat, Black Morocco, White Syrian, Red Rose of Peru, and Red Tokay grapes.

W. L. Willis, Elk Grove, White Muscat of Alexandria grapes.

H. T. Hutchinson, Marysville, ninety-six varieties of grapes.

Ira S. Bamber, Folsom, Muscat of Alexandria, Cannon Hall Muscat, flame-colored Tokay, Black Tokay, Fahir Zagos, Black Prince, Black Hamburg, Rose de Peru, Black Morocco, Isabella, Mission, Red Mountain, White Malaga, Black Malaga, White Muscadine, Red Muscadine, Royal Muscadine, White St. Peter, Catawba and green Hungarian grapes.

P. H. Murphy (not a member) Brighton—Rose de Peru, Barbara Rose, Red Traingner, Black Malaga, Red Mountain, Flame-colored Tokay, Blue Malvoisie, White Gneiss, White Muscat and Alexandria, Cannon Hall Muscat, Black Prince, Black Hamburg, White Tokay, White Syrian and Mission grapes.

Robert Chalmers, Coloma—Green Hungarian, Black Burgundy, Red Mountain, Black Prince, Isabella Native, Black Hamburg, Rose de Peru, White Muscat of Alexandria, Catawba, White St. Peter and Flame-colored Tokay grapes.

R. B. Bowers, Woodland—Malaga Muscatelle raisins.

E. F. Aiken, Glen Gardens—White Muscat of Alexandria raisins.

Geo. H. Kerr Elk Grove—White Muscat of Alexandria, Cannon Hall Muscat, Flame-colored Tokay, Blue Malvoisie and Rose de Peru grapes.

R. B. Bowers, Woodland, Malaga Muscatelle grapes.

G. W. Thelkel, Placer county, Flame-colored Tokay Grapes.

Wine Fixtures.

Johnson Brandy and Wine Manufacturing Company, Sacramento—Cognac of '71, and also samples of acetic ether and fusil and grape oils, extracted by the Johnson still.

J. Ocesner, Sacramento—One redwood wine cask, capacity, 3,500 gallons; one oak pipe, 160 gallons; one oak keg, 10 gallons; one keg, 5 gallons, one oak brandy eighth, 22 gallons.

George Johnson, Sac., improved still with drawings and model.

George Johnson, Sac., and W. F. Johnson, Folsom, three grape crushers and stemmers.

Schoinstein & Co., S. F., grape crusher and stemmer.

Wagons and Carriages.

J. A. Mason, Sac., one two-horse family carriage, one-horse family carriage, one top buggy, one trotting wagon and one open buggy, with side spring.

H. M. Bernard, Sac., two family carriages, one spring market wagon, one street goods wagon, one thoroughbraced wagon and two top buggies.

J. Henschel, Sac., one top buggy.

E. Soule, San Quentin, three farm wagons.

Pollard & Carvill, S. F., two-horse family carriage, one-horse family carriage, one two-horse landau, two topped buggies, and one trotting wagon.

Henderson & Clark, Stockton, one-horse family carriage, one light topped buggy, one trotting buggy and a set of carriage wheels.

E. E. Ames, Sacramento—Three farm wagons for general purposes.

Waterhouse & Lester, San Francisco and Sacramento—Carriage materials and trimmings.

Knapp & Ferris, Sacramento—La Belle patent thimble skin farm and freight wagons with truss brace for general use, and La Belle iron axle wagon gear.

Joseph Hill, Sacramento, one farm wagon, one spring market wagon, two-horse family carriage and four-horse farm wagon.

Fish Brothers & Huggins, Sacramento—Wagon gear and wagon complete.

W. P. Miller, Stockton—Buggy.

Waterhouse & Lester, San Francisco and Sacramento—Patent buggy screen, shade and protector.

Premiums Awarded.

FOR STOCK.

In order to give our readers the earliest possible notice of the awards of the State Agricultural Society's premiums for 1872, we draw largely from the Sacramento Union, which we believe will be found in the main, correct. Should any error in name of person or amount of award be found, we shall be glad to make correction on notice being given us.

At the Park on Friday, President Reed for the society, read the awards of the committees appointed on the several classes. When the names of the successful animals were read they were taken to the front of the judges' stand and decorated with the red or blue ribbon. Of course perfect satisfaction was not given, but there was less grumbling at the awards than might have been expected. The following is the list of exhibitors who secured prizes, with the names of their animals:

Class I—Thoroughbred Horses.

STALLIONS.—Best four-year old and over, Nathan Coombs of Napa, for Lodi; \$75.

Best three-year old, Nathan Coombs, Napa, for Photos; \$50.

Best two-year old, John Hall, Alvarado, for Alic; \$40.

Best one-year old, J. B. Damrell, Stockton, for Tommy; \$30.

Best colt under one year, John Hall, Alvarado, for Captain Harris; \$20.

MARES.—Best four-year old and over, with colt, John Hall, Alvarado, for Peggy Ringgold; \$60.

Best four-year old and over, Joseph Gluckauf, Oroville, for Pastora; \$50.

Best three-year old, James Mee, S. F., for Abi; \$40.

Best two-year old, Charles Murphy, San José, for Omaha; \$30.

Best one-year old, A. Mailliard, San Rafael, for Belle; \$25.

Best mare colt under one year, Jos. Gluckauf, Oroville, for Orient; \$20.

FAMILIES.—Best thoroughbred sire with not less than ten of his colts, all thoroughbred, John Hall, Alvarado, for Woodburn and colts; \$150.

Best thoroughbred dam with not less than four of her colts, all thoroughbred, John Hall, Alvarado, for Peggy Ringgold and colts; \$100.

Best stallion other than thoroughbred, with not less than ten of his colts, open to all, Wm.

[Continued on page 220.]

State Fair, Horse Exhibit.

Joshua Reeves, of Lincoln, Placer Co., exhibits a bay stallion, **VIBRATOR**, 5 years old, 17 hands high, as a horse of all work. This fine animal was sired by Bellfounder, grand dam Messenger mare. Has trotted on the Sacramento track the mile in 2:58.

2d. **BLACK PHIL**, a black stallion, one year old, entered for the best yearling, other than graded. Sired by Diomedes, his dam a Bellfounder mare.

MAGGIE REEVES, a sorrel filly, two years old, entered as a roadster; her sire Vibrator, dam Trustee.

J. F. Chadwick, of Hicksville, Sac. Co., exhibits **LILLY MOORE**, a sorrel mare, five years old, 15 hands and a half inch high; sired by Geo. Moore; dam Printer; grand-dam, imported Bertrand. Her running time is a half mile in 50 seconds, and can run a mile in 1:50. Entered as graded in second class.

John Rodgers, of Martinez, Contra Costa Co., exhibits **SCOTT**, a steel-gray stallion, four years old, 17 hands high, and weighs 1,480 lbs., entered as draft horse. He was sired by the imported horse, **Black Prince**. Dam, Kentucky mare.

Cornelius Behan, of Alameda, Alameda Co., exhibits **GEO. LEE**, a dapple black stallion, six years old, 17½ hands high, entered as draft horse; was sired by **Black Prince**, dam, a Canadian mare.

George Verrinder, of Latrobe, El Dorado Co., exhibits **HONEST JOHN**, a bay stallion, three years old, over 17 hands high, and over two feet around fore-arm. Sired by Belmont; dam, Bremer, entered as horse of all work; weight, 1,275 lbs.

J. R. Kelly of San Francisco, exhibits **LADY JANE** and colt. Lady Jane is seven years old, a chestnut sorrel, fifteen hands and two inches high; Sired by Marauder; dam, Jane Shore, by Pammon, imported from Jamaica in Dec., 1869. Entered as best mare and colt and sweepstakes. The mare was bought by James Mee of San Francisco for \$535.

George Treat, of San Francisco, exhibits for the turf, **THAD. STEVENS**, a seven year old chestnut sorrel stallion; sired by Langford; dam, Mary Chilton.

2d. **NEL FLAHERTY**, five years old, brown mare; sired by Rifleman; dam, Jenny Hull.

3d. **SAPPHO**, three-year-old chestnut filly; sired by Shiloh; dam, Bell Dale.

Daniel Flint, of Sacramento, exhibits **BLONDIN**, a chestnut colt two years old, and weighs a thousand pounds; is fifteen hands high; was sired by Preamus; dam, a Morgan and Messenger mare.

A. C. Lawrence, of Lawrence Station, Santa Clara Co., entered **FLORA** and **CARRIE** as a matched span of carriage horses. These animals are full sisters and very well matched; three and four years old, dark bay, of the celebrated Morgan stock.

L. H. Fassett, of Sacramento Co., exhibits **RUSHER** a fine animal, five months old; sire, Young Nelson; dam, a Morgan and Messenger mare.

C. J. Buckland, late of Guelph, Canada, who takes up his residence with us for the future, enters the imported coaching stallion **BRITISH CHAMPION**, bred by Isaac Hairsine, of Yorkshire, England, is six years old, sixteen and one-half hands high, color a rich bay with black spots; and has superior action. Sired by Venture; dam, by Calvert Horsman's champion, grand dam by J. Cragg's Admiral.

2d. The imported Suffolk stallion **BRITON**, bred by William Wilson, of Suffolk, England; is six years old, sixteen and one-half hands high, color dark chestnut, weighs 2,000 pounds and has superior action. Was sired by Wilson's Briton, dam's sire, Fayer's Boxer.

Dr. B. J. Smith of San Francisco, enters his fine black stallion, **JAS. MONROE**, 2 years old, 15 hands 3¼ inches high, and weighs 1,050 lbs. Sired by Naubuc, dam, Owendale mare.

S. B. Whipple, of San Mateo, exhibits, 1st. The Hambletonian horse, **SPECULATOR**, which has taken five sweepstake premiums as the best stallion in the State. He is a blood bay with white feet, a little more than 16 hands high. Sired by Rysdick's Hambleton; dam, Martha Washington.

2d. The brown stallion, **AXAX**, 7 years old, by Whipple's Hambletonian; dam, Ash Cat, she by Rysdick's Hambletonian, her dam by American Star.

3d. The gelding, **O. L. MARSHALL**, a fine animal; color, chestnut, 16 hands high, 5 years old. Sired by Whipple's Hambletonian, dam, Young Diana, and she by Easton's Black, and her dam by Vermont Hambletonian.

4th. The chestnut mare, **LADY BABCOCK**, with

white stripe in face, two white hind legs, 5 years old. Sired by Whipple's Hambletonian; dam Sarah Dubois, she by the Eaton, owned in the State of Maine.

5th. Bay mare **Puss**, 5 years old, 15 and a half hands high. Sired by Whipple's Hambletonian; dam, Lady Lancaster, she by Jim Brown, the property of Jacob Gain.

6th. A chestnut mare, **Millie Terrill**, 5 years old. Sired by Whipple's Hambletonian; dam, Marian, an animal of good style and a nice stepper.

7th. The beautiful gray mare, **LADY BLANCHARD**, 7 years old, by Whipple's Hambletonian; her dam, Lady Livingston; she sired by Gen. Taylor; and is the property of Alvinza Hysword of San Mateo county, he having purchased her at the round sum of \$22,500. As a 6 year old she made the fastest record in the State of California.

We have probably not spoken of one-half the fine horses on exhibition, for the reason that the time was much limited in which we found it possible to obtain the information desired. In many cases it was impossible to find groom or attendant with the animals for hours together.

If persons will send to us an account of their animals, pedigree, etc., which we have omitted to notice, we will be pleased to make a note of them in the **RURAL**.

Breeders of Durhams, Attention!

The display of cattle at the State Fair showed such excellence and the conversation of the breeders such a promise of rapid progress that the editors of the **RURAL PRESS** thought best to make an extended report, give the name, age, weight, and place in the herd book, of each thoroughbred entered. Besides this they desire to illustrate animals of marked excellence, whose owners are willing to be at the expense of furnishing cuts. They desire to learn from each breeder how long he has been in the business, what numbers of thoroughbred and grade stock he has on hand, from whom his importations and purchases have been made, and for what points he claims special excellence in his herd. Parties who are selling stock will state what prices they are realizing.

From some of the owners we have already gathered such particulars. Others we could not find, and we left requests for them to send such to the office. It may be possible that we have overlooked some entirely. As it is our desire to have all fairly noticed we will be pleased to hear from those who have not given full reports.

CHARLES CLARK, of Millitas, exhibits one thoroughbred Durham and six grades. Lincoln is a beautiful red roan, weighs 1,990 lbs., was bred by Col. Younger, and will be found recorded in Vol. XI, page 241, No. 12,295 of the Am. Herd Book. Mr. Clark's cows are of high purity of blood, but not entered in herd book. He has 38 head of grades at home, and receives from \$150 to \$200 each for his best calves. He is breeding for general symmetry and milking qualities combined. He prefers a red color.

The Sweepstakes Herd.

M. Wick, of Oroville, Butte Co., is the fortunate owner, and this award confers all the more honor when we consider that he has not been breeding short-horns quite two years. He has imported 21 head, chiefly from the herds of the Shakers, in Ohio and Kentucky.

CROWN PRINCE—4 yrs. old, red, wt. 2,200, Vol. X, 288, No. 1,900, Am. Herd Book; bred by L. D. Doty, Middletown, Ohio.

GLENWOOD—2 yrs. old, red, wt. 1,700, Vol. X, p. 353, No. 11,213; bred by L. D. Doty, Middletown, Ohio.

GOLD HUNTER—2 yrs. old, red and white, wt. 1,450, Vol. X, p. 173; bred by L. A. Doty.

GRANT—13 months old, red, wt. 900, Vol. XI, p. 203.

SHERMAN—11 mos. old, roan, wt. 1,100, Vol. XI, p. 368.

ORLANDO—11 mos. old, deep red, wt. 800, entered for Vol. XII.; Orlando is from Crown Prince, Vol. X, p. 88, and Betty, Vol. X, p. 809.

ROSCOE—6 mos. old, red, from Glenwood, Vol. X, p. 353, and Elrosey, Vol. X, p. 498.

ROAN STAR—Red roan, 48 days old, from first Duke of Yuba, and Echo, Vol. X, p. 494. The last five were bred by Mr. Wick.

BELLE REPUBLIC—8 yrs. old, red, Vol. X, p. 405; imported from the Shakers of Pleasant Hill, Ky.

ECHO—3 yrs. old, red, Vol. X, p. 400; from the herd of L. D. Doty, Middletown, Ohio.

BELLE OF BUTTE—13 mos. old, red, Vol. XI, p. 400. Mr. Wick has now on hand 33 head of thoroughbreds, and has generally received \$500 each for the young cattle sold. He sold one cow to John Brewster, of Galt Station, at \$800. This herd is especially prominent for its beautiful red color. Mr. Wick, in selecting and breeding is aiming at length and depth of carcass and the red color.

Vegetables at State Fair.

Robert A. Williamson of Capital Nursery, Sacramento, made a very fine display of 32 varieties of vegetables at the State Fair. Nearly all of these were of his own raising. Besides a general assortment of all vegetables to be found in market he exhibited many worthy of special mention on account of novelty.

Chinese Radish

Raised by a Celestial gardener in his employ averaged 12 inches long, and 3¼ in diameter. They are very crisp, not strong, and a superior radish to any we ever tasted.

The Chinese cut them into convenient sizes and dry what they do not have occasion to use green. Then they can cook them at any time.

Chinese Cabbage

Is a plant of the mustard species, resembling lettuce and used for a salad, for which purpose it is very excellent. Mr. Williamson has two new seedling potatoes which promise well but he proposes to give them a more thorough trial before sending them out.

Chinese Beans.

These grew in pods a yard long, bore a great crop and were very crisp and tender, and well calculated for string beans or pickles.

A visit to the propagating beds and sample block of the Capital Nurseries on U street between 15th and 16th, only 10 blocks southeast from the new Capital, will repay those interested in horticulture. The proprietor has been engaged here six years and shows great thrift and energy in developing his business. He is trying experiments and sparing neither money nor trouble to procure better varieties of fruit.

New Fruits.

He has the foster peach brought from New York at great expense, and said to be ten days earlier and twice as large as Early Crawford.

He has a seedling plum which only wastes 50 per cent. in drying. It is a prolific bearer and hangs a long time on the tree. Redwoods that were transplanted from the forest are a success with him. We saw two windmills and a horse power for irrigating, but he says that he only irrigates his young seed beds and grafts. Those are flooded to the depth of an inch about six times in a summer. The silver leaf maple does splendidly but no growth we ever saw compared with the first year's growth of his

Carolina Poplars.

There were some of them 12 feet high of this year's growth and the whole block was a wonder. His block of peach trees that started from the dormant bud last spring are quite stocky and from six to eight feet high. They have time to grow another foot this season.

The Evergreen Blackberry

Is a great curiosity, the foliage is very beautiful and green the year round. It is said to be a native of Washington Territory, and as the canes of this young plant are already 20 feet long we fancy that it would be a very nice thing to train upon a lattice for the ornament and the constantly ripening fruit.

Cheese Exhibit.

S. Cole of Gilroy, exhibited at the State Fair, cheeses of all shapes and sizes and we will try and tell you how he did it. Like other good dairymen he insists upon thorough cleanliness and is a believer in the virtues of hot water. He claims more than ordinary uniformity in the quality of his cheese from a peculiar method of preparing the rennet.

He soaks his rennet in scalded whey which has previously been allowed to stand until the buttery matter from the top has been skimmed off and that from the bottom allowed to settle. He soaks his rennet in two lots of this prepared whey and then mixes both lots of the liquid together and puts away in jars for future use. When rennet is strong, cheese comes quick and is hard, but in this way he secures rennet uniformly strong.

He has a peculiar cheese hoop and follower. He has a galvanized hoop in which is inserted another not joined at the end. Inside both of these is his funnel which reaches to the bottom of the hoop. The cloth is placed around the funnel before the curd is put in. When sufficient curd is in, the funnel is removed and the inner hoop drawn up to the top of the curd. Then a follower covers the whole top of the inside hoop and pushes it down as the cheese is pressed, giving no opportunity for the curd to come out around the follower. The outside hoop is not quite as high as the cheese is expected to be.

He has two hollow semi-spheres which are enclosed in a hoop and used for pressing pine apple cheese. To these a peculiar shape is given by the strings in which they hang to dry; this cheese brings 3 cents above market price.

A Thoroughbred Short-Horn Association for California.

For the purpose of improving this breed of cattle, regulating their sale, and assisting importations, the owners and breeders of Short-Horn Durhams at the State Fair organized an association.

Jealousies Healing.

The jealousies that formerly existed are fast passing away and owners are willing to recognize merit in each other's herds and they see that it is for their interest to learn from each other, and to unite in keeping up a high standard of excellence. They propose to turn out or sell as a grade, any animal not good enough to bring a fixed minimum price. No inferior animal is to be sold with pedigree and such, of course, will not be registered in the Herd Book.

What They Will Do.

They propose to import animals of the best stock that money can buy, to be stationed at convenient points and used for the benefit of members of the Association.

Each year at the State Fair they will have an auction sale of cattle.

Their next meeting will be held at San Francisco on the first Monday in February, to complete and perfect the organization and provide for annual sale and importations.

The following officers were elected: J. D. Carr, Gabatiu, Monterey Co., President; G. N. Sweezy, Marysville, Yuba Co., Secretary and Treasurer.

Angora Goat Skins Can be Tanned.

For two years, Mr. Shirland tells us, he has been looking, writing and enquiring for some one East or West who could tan and bleach the skin of the Angora. We are very glad to notice that it can be done in a way that none can find any fault with by Mr. Eberhard of Santa Clara. The soft fleecy coat of the Angora, tanned in a way to be as white as snow and soft as a glove would make a rug to grace any parlor—a showy mat for a fine carriage, a robe more beautiful than any of the fancy white wolf skins, and if only fashionable, we could hardly imagine a finer bed covering for a cool night. Robes of these beautiful skins can be had at about \$20.

But besides these skins he tans every skin that is grown or used. Had he not such a pleasant way we should think that he might, on occasion, tan an editor; with him tanning is a success. He employs 23 men the year round, and his sales would warrant him in doubling his business. We hope such men will push things not merely for their private advantage, but to develop the interests of this coast.

The State Bull Fight.

We have done a very wrong thing, are sorry for it, did not mean to, and we won't do so any more, if we can help it. It is with shame that we confess to having been found taking notes at a bull fight in front of the judges' stand on Friday, Sept. 27.

The entertainment was quite unexpected and announced by what threatened to be a general stampede of about a hundred cattle and many horses. We very soon concluded that we had notes enough, and without waiting to give orders adopted a system of military tactics, changed our base and beat a masterly retreat over the fence. We did not hesitate as many of the politicians do, on which side to get down, but agreed with old Jack Falstaff, that "The better part of valor is discretion."

Had the stampede become general the result must have been fearful. As it was one man was dangerously hurt and a boy severely. The owners of stock making a display in such close quarters should take great pains to have every animal at all dangerous, in charge of a person thoroughly capable of controlling him under all circumstances.

Trimming Hedges.

The other day we saw a beautiful hedge and upon enquiring about the care and process of trimming learned as follows: It was orange planted four years since without extra care. For two years it has been proof against stock and now the rabbits who come in at the gate must go out at the gate. The owner has got several that were trapped by the hedge. He trims the hedge in the summer time when the wood is green and cuts easily. Then one Chinaman with a corn knife trims 60 rods on both sides and on top each day. Hedge plants for fencing can be had at the rate of \$90 per mile. To trim and keep in order a mile of hedge established on this plan will cost from \$5 to \$6 per year. For private grounds it is a thorough protection, as boys and men must have ladders to climb it. It can be made a great ornament, a protection from wind and dust, a thoroughly secure enclosure, a supply of firewood and lumber, or a nuisance according to the object desired and the judgment and care exercised over it. The objection that it saps the strength of the land and is expensive to trim may both be avoided by trimming with a corn knife or sickle when the wood is green and keeping it trimmed.

USEFUL INFORMATION.

Combustibility of Iron.

The combustibility of iron is shown by any means that exposes a large surface to the action of the atmosphere. For that purpose, Professor Magnus, of Berlin, devised the method of using a magnet, to which iron filings readily attach themselves like a beard, all radiating from the poles in such a manner as to leave small interstices. On igniting these with an alcohol lamp or gas burner, they continue to burn most brilliantly; and if the experimenter waves the magnet, a rain of fire is produced.

If no magnet can be procured for the experiment, a bunch of cotton wool may be saturated with alcohol, placed on some support, and the alcohol ignited. Some fine iron filings, placed on a sheet of paper, are allowed to fall in a fine stream on the burning mass, when they burn with brilliant scintillations, showing that iron is combustible if only the supply of air is sufficient.

Still more remarkable is the experiment showing that iron is more combustible than gunpowder. A mixture of fine iron filings and coarse gunpowder is thrown on a small quantity of burning alcohol. As the iron falls through the flame, it takes fire and burns with its characteristic color and scintillations. The gunpowder falls through the flame without taking fire, and lies quietly in the bottom of the saucer until the alcohol is nearly consumed, and the flame is brought into contact with it, when it flashes, showing that it was the powder, not the iron, that passed through the flame without taking fire.

The influence which the minute size of the particles, by which a large surface is exposed to the air has on the combustibility of a substance is well illustrated in pyromorphic iron. If the oxide of iron be reduced, by passing over it a hot current of hydrogen the metallic iron so obtained, when preserved in a well-closed bottle, is left in such a fine state of subdivision as to take fire spontaneously when allowed to fall through the air.

If the oxygen of our atmosphere were not largely diluted with nitrogen, iron and steel would burn like tinder, and our stoves take fire as well as the coal in them. This is proved by the well-known experiment of burning a piece of iron in a bell jar, or in a stream of pure oxygen gas.

COAL OIL LAMPS INJURIOUS TO MILK.—It will interest some of our very precise housekeepers to learn that one of our dairymen, whose butter has a high reputation in this market, informs us there had lately been some complaint about it, the cause of which he for a long time was unable to discover, but finally traced it to the fumes of the coal oil lamp, used in lighting the milk-room. It shows (if such a word is proper) the extreme sensitiveness of milk to the least impurity in the atmosphere, and its rapid power of absorption. The difficulty was entirely remedied by putting in a tin ventilating tube, leading from the top of the chimney to the outside of the roof. The butter was not afterward complained of. He writes us: "It may as well be stereotyped, that it will not do to use a lamp in a dairyhouse, without providing a way to carry off the fumes."—*Exchange.*

INSECT SONGSTERS.—The chirping and singing of the cricket and grasshopper are frequently spoken of; but they do not sing—they fiddle. By rubbing wings and legs together—each in a manner peculiar to the species—these insects produce the sounds which characterize them. Perhaps our best instrumental performer is the "katydid." Each wing contains a little tambourine, and by the opening and shutting of the wings they are rubbed against each other, and produce the sound of "katy-did-she-did," which can be heard a long distance, and gives the insect its name.

DRIED CANTELEUPS.—The Visalia Delta mentions a lady in that place who is in the habit of drying canteleups and muskmelons for winter use, the family preferring them to dried peaches, pears, etc. They are eaten dry, or when soaked for making pies their peculiar flavor is brought out in all its original richness. The melons are taken when in full flavor, before too ripe, cleaned out inside, the rind shaved off, and the balance sliced up for hanging on poles, like pumpkins.

A SHORT ROPE VS. A LONG ROPE.—A very long rope will drag down by its own weight, and as the power of the pull is always exerted in the direction of the rope, the pull exerted by a long rope, not horizontal, but downward, will always be at a disadvantage. In conveying power by a rope, if the rope is so supported as to be horizontal for its whole length, there will be no appreciable difference in the effect of the pull whether the rope be long or short.

A NOVEL TRAVELING TRUNK.—An ingenious mechanic has invented a traveling trunk. Taking hold of the handle and lifting one end from the floor, a sharp pull draws out a hand-bar similar to those by which a hand-cart is drawn or propelled, and at the same time two strong wheels drop beneath. The trunk is at once a box on wheels, and the traveler can draw it away independent of porters or expressmen.

Prepared Wood Hangings.

Some four or five years ago an enterprise was started at the East which had for its object the introduction of wood as a substitute for paper hangings. The project was only partially successful, from the fact that in handling such thin sheets, many times thinner than ordinary veneers—say from 150th to 250th part of an inch in thickness—no care could prevent them from becoming cracked and otherwise injured, thus entailing large loss of material.

This trouble has now, however, been overcome, by covering the backs of the sheets with cloth or manilla paper, immediately after they come from the machine. This process is accomplished by machinery and the use of heavy pressure. Wood so prepared is easily handled and as readily placed upon a wall as common paper hangings. The material is cheap, and is said to be both durable and elegant. Papering can now be provided at a cost of \$1.00 per roll of thirty square feet, for the common woods, and for fancy or high priced wood according to quality. Walls so prepared are not affected by damp or dryness; they can be washed and their natural colors are said to be perceptibly heightened by age. Some of the most elegant vestibules, halls, libraries, etc., in Boston, are finished with these improved wood hangings.

Among the woods employed in this manufacture are white oak, brown and white ash, white wood, wild cherry, plain black walnut, yellow birch, silver birch, rock maple, bird's eye maple, curly maple, blister maple, mahogany, mottled black walnut, Hungarian ash, satinwood, butternut, red cedar, Spanish cedar, etc. The logs, as furnished to the saw-mill, are of different lengths and sizes. They are first placed in a large tank of water, for the purpose of soaking and softening. When taken out they are steamed, and are then passed to the machine that cuts them up into fine veneers—sheets from the 150th to the 250th part of an inch in thickness.

STATISTICS OF THE IRON INDUSTRY.—The completed returns of the ninth census, just sent to press, show the following facts in regard to the several branches of iron industry in the United States during the year ending June 1, 1870: Pig Iron—386 establishments, 574 blast furnaces (with a daily capacity of 8,357 tons melted metal), employing 27,554 hands, producing 2,052,821 tons of pig, of the value of \$69,640,498. Blooming Forges—82, employing 2,902 hands, producing 110,808 tons of blooms, of the value of \$7,765,623. Foundries—2,653, employing 51,297 hands, and producing to the value of \$99,834,218. Forges—102, employing 3,561 hands, and producing to the value of \$8,147,669. Establishments producing bar, rod and railroad iron, nail, plate, etc., 309—employing 44,643 hands, and producing to the value of \$120,301,158.

ORNAMENTING CROCKERY.—A gentleman in New Haven, Conn., invented a machine for printing in colored and gilt enamels on china and pottery of all kinds which, it is claimed, will revolutionize the whole business of ornamenting crockery, reducing the cost to a small fraction of what it now is. He has applied for patents in several foreign countries as well as in the United States.

TO CLEAN SILVER OR GOLD LACE.—Lay the lace smooth on a woolen carpet or piece of woolen cloth, and brush it free from dust, then burn rock alum and powder it fine, and afterwards sift it through a lawn sieve; then rub it over the lace with a fine brush, and in so doing it will take off the tarnish and restore it to its brightness, if it be not too much worn on the threads.

HOW TO CLEAN ALABASTER.—Take ground pumice-stone of the finest quality, and mix it up with verjuice; let it stand for two hours, then dip in a sponge and rub the alabaster therewith; wash it with a linen cloth and fresh water, and dry it with clean linen rags. Any kind of marble may be done in the same manner.

CEMENT FOR STEAM BOILERS AND GAS PIPES. This cement, offering a greater impermeability and more strength than the unimproved cement generally used, is prepared by an intimate mixture of six parts of graphite finely ground, three parts of slacked lime, eight parts of sulphate of baryta, and seven parts of linseed oil varnish.

BORAX FOR ANTS.—Somebody has discovered that powdered borax will drive away ants only when it has been deprived of its water, which can only be done at a considerable degree of heat. Perhaps this may account for the failure which many report as attending this mode of attempting to drive ants from their pantries.

PAPER CLOTHING.—Boston is beginning to import Japanese paper clothing. The paper from which the articles are made is wholly waterproof, is thin and light, an overcoat weighing only two pounds. The goods are capable of being washed several times, and will last a number of months.

THE METEORIC COLLECTION OF Prof. Shepard, at Amherst College, comprises 146 meteoric stones and 93 meteoric birones of undoubted origin and a large number of doubtful meteorites. This is one of the most valuable collections extant of these waifs from other worlds.

GOOD HEALTH.

The Science of Eating.

Henry Ward Beecher, besides performing the immense labor of pastor and preacher to the Plymouth Church, Brooklyn, fills also the position of a professorship at Yale College. In one of his lectures the art of eating is treated upon in his usual felicitous manner. He said, in regard to the stomach, that everybody feels that he must not be a glutton nor a gourmand, but there is very little discrimination and very little observation as to the quantity and quality and the times and seasons of eating.

Preachers may be divided into two great classes—the sanguineous class, who cannot eat much if they are going to think or speak, and the class who have the extreme nervous temperament, who cannot speak or work unless they do eat. On Sunday morning, when I wake, my first thought is that it is Sunday morning, and the very idea of it takes away my appetite. I go down, drink a cup of coffee, and eat an egg and half a slice of toast. That is all I can eat. Then I preach, and if I have not done very well, I am hungry; but if I have done very well, I cannot eat much dinner. That is because there is a reaction of the nervous influence of the system.

The whole system is working so much by the brain and the nerves that the stomach does not crave anything. Just as great grief or fear, or any other extreme passion takes away appetite, so does active preaching. Ordinarily, I take but a moderate dinner on Sunday. Supper with me is at five o'clock in the afternoon, and I usually take a cup of tea and a small piece of cracker. That is all I can take. Then I go to my evening work, and when I get through I sometimes am satisfied to take nothing but an orange, which I eat to give my stomach something to do until morning, and to keep it from craving—for often a fit of craving will give one a nightmare as quickly as overfeeding will. At other times I feel a strong appetite, and then I eat. Perhaps once out of five Sundays I eat more just after preaching, morning or evening, than I do all the rest of the day put together. The system indicates it, and, therefore, I am not harmed by it. It does not disturb my sleep, and digestion goes on perfectly.

Now, the point I take is, not that you shall follow this, but that you shall find out accurately, in regard to your own eating, what obstructs and what does not obstruct your mental operations. If you go to your study after a hearty breakfast, and you find it takes you from eight o'clock to eleven before you really get into your work, you may be pretty sure that you have overloaded your stomach, and that the energies of your system have been so busy in the work of digestion that you could not call them off to do brain-work. But if you get up from the table after a comparatively light meal which requires but little digestion, and when you go into your study find that you can apply yourself at once to your labor, it is because you have eaten in due proportion to the needs of your system. Eating is to the work of the human body just what the firing up of an engine is to traveling. Eating is the means to an end. It is not a habit, nor a social custom merely. It is not a question of luxury.

ALARMING INCREASE IN USE OF MORPHINE.—The use of morphine is increasing at an alarming rate in New York, and we learn from physicians that very many deaths attributed by friends, in the papers and elsewhere, to other causes, are the result of indulgence in morphine. The other day a prominent New Yorker was reported dead. The telegraph bore tidings of his sudden decease in every quarter, but assigned no cause. An inquiry since, set on foot by friends, has revealed the fact that he had become as much a slave to morphine as many are to rum. He had purchased and consumed 15 grains a few hours prior to his death. I have a friend now lying very low from the use of this dangerous drug. Twenty years ago an ignorant physician gave it to him in large quantities to allay pain. He was brought to death's door, when skilled doctors rescued him and gave him warning that further indulgence would surely kill him. Now, when once again brought low, after having been nearly restored to health, he confesses that he has been surreptitiously using morphine, purchasing it of a well-known New York druggist. His friends are so indignant at the latter, that they propose to prosecute him. There is a law forbidding the sale of morphine to any one without a physician's prescription. Such a prosecution would unquestionably have a most salutary effect upon the unprincipled druggists of the metropolis. *New York Letter.*

CONSUMPTION.—An English physician has written a book to prove that "consumption always originates from the breathing of pre-breathed air;" and, though that may be putting it rather strongly, there can be no doubt that re-breathed air is one of the most fruitful sources of this and many other forms of disease. Dr. Roux says, that the French, by daily using copper cooking utensils, take copper enough into their system to render its detection in the blood an easy matter.

A Few Words From A Tobacco Hater.

We have in the East a correspondent who is somewhat positive in his opinions and who talks out. In the following extract from one of his letters he suggests a plan to prevent the formation of the tobacco habit, and also presents an idea in regard to the influence of mind on body, which may interest some of our readers:

"Nothing more nasty and disgusting than tobacco habits. Cords and cords of fools getting 'chewed up and spit out' by the vice every day—so disgusting that you want them half a mile off when they talk to you. Guess we have got to go farther back in education, and begin on children while their mothers are babies, by some sort of hypodermic process. Old 'Conversation Alcott' (famous Yankee imitator of Coleridge, cramming himself with eccentric sayings and epigrams before going into company at a dollar a head, and then uncorking like a champagne bottle) said once, 'all great thoughts come from the stomach'; and pretty true, though Delphic also, as the stomach is very much under the control of thought. I have for years known that a man can think up an ulcer on his leg, if he sticks at it long enough. Boys will always catch tobacco till their mothers get sense enough to educate them 'from the stump,' literally and not let them idly run into it."

NEW METHOD OF MAKING BEEF-TEA.—In order to meet the daily-felt want of concentrated fluid meat food, a want not supplied by beef essence as ordinarily made, Dr. H. C. Wood has invented the following process, and found in practice that it works well:—Take a thin rump stake of beef, lay it upon a board, and with a case-knife scrape it. In this way a red pulp will be obtained, which contains pretty much everything in the steak, except the fibrous tissue. Mix this red pulp thoroughly with three times its bulk of cold water, stirring until the pulp is completely diffused. Put the whole upon a moderate fire, and allow it to come slowly to a boil, stirring all the time to prevent the "caking" of the pulp. In using this do not allow the patient to strain it, but stir the settlings thoroughly into the fluid. One to three fluid ounces of this may be given at a time.—*Canada Lancel.*

VEGETABLE GROWTHS IN THE EAR.—Since the year 1844, when the attention of the profession was first called to the subject, the growth of minute fungi in the ear has been reported to be a common cause of disease of that part. The meatus, canals, and tympanum are sometimes covered with the growth in the form of white or yellow mold on their surfaces. Prof. Seely of Cincinnati reports in the "Clinic" three cases of diseased ear in which he detected the fungus *Aspergillus*. Tinnitus, inflammation, and the accumulation of wax are the attended symptoms. The treatment consists of the application of a solution of carbolic acid, five grains to the ounce of water. As it is found impossible to transplant the ectophytes to a healthy ear by inoculation, we suspect they are the effects of disease rather than the cause.—*Pac. Med. Jour.*

VEGETABLE HAIR DYE.—As most of the mineral and metallic hair dyes in common use, are deemed poisonous, the following from the *Scientific American*, may be acceptable to some:

"Among organic dyes which can be prepared by any one is that obtained from the green walnut burr, the epicarp of the fruit of the *Juglans regia*. For this purpose the burrs are soaked in water and pressed. The liquid thus obtained is then evaporated and the dye precipitated as a black powder, which can be used in any convenient form of hair dressing. Dr. Kurtz says that large quantities are used in Greece, and are also exported thence for this purpose. The Greeks also make a dye by adding alum to the expressed juice, and use this to give a dark and marketable color to the cattle exported to Marseilles and other places where light colored stock is at a discount.

ANIMALCULES IN BUTTERMILK.—Dr. J. P. Brown, of Galt, Ontario, in the *Canada Lancel* for August, gives an account of a family poisoned by drinking buttermilk, which on examination with the microscope, was proved to contain immense numbers of animalcules. He thinks the germs which produced them were taken in by the cow in the water which she drank, and found their way into her blood through the lacteals. The symptoms were those of narcotico-irritant poisoning, viz.: vomiting, purging, cramps, stupor, etc. We think it much more probable that the organisms were produced in the milk after it was taken from the cow.

QUACK ADVERTISEMENTS PROHIBITED.—The posting of placards of quacks and quack medicines has been prohibited in the streets of Chicago. Why cannot San Francisco follow the good example? Many of these placards are an offense against decency, apart from the imposture which they involve.

VENTILATION.—Dr. Angus Smith gives a good rule for ascertaining the amount of carbonic acid in the air of houses: "Let us keep our rooms so that the air does not give a precipitate when a 10% ounce bottleful is shaken with half an ounce of clear lime water," a sanitary regulation which can easily be carried out.



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SAN FRANCISCO:

Saturday, October 5, 1872.

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"Scattering Seeds!"

We herewith offer, till further notice, to send the PACIFIC RURAL PRESS FREE for the term of THREE MONTHS (12 Nos.) to any one addressee which any new yearly subscriber may designate. Every old subscriber, upon renewing his subscriptions may send us the name of any neighbor or friend in any part of the U. S.—who does not already receive the PRESS—and a copy of the paper shall be sent for ONE MONTH free. Making the paper, in this manner, known to those likely to subscribe, we believe will more rapidly extend our list. We know there are thousands who would subscribe at once if fully acquainted with the benefits to be derived from our columns.

Receipts at State Fair.

The following is a comparative statement of tickets sold at the Park and Pavilion for 1870, 1871 and 1872:

	1870.	1871.	1872.
Park.....	\$11,201.36	\$11,843	\$15,388.50
Pavilion....	6,867.50	8,086.50	8,964.00

Total.... \$18,068.86 \$19,929.50 \$24,352.50

There is no doubt had the managers of the various lines of travel to Sacramento, seen fit to have issued tickets at the rates they have on former years, the receipts would have been largely increased.

AT THE GOAT GROWERS' CONVENTION, at Sacramento, Sept. 26th, the following officers were elected for the ensuing year: Thos. Butterfield, of Monterey, Co. Pres.; L. Gilmore, El Dorado, Secy.; L. A. Upson, Sacramento, Treas. All engaged in breeding Angora goats are requested to correspond with the Secretary, and, with other information, give the amount of fleeces on hand, and an estimate of next spring's clip. United action is to be taken to obtain the best market for the mohair produced on this Coast.

The Mohair Question.

We have been favored with a call from Mr. Wm. M. Landrum and James M. Rodgers, the largest breeders of the Angora goat, pure, full-blood and graded, in America. They import and breed goats, as they and others do fine woolled sheep, for purposes of sale, and profit on both animal and fleece. Of course these gentlemen—and other breeders of goats—feel a deep interest in all that concerns a market for the fleece of the animal they are doing so much to introduce.

It is certainly a landable desire on their part, we have no hesitancy in repeating what we have said in former numbers of the RURAL, that we believe California will be the best mohair-producing country in the world, outside of Asia, and that there will be a market at our doors for the raw product as soon as any considerable quantity is produced.

We are convinced—since our interview with gentlemen at the Fair—that the mohair goats of California will be, and really now is, superior to the original Asiatic stock; a larger animal with a heavier fleece and of superior quality in every point that constitutes excellence and value.

We have never doubted there being a market for mohair in England, and from the following letter kindly placed in our hands for publication, the fact of there being an English market is fully established; and we are assured by Messrs. Landrum & Rogers, that there will be an American market, even in San Francisco, within six months, for any amount of mohair that may be produced on the whole coast and interior country.

Mohair growers will please turn to page 130 current volume of RURAL and observe, that where we speak of there being no market for mohair in New York, it was not our assertion, but a clip from the *American Agriculturist* of New York City. We hope soon to hear of a market for mohair in New York and Boston, that there may be a little competition with our San Francisco buyers.

What we want is, that the farmer or producer of mohair shall receive the full, fair value of his product, and to see that the whole profit of its growth, does not go to the middle man or speculator who simply handles it, on its way to the manufacturer.

LONDON, 17 BASINGHALL ST., May 22d, 1872.

MESSES. CHRISTY & WISE,
607 Front Street,
San Francisco.

Gents:—Your favor of the 30th April, is duly to hand. We have not seen any Goats' Wool from California, but we do a large business both in Turkey and Cape Mohair. The former is chiefly pure bred, known as fair average Angora, but there is also a quantity composed of the inferior parts of the fleece, which is packed separately ranging in value from 25 to 60 cents per pound. The "fair average" is now worth from 82 to 84 cents per pound. The best Cape Goats' Wool is worth from 60 to 66 cents per pound. The other classes run from 18 cents upwards, according to the amount of crossing, and the proportion of low, coarse, common bred wool mixed in them.

We imagine that your wool will approach more nearly to the Capes, and if you will send us over a few samples representing as near as possible the various classes, we shall be very glad to give you quotations. We are only brokers, not merchants, therefore do not make advances against shipments, or bills of lading, but only against wool given into our hands by merchants here. We remain, Gents,

Yours truly, THOMAS & COOK.

Our goat growers are now convinced themselves that there is at present no permanent considerable market known to them for the sale of mohair in this country. They have also learned satisfactory reasons why there has not been a reliable market heretofore, and why such a market will soon, in all probability, be established. We shall give some interesting facts concerning this subject soon.

WHO MAKES CASTOR OIL?—W. W. Montgomery, of Davisville, shows a very fine sample of castor oil bean. He has thirty tons at home and he would be very glad to know where he can find a market for them. Let us hear from the oil people. We shall be very glad to disseminate any information that may be furnished us regarding this branch of industry. Perhaps Mr. Montgomery will favor us with particulars of the plant and its culture.

NOTES ON HAND.—We have many notes taken at the State Fair, which may be expected soon. Also, letters concerning steam plowing in Louisiana, and other matters postponed on account of Fair reports.

Mail and Telegraphic Quotations of Wheat in Liverpool Compared.

It has been for some time past, surmised by many that the quotations of California wheat in Liverpool were below the real market rates prevailing there, that this was done for the purpose of still more depressing prices here, already unduly lowered through the operation of ruinous freight rates. Being anxious in the interests of the agricultural community to test the truth of this market, we have been comparing the telegraphic quotations with those prevailing in the Liverpool market, as given by the "Mark Lane Express," the representative of the produce interests of England, both agricultural and commercial, and have found that in every instance the former are a long way behind the latter.

The following is a table showing the quotation of California wheat as telegraphed to this city, in comparison with those given by the "Mark Lane Express," for the month beginning the 30th of July and ending the 30th of August of this year.

DATE	IN STERLING		FED. COIN		MEAN DIFFERENCE
	PRICES AS QUOTED BY MARK LANE EXPRESS.	PRICES QUOTED BY TELEGRAM.	PRICES AS QUOTED BY MARK LANE EXPRESS.	PRICES QUOTED BY TELEGRAM.	
Jul. 30	12s to 12s6d	11s 10d	\$2.88—\$3.00	2.84 10 cents.	
Aug. 2	11s4d—12s3d	11s 8d	\$2.86—\$2.91	2.80 10 "	
Aug. 6	11s10d—12s0d	11s 8d	\$2.84—\$3.00	2.80 12 "	
Aug. 9	12s1d—12s9d	12s 0d	\$2.90—\$3.06	2.88 10 "	
Aug. 13	12s4d—13s3d	12s 4d	\$2.98—\$3.18	2.96 11 "	
Aug. 16	12s3d—13s2d	12s 3d	\$2.94—\$3.16	2.94 11 "	
Aug. 20	12s2d—13s0d	11s 10d	\$2.92—\$3.12	2.84 18 "	
Aug. 23	12s2d—13s0d	11s 10d	\$2.92—\$3.12	2.84 18 "	
Aug. 27	12s2d—13s0d	11s 10d	\$2.92—\$3.12	2.84 18 "	
Aug. 30	12s2d—13s0d	12s 4d	\$2.98—\$3.18	2.96 12 "	

What the Farmers Lose.

From this it may be seen that the real Liverpool price has been from 10 cents to 18 cents per cental over that telegraphed to this city. Now, as the prices here, freight remaining the same, are governed entirely by those in Liverpool, which takes the greatest part of what is available for export, it is manifest that the farmers are losers to a heavy extent by this game. During the month of August there was received at San Francisco 1,299,000 centals, the whole of which was lowered in price by this unprincipled action. All this wheat sold on an average for 13 cents per cental lower than what it would if the true wheat quotations in Liverpool were daily made known in this market. The loss has thus been for that month alone \$168,870, the whole of which will go into the pockets of the manipulators. At the same rate the loss on the whole year's wheat product of California would be, according to the various estimates made of the crop, from \$1,560,000 to \$2,340,000—a nice little pile to divide amongst operators.

The iniquity of this telegraph manipulation cannot be too forcibly reprobated. It should show the farmers of the State the urgent necessity of combining and adopting means of self-protection in the whole matter of wheat freights and wheat quotations, as quickly as possible.

EXCAVATOR.—The *Sacramento Union* in its report of the State Fair, mentions the following: On the inside grounds there was one piece of machinery which deserves more than a passing notice. We allude to Slusser's self-loading excavator, a machine apparently so simple and yet so perfectly adapted to its work as to commend it to the attention of all. It resembles an ordinary two-horse wagon, and has an apparatus for plowing and loading dirt, which it is claimed it will do with a lighter draft than is required to break the same ground with an ordinary plow. It is said with one span of horses it will do the work of ten scrapers. It was worked yesterday morning in the presence of many interested parties. The bed of the excavator is made to hold a cubic yard of dirt, and it was filled several times in less than half a minute. It is perfectly under the control of the driver, who, sitting in his seat, can pull one rod which sets the scraper in the ground, another which opens the bottom of the body and lets the dirt out, or another bar which closes the same. For making roads over the level plains of California, or digging irrigating ditches, it seems to be well adapted. It digs a furrow about 12 inches broad, and may be set as deep as 14 inches. It is claimed to work as well in hard adobe land as in softer soil. A. M. Burns of San Francisco had the excavator on exhibition and entered it for a premium.

ALFALFA.—We examined another field of alfalfa the other day, grown on sedimentary land near Sacramento without irrigation. It was sown early last fall where there was some stubble and weeds to protect the young plants from frost. This season there have been three crops of hay cut from the land and the pasturage that remains on one field has been sold at \$8 per acre. From the three crops already cut, there has been gathered five tons to the acre, and at present another ton could be cut.

Fire Defense and Wind Breakers.

Every year brings its destruction of hundreds of acres of grain fields and thousands of bushels of wheat by fire, having its origin in accident or design. Early last Spring we were the first to propose the growing of alfalfa at proper intervals, that should interpose a green and succulent barrier to the progress of the sweeping fires that too often desolate large tracts of ripening grain.

Immediately after from various sources came different projects for accomplishing the same purpose; such as plowing the land subdning or preventing the growth of all vegetable products, or the mowing of grain in belts so early as to secure a second growth that should be yet green while the grain was ripening. All these were but make-shifts, to be adopted till the better plan could be substituted.

We now propose, as the season is approaching for action in the matter of protection another year, that farmers sow or plant the seeds of the Malva tree, in belts of 20 or 30 feet in width, that after the first year would present a perfect compact mass of low, bushy broad-leaved trees, so green and dense that no fire could pass them.

These belts would not only furnish a most grateful shade for animals during the summer months after the grain harvest, but furnish in their leaves an immense quantity of excellent food for cattle, sheep or goats; and after the third year, more firewood than the farm would require; and at all times effective wind breaks as protection to farm, animals and crops.

Every six or eight years the locality of these belts can be changed to new ground, when it will be found that for every purpose of grass or grain growing, the old malva ground has increased its former fertility, by the shading of the ground, the droppings of the animals and decay of leaves and roots in the soil.

Grain Without Granaries.

In no other country than California do we find more grain produced than can be housed. Nowhere else do people think it unnecessary to build granaries. It would really seem as though our farmers had adopted the very plan, in the management of their wheat and other grains, to make an immediate sale of their products absolutely necessary, in order to save themselves from loss.

Millions of bushels of wheat, but no place to store it away from the impending autumnal rains. As a consequence many are almost forced to sell their crops at present low rates or suffer a worse loss in the injury resulting from an entire lack of rain shelter.

If farmers would make large cheap granaries by laying a foundation of scantling directly upon the ground and cover the same with a double thickness of inch thick boards, with the sides raised not to exceed two feet—as beyond this the latter or side pressure becomes very great—and cover the same with a steep roof of boards securely nailed to rafters of scantling, a granary can be made at comparatively small expense that will contain and keep in perfect condition the entire product of any grain field in the State.

The farmer then can wait for the spring market, with a fair prospect of selling at an advance over present prices that will pay perhaps the entire cost of his granary, and leave it on his hands for another year, at no cost at all. It gives the grain speculator an enormous advantage over the producer when the former has ample storage room and the latter none, and this advantage is sure to tell upon the pockets of both, but in directly opposite ways. The truth can be told in few words—every farm should have a granary sufficient for the storage of its entire grain product.

THE MACEDON NURSERIES.—These nurseries are situated in Macedon, Wayne county, New York, the property of J. B. Jones, one of the best tree and plant growers and general nurserymen of the Northern and Western States. His stock for health and natural vigor may be considered as without a superior anywhere; whilst the variety is equaled by few if any of the most celebrated Eastern nurseries. He makes as one branch of his business, a specialty of selling one year old trees, true to their kinds as ordered; a great advantage where they are required to be sent to considerable distances.

KILLING STUMPS.—A correspondent asks how he can kill a stump, and remarks that he is told that to bore a hole in the same and fill it with salt, will do it. In most cases it will; but a small quantity of kerosene oil is more certainly effective—it is sure.

The Close of the Fair.

The *Union* of Saturday, says: The last day's programme was witnessed by the largest assemblage of the State Fair. From early morning till the set of sun the Park was crowded with sightseers, who took great interest in all the proceedings. The stalls also received more than their usual share of attention. The exhibition just closed has, as a whole, been a grand success. It is true, some of the classes which in former years have been well represented had a very poor showing the past ten days, but the very great increase of entries in other classes more than compensated for this defect. The department of horses was as well, if not better, represented than the last or any preceding year. Of thoroughbreds, graded and roadster, and other classes, there were some of the best in the State entered for premiums, and any animal that was awarded a premium this year, has an honor of which its owner may well be proud. Some of the younger animals that have scarcely been noticed this season, by the time the next Fair opens will be in the front ranks. To show the value of this part of the exhibition, we mention one young cream-colored draft stallion; three years old, owned by William Sparrow, of Franklin Township, Sacramento county, which weighs 1,700 pounds, while there was another draft horse, older, that weighed over 2,200 pounds. Of the racing horses that were on the ground, the *Union's* racing record is the chronicle. One horse made the fastest two-mile trotting time ever made on the Pacific Coast; another made the fastest time for one mile, and two pacers made two of the fastest mile heats ever gone on hoof by anything other than running horses. It is a record that needs no eulogy.

The stock parade was not as long as usual, a large number of cattle not having been examined by the appointed committees, and had in consequence to be placed in the center of the field, but enough were out to stretch the line of march nearly around the track. After the parade was over the cattle were ranged on the inside track and the horses were led up to the quarter stretch, and all there waited the reading of the awards. It was while the animals were packed together that the beauty of the whole could be best judged. While standing before the judges' stand two Devon bulls, belonging to J. R. Rose of Lakeville, got to fighting, and during their struggles injured five or six persons. Barring this no accident worthy of note has marred the proceedings at the Park. The reading of the premium list was commenced at 11 o'clock and did not close until 1 p. m. President Reed announced the names of the successful exhibitors and Superintendent Cary tied the prize ribbons on the animals. The prizes were not paid on the stand as has been the case of previous years, but were paid at the Entry Clerk's office.

THE STATE FARMERS' UNION.—The Directors of this association, organized by the Farmers' Club State Convention, met on Wednesday evening last for consultation. There were present Gen. John Bidwell, President; Maj. J. R. Snyder, Dr. W. S. Manlove, T. Hart Hyatt, I. N. Hoag and A. T. Dewey. It was deemed desirable to at once move for a full organization of farmers throughout the State, acting in candor and firmness in all transactions.

A New Zealand Sheep Shearing.

Twenty-five shearers were at work on the floor. Each workman had a trap door close to him, out of which he pushed his sheep as soon as the fleece was off, into a little pen, so that it could be seen if the animal had been too much cut with the shears, or was badly shorn in any other respect.

A very expert shearer can take off 120 fleeces in a day, but the average is about eighty to each man. They get £1 per hundred, and found. They have a cook of their own, with as much bread and mutton, tea and sugar as they can consume. They work at least 14 hours out of the 24, and with a flock of 50,000 sheep, make a good deal of money.

Two boys are constantly employed in bringing armfuls of rolled-up fleeces to the wool tables. The sorters at once open the fleece, and pronounce to which bin it belongs. Two or three men standing behind, roll up the fleeces again, and put them on a shelf divided into compartments, which were labelled so that the kind of wool could be told at a glance. These bins are then emptied into trucks, and carried off to the press, where the bales are packed.

The fleeces are tumbled in, and forced down by a heavy screw press, till the bale, which is kept open in a large square frame, is as full as it can hold. The canvass top is then put on, tightly sewn, four iron pins are removed, and the sides of the frame fall away. The bale is now complete, and ready to be hoisted by a crane into the loft above, where it has the brand of the sheep painted on it, with its weight, and to what class the wool belongs.—*Life in New Zealand.*

A Lusus Naturæ.

Nature is not always true to, or strictly observant of, general laws; hence we see in the animal kingdom occasional monstrosities, such as six-legged or double-headed calves, chickens with four legs, fish with two heads and a great variety of these strange shapes, quite out of the ordinary course of nature; to say nothing of Siamese Twins or other wonderful conditions that occasionally in all ages have shown themselves in the human family.

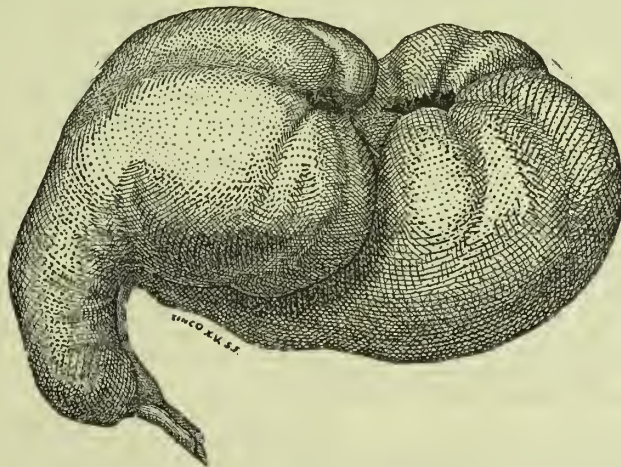
Nor is this disposition of nature to sport in her creations confined to the animal kingdom; for we often see double cherries, double apples, and double berries of several varieties; and in the instance illustrated by our engraving we have a double Bartlett pear, in which each part of the donblet seems to have made about an equal growth, which can seldom be said of any of the additional appendages in the case of animals.

The pear is a curiosity in its way, and as such we make a note of it, and present its form and size, that if it can be equalled or surpassed, that we may be able to obtain it for another illustration in the *RURAL*.

Notes from Western New York.

The Genesee Valley, so long famed for its fine wheat flour has lost its supremacy of wheat growing, but claims the best soil and climate in this latitude east of the Rocky Mountains for fruit growing.

Here are situated the largest nurseries in the States and here are grown the best fruits that regularly reach Eastern markets. The early



A DOUBLE PEAR.

establishment of large nurseries at Rochester by Elwanger & Barry, Frost & Co. and others; at Geneva by the Smiths, and Maxwells, and of the Macedon Nurseries by J. J. Thomas, called the attention of all classes to the advantages of planting the better class of fruits for market. The early building of the Erie Canal and N. Y. C. R. R. carried all surplus products to the seaboard cities, thus thoroughly establishing this branch of industry.

Fruits, Grains and Wages.

It has been found that winter apples grown in this cool climate tempered fall and spring by lake winds, prove the best keepers and for shipping on long voyages are unequalled. Hence in seasons like this when the apple crop is universally large our crop is sought for at remunerative prices.

The season here has been unusually dry and hot which, having been preceded by two dry ones, proves very trying for grass and small grains, the yield of which is light—corn is generally good and potatoes a fair crop of good quality.

Fruit of all kinds has been remarkably abundant and brought good prices until our enormously large crop added to the crop of New Jersey and Delaware, glutted the markets, and have only been worth 50 cents to \$1 per bushel at the orchards, many rotting before they could be gathered.

Laborers have been in demand and wages high, fully as high as during the war when one dollar represented about forty cents. Under these circumstances farmers although making a good living are not saving much money.

Macedon, N. Y., Sept. 16, 1872.

J. B. J.

PATIENCE is a quality so rare in the industries of this coast that it occasions remarks wherever it is seen and nowhere have we been more forcibly impressed with it than in examining some lace curtains shown at the State Fair by Mrs. Marin Dewey.

They were large and of a very elaborate pattern and done entirely with knitting-needles. It took five dozen spools of thread and as nearly as we could find out between 400 and 500 hours of faithful labor. It will take time to wear them out, as it took time to make them.

FARMERS IN COUNCIL.

San Jose Farmers' Club and Protective Association.

The Club met Saturday, Sept. 28th. President Casey presiding.

The Question adopted for discussion at next meeting is "Resolved that the present game and fish laws are unjust to farmers and should be abolished."

Mr. Ware was called upon to report in regard to the proceeding of the

State Club

Or California Farmer's Union, held at Sacramento during the State Fair. He said he did not know that he had any report to make, the proceeding being published in full in the papers; but perhaps the club would like to hear the Constitution read, if so he had a copy taken from the *Sac. Union*.

The Secretary was called upon to read the Constitution which was listened to with attention. L. H. Holloway said the next thing we would have to do would be to "shell out" twenty-five dollars to the State organization.

Some one remarked that he was too fast, that this club did not need to pay one cent unless it so desired. Mr. Chipman moved the matter lie over one week. Mr. Garrigus suggested that two weeks would be better; it would give all a better chance to become thoroughly acquainted with the matter. Which amendment was accepted.

J. F. Holloway thought the whole thing had been done in a loose manner. Our delegates had been instructed to go against a State Organization, but it appears that we have been misrepresented, and have it saddled upon us, with a head office at San Francisco, and San Francisco of all places is the one from which we have most to fear. It is there where all the jobs are put up. Where all the rings are form-

Fertilizing and Fertilizers.

For some time it appeared there would be no discussion but finally Mr. Hobson said he knew but little about fertilizers for grain crops, but had had some experience in raising vegetables and fruits. The best thing he had ever tried for berries was hen manure put in the ground and well mixed. It is worth hauling many miles for this purpose. He had never tried plaster or salt, but thought that in this country the land had too much salt already. Chemists may be able to tell what is good for different lands, but he thought nothing should be taken for granted until it had been tried. He thought it would pay to use fertilizers on the richest land in the State.

Subsoiling.

Mr. Hobson said that everyone should be convinced by this time of the necessity of plowing as deep as the roots run, but the great question was how to do this. It was first to be decided whether the subsoil should be turned up or only cut and loosened, and it was the next business to find a machine that would do the work. It couldn't be done with a plow, but it might be with a coultter attachment.

Mr. Cadwell suggested that the Michigan plow in use on the prairies of Illinois would do the work.

He said that there was no difference in the soil. It was as rich four feet deep as on the surface. All it needed was to be exposed to the sun and air.

Mr. Dubois thought the soil should not be fertilized for several years. His land had always been too rich. He didn't believe much in top dressing, and deep plowing would render the straw so weak that it would drop down and the crop would be lost. He recommended rolling the ground. He would not have straw piled about his place. The question of fertilizers is brought up too early; the land does not need it now and will not for several years; it is too young yet; it is too rich and must be cropped down.

Green Manuring.

To renew land that was run down he believed the true way was to plow under a green crop in the spring and let cattle run on it as much as possible afterward.

Although the soil may appear equally good for several feet down yet there is something in the surface soil that makes it better than below. He knew a field where the surface as deep as one plowing had been washed away, and, although the soil looked equally well, it never after produced so well. Mr. Hill read an article from the *Southern Farm Home*, recommending summer following.

Mr. J. F. Holloway said the experiences of other countries would not do for California. He did not believe in summer following, the land is too valuable to let it lie idle in that way. He believes in manuring but not too much for grain.

The Time to Manure.

Manure should be hauled and scattered before the rains come on while it is perfectly dry, then it can be shoveled with a great scoop and hauled in tremendous loads and scattered over the ground with little cost.

The depth to plow depends on the soil; loose soil should be plowed shallow, he believes in much cultivating on the surface. Save your soil by feeding the stubble to cattle. Turn droves of cattle into your fields even if you have to pasture the butchers' cattle for nothing. It is ridiculous to summer fallow, it is suicidal and costs more than a crop. It is more profitable to take in a drove of cattle.

The Club accepted an invitation to visit the rooms of the City Library after adjourning. President Casey brought a box of fine fruits to the club-rooms, which were freely discussed after adjournment, before visiting the

City Library.

The Library Association occupy five rooms in Knox block, on second floor, entrance from First street. The Library proper is at the end of the hall, the ladies' rooms just to the right and to the left of the Museum, the chess-room and the reading-room.

An attractive object is a fine cabinet of ancient and modern coins, presented to the Association by Mayor Pfeister.

Vacaville and Pleasant Valley Horticultural and Agricultural Association.

Regular meeting at Vacaville, Solano county, Saturday 28th Sept. The following persons were elected officers for ensuing year: O. Bingham, President; G. K. Miller and G. F. Barker, Vice-Presidents; H. H. Lewis, Recording Secretary; J. Huekins, Corresponding Secretary and Reporter; Wm. C. Cantelow, Treasurer. Pres. Bingham made a brief report of the organization and objects of the California State Farmers' Union, organized at Sacramento during the State Fair, after which a general discussion was had upon the free package system, and it was finally resolved that the corresponding Secretary be instructed to correspond with parties at Georgetown, El Dorado county, for the purpose of ascertaining at what price the said parties would deliver boxes of a given size at Vacaville for; also it was moved and carried that G. K. Miller be requested to make estimates and report at a special meeting of the association to be held on Saturday, Oct. 12, what he would contract to deliver such boxes at, after which the meeting adjourned to meet at Oakdale school house in Pleasant Valley, Oct. 12, at 1 o'clock p. m. J. HUEKINS.

Corresponding Secretary and Reporter.



How Little We Know.

How little we know of each other!

How ready we are to condemn!
And lazily drift with the current
"Twere manly and noble to stem,
When could we but know the temptations
And trials of frail ones that fall,
Our judgment were tempered with mercy,
And tender compassion for all.

How little we know of each other!

How dim is prosperity's ray
The trials and struggles that cover,
Like guilt from the eyes of the day,
The paups of the houseless, the homeless,
The friendless on Poverty's road,
May be at our threshold, unheeded,
And visible only to God.

How little we know of each other!

The brand of dishonor and shame,
If truth were as welcome as falsehood,
Might canonize many a name.
The culprit might put on the ermine,
The silver be purged of its dross,
And Crime's ghastly gibbet transfigured
To Martyrdom's glorious cross.

Home Reading.

One of the pleasant and noble duties of the head of the family is to furnish its members with good reading. In times which are passed it was considered enough to clothe and feed and shelter a family. This was the sum of paternal duty. But latterly it has been found out that wives and children have minds, so that it becomes a necessity to educate the children and furnish reading for the whole household. It has been found out that the mind wants food as well as the body, and that it wants to be sheltered from the pitiless storms of error and vice by the guarding and friendly roof of intelligence and virtue. An ignorant family in our day is an antiquated institution. It smells of the musty past. It is a dark spot which the light of the modern sun of intelligence has not reached. Let good reading go into a home; and the very atmosphere of that home gradually but surely changes. The boy begins to grow ambitious, to talk about men, places, principles, books, the past and the future. The girls begin to feel a new life opening before them, in knowledge, duty and love. They see new fields of usefulness and pleasure. And so the family changes, and out of this number go honorable members of society. Let the torch of intelligence be lit in every household. Let the old and young vie with each other in introducing new and useful topics of investigation, and in cherishing a love of reading, study and improvement.

The Value of Small Courtesies.

Civility costs nothing, and is often productive of good results. Here is an instance: A local doctor of medicine at Bath, England, has just had a legacy of \$20,000 and a comfortable house left him by a lady who was only known to him by his once offering her a seat in his carriage. A gentleman known to the writer, once assisted a very old feeble man to cross from the London Mansion House to the Bank of England. This crossing is a very dangerous one, especially at midday, when the city is full of cabs, omnibuses, drays and other ponderous vehicles. When the old gentleman had got safely across, he exchanged cards with his obliging young friend, and there the matter rested. Some four or five years after this incident occurred a firm of London Solicitors wrote to the young gentleman who had taken pity on the old man, informing him that a legacy of \$5,000 and a gold watch and chain, had been left him by a gentleman who "took the opportunity of again thanking him in his will, for an act of unlooked for civility." It is not likely that all will have gold watches and chains left to them, or neat little bundles of crisp notes; but it is certain that acts of civility are productive of sufficient results to our inner selves as to make it worth while to practice them wherever we find the opportunity.—*Ec.*

Esteem.

In domestic rule esteem is more potent than indulgence or even than forbearance. When boys or girls go wrong, a very frequent cause is that they are not esteemed at home, or fancy they are not. This esteem must be genuine; it cannot be pretended or counterfeited. Hence, in a governing person there are few qualities so valuable as readiness to appreciate merits or ingenuity in discovering them, especially the latter. In every large family, or small circle of friends, there is generally some very difficult person to understand. This person is often exceedingly troublesome, and, to use a common expression, very "trying." His or her merits (for he or she are sure to have some) have not been found out. Find them out and appreciate them. A great deal of the trouble of dealing with that person will be removed. The value of imagination in domestic government is very great. If we could have statistics on the subject, we should find, I think, that the children of unimaginative people are particularly prone to go wrong.

It may be noted as a curious fact, that a real belief in unreal merits will serve the purpose. An illustration of this is afforded in a work of fiction. In "David Copperfield," my aunt's belief in Mr. Dick's sagacity saves that poor man, and properly saves him, from becoming the inmate of a madhouse.

PRESIDENT PORTER, of Yale College, gave the following advice to the students of that institution the other day: "Young men, you are the architects of your own fortune. Rely upon your own strength of body and soul. Take for your star, self-reliance, faith, honesty and industry. Inscribe on your banner, 'Luck is a fool, pluck is a hero.' Don't take too much advice—keep at your helm and steer your own ship, and remember that the great art of commanding is to take a fair share of the work. Don't practice too much humanity. Think well of yourself. Strike out. Assume your own position. Put potatoes in your cart, over a rough board, and small ones go to the bottom. Rise above the envious and jealous. Fire above the mark you intend to hit. Energy, invincible determination, with a right motive, are the levers that move the world. Don't drink. Don't chew. Don't smoke. Don't swear. Don't deceive. Don't read novels. Don't marry until you are able to support a wife. Be in earnest. Be self-reliant. Be generous. Be civil. Read the papers. Advertise your business. Make money and do good with it. Love your God and fellow-men. Love truth and virtue. Love your country and obey its laws."

HOW TO SPEAK TO CHILDREN.—"You must be careful to use little words and simple expressions," says one. "You must speak as you would to adults; don't use baby-talk," says another. Neither is right, and yet both are partly right. A true teacher or talker to children cannot "be too careful" to use little words. We have heard men speak to children who were evidently going through a process of mental translation. It is always a dull stuttering mode of utterance, and generally results in broken baby-talk. But, on the other hand, children do speak and think in a different language from that of adults. A true talker or a true teacher accustoms himself to the society of children. When the habit is formed, he speaks to them naturally in their dialect. He could not use big book-words if he were to try, when talking to a company of children. The whole secret is in sympathy. Every teacher ought to be able to live and think and speak without constrained effort, in the child's world.—*Wisconsin Jour. of Ed.*

NEARNESS OF DEATH.—When we walk near powerful machinery, we know that one misstep and those mighty engines will tear us to ribbons with their flying wheels, or grind us to powder in their ponderous jaws. So, when we are thundering across the land in a railroad car, and here is nothing but an inch of iron flange to hold us on the track. So, when we are in a ship, and there is nothing but the thickness of a plank between us and eternity. We imagine, then, that we see how close we are to the edge of the precipice. But we do not see it. Whether on the sea or on the land, the partition that divides us from eternity is something less than the oak plank, or half-an-inch iron flange. The machinery of life and death is within us. The tissues that hold the beating powers in their place are often not thicker than a sheet of paper, and if that thin partition ruptured, it would be the same with us as if a cannon-ball struck us. Death is inseparably bound up with life in the very structure of our bodies. Struggle as he would to widen the space, no man can, at any time, go further from death than the thickness of a sheet of paper.

HUMILITY is a grace that adorns and beautifies every other grace; without it, the most splendid natural and acquired acquisitions lose their charm.

Teach the Girls to Work.

Farmers' little daughters can be taught many valuable duties at the early age of seven or eight. They can be taught to knit their own stockings and mittens, sew patch-work, and even spin. At the age of nine or eleven let them have a quilting, and invite the little girls in the neighborhood to help them quilt. This will induce them to be smart and persevering. Likewise have them practice in cooking, as every mother knows this is the most essential part of house-keeping. We must not think because they do not go about it as handily as we do, or scatter a little flour, they must wait until they are sixteen. Just go into the pantry and tell them how to proceed to make biscuit and pies, then leave them to cook and use their own judgment, as they will have more confidence when left alone. Then praise and encourage them if they succeed. Never speak discouragingly of their efforts if they do not. It is very satisfactory to know that our daughters will accomplish their domestic duties with economy, cheerfulness and alacrity. The neglect of early training in the above mentioned duties, perhaps, may be the reason why so many Misses are not skilled in those duties, and therefore do not succeed when called to take charge of a home of their own. I am acquainted with a couple of daughters, who, when at the age of thirteen, could cook, spin and weave, and make butter. They drew the first premium on Misses' butter at the county fair.—*A Mother, in Maine Farmer.*

SOMETIME.—We have all our possessions in the future which we call "sometime." Beautiful flowers and singing birds are there, only our hands seldom grasp the one, or our ears here the other. But, oh, reader, be of good cheer, for all the good there is a golden "sometime;" when the hills and valleys of time are all past; when the wear and fever, the disappointment and sorrows of life are over, there is a place and the rest appointed of God. Oh, home-stead, over whose roof falls no shadows or even clouds, and over whose threshold the voice of sorrow is never heard; built upon the eternal hills, and standing with thy spires and pinnacles of celestial beauty among the palm trees of the city on high, those who love God shall rest under thy shadows, where there is no more sorrow, nor pain, nor the sound of weeping "somewhere."

CHARACTER.—We may judge a man's character by what he loves—what pleases him. If a man manifests delight in low, sordid objects, the vulgar "song and debasing language, in the misfortunes of his fellows or animals, we may at once determine the complexion of his character. On the contrary, if he loves purity, modesty, truth—if virtuous pursuits engage his heart and draw out his affections—we are satisfied he is an upright man. When we see a young man fond of fine clothes and making a top of himself, it is a sure sign that he thinks the world consists of outside show and ostentation, and he is certain to make an unstable man, without true affection or friendship, fond of change and excitement, and soon wearying of those objects and pursuits which, for a time, gave him pleasure.

AN ELOQUENT PASSAGE.—Man dies but nature is eternal. The seasons keep their appointed time; day returns with its golden splendor, and night with its eloquent mystery. The same stars that lit the ghastly battle fields of Troy, rough heroes—which shone on the marble streets of Rome, and on the sad eyes of virgils sleepers in the living glow of inspiration—the watch fires of the angels which, through centuries of devastation and change, have still burned on unceasingly, speak to us as they did to Dante and Shakespeare and Milton of the divine glory the omnipotence, the everlasting beauty and love of God.

"PRIDE was not made for man." This accursed root of bitterness seemed to be the sin that spoiled all the glory of the Christian Church, whose professors, proud of their own spiritual gifts and outward acquirements, were led to look with contempt upon the unaffected simplicity of the gospel. The doctrines of the cross, and of a crucified Redeemer, were subjects mortifying to the pride of their lofty hearts, which wanted nicer doctrines, nicely decorated with all the smooth and pleasing varnish of eloquence and art.—*Rowland Hill.*

An old lady writing to her son warns him to beware of billious saloons and bowel alleys.

YOUNG FOLKS' COLUMN.

The Listeners.

Two city boys lost their way in the woods, and late at night took shelter in a solitary inn.

At midnight they awoke, and sitting up in bed, heard some one talking in the next room.

The boys put their ears to the wainscot, and distinctly heard a voice say,—

"Wife, get the big kettle ready to-morrow, for I mean to kill our two young rogues out of the town."

The poor boys shuddered.

"O, dear, this innkeeper is a cannibal!" they whispered softly to each other, "What shall we do?"

After a moment's thought, they got out of bed, and sprang out of the window, hoping to escape that way. But one of them hurt his foot so badly in jumping, that he could go no farther; and besides, the great door of the yard was locked. So they crept into the pig-sty with the little pigs, and lay there trembling till morning.

In the morning came the innkeeper. He opened the sty door, sharpened a knife, and called out,—

"Now, you little rascals, out with you; your last hour has come."

Both boys set up a cry of horror, and begged on their knees to be spared.

The man was surprised to find them in the pig-sty, and asked them why they thought him a murderer.

The boys sobbed out,—

"Because we heard you say in the night that you would kill us in the morning."

Then the innkeeper laughed and said,—

"O, you silly boys! I never meant you. I was talking of my little pigs, who in a joke I always call my little rogues out of town, because I bought them in town. But so it always is with listeners; as the rhyme goes,—

"Put your ear to the door or wall
You will hear no good at all."

Be Courteous to Children.

Children feel the lack of due consideration for their feelings as acutely as their elders—often more so. Such advice as follows, though it ought not to be needed, is sound:

You treat a child as if you know he was bad and hard to manage, is a pretty sure way to make him so. Treat him as if you expected good behavior from him. Be courteous to him. Show the greatest love and consideration for him in your whole treatment of him.

Never laugh at the crudeness and strangeness of any idea which he may express. Children are very sensitive. And when the child has done the best he can, and opened his thoughts to you, make most of everything he says. If he is incorrect, gently lead him to the right idea; but on no account ridicule him, or allow the other pupils to do it. If you do, there is great danger that the child's mind will ever after be a closed book to you. He will be afraid to tell you his thoughts.

Children are very ready to be influenced by the Golden Rule. And they are very quick to see, also, what the Golden Rule requires of them toward each other. And they will love and respect you a great deal more for showing a kind and courteous spirit toward them, and urging them to show toward each other. Perhaps they would not know what the word "courteous" means, in many cases, but they would feel its meaning in your manner, even though they might not be able to put it into words.

The air and manner you show to children will be reflected by them, as a general thing. If you would have them courteous and well-behaved, be very strict yourself in treating them courteously. By so doing you cultivate their self-respect.

HE CAN DO LITTLE WHO CAN'T DO THIS. Arrange yourselves in a circle. The one who knows the game takes a cane in his left hand and pounds upon the floor with it, saying: "He can do little who can't do this," and passes the cane with his right hand to his right-hand neighbor, who tries to do the same thing, but generally fails. The catch consists in quickly changing the cane from the left to the right hand before passing it. Everyone is then intent on your manner of pounding the cane on the floor. Change hands as carelessly as possible.

DOMESTIC ECONOMY.

A Few Things Worthy of Consideration.

[By our RURAL Housekeeper.]
Talking.

I suppose there are people in California from every State in the Union, and almost every nation under the sun; but it is not of foreigners I am about to write; their language will not hurt us unless we mix it up promiscuously with our English, when pure English would do better. But the immigrants from the Eastern, Western, Southern and Middle States have all brought their special provincialisms, pet "by words" and slang phrases with them; to say nothing of the continually recurring sentences which at least are not grammatical. In the reckless early days, I believe every odd saying was hailed with rapture and gentlemanly speech was held in no more reverence than was the "stovepipe hat and white shirt" of those days.

Now Californians are becoming more sedate, and children are growing up who should be taught to speak correctly. So we have a double duty, to guard ourselves and help the children also; for at school they often meet playmates who have not been carefully trained, who catch every new word however objectionable and repeat it with emphasis and self satisfaction.

These vagaries of speech have all the charm of perfect newness to the little Harry and John who have been "brought up in the way they should go;" their mothers may well be startled to hear such words in their mouths, but it is sadder still if they begin to swear. Then nestle them closely and teach them kindly, beginning with "Swear not at all," and so on until "But let your communication be yea, yea; and nay, nay; for whatsoever is more than these cometh of evil." The lesson may have to be repeated many times, and if the mother's health be broken, how hard it is to have patience. First then, mothers, we should keep our health if possible, or if it be already broken, improve it by attention to good habits of living and eating.

Plain Food,

Of which there is very little cooked now-a-days, if we can take for a sign the receipts generally contributed to Ladies' Magazines and family papers; it fairly makes me shiver to read them. Some of them actually tell us to put lard and eggs in brown bread, when you can make such healthy, tender brown bread by taking two large cups of sour milk, one pint Graham flour and nearly as much corn meal, four large spoonfuls syrup and teaspoon of soda; boil or steam five hours; put it on some morning when you are to have a fire all the forenoon, as on ironing or washing day.

If you have company don't fear to put it on the table. One minister said to me, "I never get brown bread or cracked wheat any where but here." Now, don't be afraid to give them brown bread; why, they seem to like it!

The papers tell us to put beef suet into corn meal pudding, and mince pies; now, don't do it; don't put suet or lard into anything you can keep them out of. When in the RURAL Press of Aug. 10th, I read Mrs. Michener's receipts for pie crust and ginger cake, I felt like stretching my hand out toward "somewhere" and saying, "Shake hands, Mrs. Michener, please."

I have made such pie crust for a number of years, only I use two-thirds Graham instead of all fine flour. We have no cow, but I manage to save two spoonfuls of cream each day from milk we buy, so when baking day comes I can make a few healthy pies. Just here I will tuck in a receipt for a nice

Peach Pie.

Put crust on plate as you would for custard pie; pare and pit your peaches; Indian or yellow peaches are best; put them in a pan with one cup sugar and heaping tablespoon of flour for each pie; then cut fine with a knife. By the time they are cut the flour and sugar will be thoroughly mixed with them; pour into the crust and bake without upper crust.

The ginger cake is more healthy than dough-nuts, and to those who live in a village as I do, I would say, you can make it with half cup cream and half cup sour or buttermilk. But bear in mind my general rule, don't put in lard. I declare I wish every pig was living on some unknown island and that it would remain unknown until people found out how much better off they would be

Without Pork,

For I believe it to be objectionable and hurtful. Many of the commandments given to Moses, Christians feel themselves bound to keep; but the commandment forbidding the eating of swine they do not pretend to keep or even to think of. And when scientific men expose the utter badness of the majority of pork, they cry out, "Cook it enough; only cook it a long time and it won't kill you if it is abominable." Others say we cannot get along without our nice baked pork and beans. But let them try beef with beans, a piece of fresh beef with salt as for soup, or salt beef freshened a little.

Parboil beans and then bake as you would if it were pork.

Now, farmers, is it not practicable for you to raise cows, sheep, turkeys, and chickens for your own eating and market, instead of swine? I suppose you have all read what Russia threatens to do about the western "hams" which have been sent to that country. I wish something could be done to cure every one of their liking for hogs.

Coffee and Tea.

In addition to eating plain food at regular hours, I think we should be better without tea or coffee. I have not used either for a number of years. Dio Louis' rules, permit a little weak coffee—SCIENTIFIC PRESS, June 15.

Sleeping.

Go to bed regularly at nine o'clock, Providence permitting. I do not like to follow this rule sometimes, when I have a particular bit of work to finish, but I find it is best to follow it, especially as I have to rise about five o'clock in the morning, and I think it would be for the health of other hard-worked mothers also. And next to this, air and sun your rooms, and keep in the

Open Air

Whenever your work can be taken there. Calling on a neighbor one day I found her with sewing machine and work basket out on the porch. Another had a quilt in frames in the yard, and was quilting under the trees, as happy as the birds overhead. I thought it a good idea, and took note accordingly. Walking and riding in the open air you know is good. Now to the men; if your wife ought to keep her health so that she can be kind to you and the children, you ought to keep yours so that you can be kind to her.

L. J. D.

True French Rolls.

We condense the following, by Egbert P. Watson, from *Wood's Household Magazine*: I suppose there are not many housekeepers or individuals who have ever eaten French rolls, or French bread, but have noticed the difference between them and ordinary rolls and domestic bread, and wondered how they were made so light, so soft, so crisp, so nicely rounded, so finely browned, and so altogether lovely. They have broken the crackling crusts; have rent the filamentous or fiber-like interior; have eaten a goodly portion thereof, and gone away wishing they could obtain it at all times. If they lived in the city, these suppositious personages, they did obtain it; but if they lived in the country they went mourning all their days, and would not be comforted because rolls were not.

The invalid with weak digestion turned heavy-hearted from ordinary household loaf, which is too often half-fermented, half-worked, half-raised, half-baked, and wholly uneatable. The good housekeeper justly proud of her white and well-made bread, wishes to exercise her skill or taste but who in setting before her guests something different, will find the following recipe, if strictly followed, will make the French roll attainable.

Neither Eggs, Butter or Milk.

The only fear is that but few will follow the course specified. It is all very well to say to the novice, do thus and so—simple manipulations with common materials—but the novice won't do it. Some preconceived opinions, or methods, have taken possession of the mind; and drawn by them, while making, follow the rule given, the result, so far as the new recipe is concerned, is a failure. You might as well attempt to teach a child to tie a double bow-knot at the first trial, as to make an experimenter, as a general thing, follow exactly as you dictate. The child takes hold of the string all right, and places its fingers all right, but in the critical period of passing it under or over one or the other, the ends get misplaced, the fingers slip off, and limp and lax the knot fails of its union. So at the last moment the recipe fail. "What! no eggs, nor butter, nor milk, in rolls! That won't make anything. I'm not going to waste my flour and time in these silly newspaper recipes, that never were of any value;" and so straightway she tries the receipt in her own way and it fails.

Since bakers would not reveal the secret, and no "cook books" knew anything about it, of course I had to find out for myself. If you take up any of the cook books and turn to "Rolls," you will find this:

"FRENCH ROLLS.—Take a quart of dough, two eggs, half a cup of butter and one of milk," etc., etc., etc.

I don't write any more, because that is all rubbish. That is cake, not bread, and has no resemblance to a French roll, or French bread, but flour, salt water, potatoes and yeast.

You can make a biscuit, or a rusk, or anything you please, out of fermented dough; but a roll is neither of the above, but peculiar to itself; but this is the only way to make a genuine French roll:

The Way to Make It.

Take two potatoes, ordinary size, and boil them—peel them first. Then mash these in the water they were boiled in. All told, this should make about a pint of potato and water like a thin gruel. Stir in this, flour enough to make a stiff sponge; make it rather thicker than usual; and when it has all cooled well, put in half a cup of bright, sparkling yeast. It is absolutely indispensable that the yeast

should be lively, quick-working, and not sour.

Without this it is useless to ever undertake to make good bread. Let this rise three hours. If it is not light by this time, let it rise until it is; but if not raised in five hours, you must get better yeast and try some other time. When light, stir it briskly—as if you were beating eggs; then stir in flour enough to make a dough as stiff as you can stir with a spoon.

Put it away to rise again—which ought to take three hours more—and at the end of that three hours knead it again. This is the way you must knead it, and this is where you will fail, at first. You can't "get the hang of it," and will be very apt to give it up in disgust and say: "Pooh! that's all nonsense, anyway, so much fuss for a little bread;" unless you have good sense, and say rather, "Nothing is 'fuss' if it tends to the increase of human knowledge."

The Kneading Process.

Turn the dough all out on a table well rubbed with flour, (you are not to mix any more flour in the dough,) so that it will not adhere; and then roll it over and over (as if it was a rolling-pin) until it is a long cylinder of dough; cut it into convenient pieces for handling, say the length of your arm; hold one end in your left hand and roll the other over and over, as if you were twisting a thread or cord on your knee. When the mass becomes too long to handle, double it over on itself and proceed as before. After kneading in this way ten minutes, put the dough all back in the pan to rise again.

Here is where you are sure to fail again: You cannot by any possibility allow that dough to rise enough. You will miss it the first time, possibly, overraise it the second time, and give it up entirely, unless you stick to it until you conquer. If you are a true woman, you won't allow a mass of dough to "get the better of you." The vinous or winy flavor of French bread is due to the presence of alcohol developed by the fermentation of the starch in the flour and potatoes added to it; and it is necessary to carry the fermentation to this vinous point to have the extreme lightness and delicacy of crust and color that characterize it; and this is only determined by experience and the sense of smell. Your dough, at the second rising, will give forth so strong gas on being taken up, as to make one throw the head back; and at this point you are to form it into rolls, by cutting off portions from the mass, doubling them, like shutting up a book, so as to imprison a portion of air, and then moulding them gently into shape with the hands, in an oblate manner. Make them as nearly of one size as possible, and put them on the table to rise again. Do not cover them up with anything—let them stand just as they are. When fully risen—to obesity, in fact—give them a cut in the middle with a well-buttered knife, and put them in the oven—a hot oven—and bake them for a quarter of an hour.

The Vienna Exposition.

The people of the United States do not seem to attach as much importance to the great World's Exhibition at Vienna, in 1873, as do other countries. This is illustrated in the apathy on the part of the press generally, to encourage and induce Americans to exhibit there, and by the fact that every nation but the United States has already overrun the space allotted to them and are applying for additional accommodations. The importance of this exhibition to American merchants, mechanics, manufacturers and inventors is much greater than many suppose, and it will be first, and perhaps the only opportunity for some time, in which they can introduce their goods, inventions and manufactures to the notice of the people of Eastern Europe and Western Asia. Russia, Turkey, Greece, Egypt, and all the older agricultural nations show a very laudable desire to become acquainted with the latest improvements in labor-saving machinery of all kinds, and the World's Fair affords the most excellent opportunity to our people for extensively advertising their wares and coming in for their share of the profits. Leaving aside considerations of national pride in the exhibition we could make, the idea of being materially benefitted by it ought at least to cause our usually enterprising people to take a more active part. Every facility will be afforded to exhibitors, not only to show their goods but to sell them if they desire.

The circular issued by the United States Commissioner gives assurance that no charge will be made by him or his assistants further than that exhibitors will be expected to pay the expenses of transportation, unpacking and placing on exhibition, storing boxes, repacking, reshipping and insurance. Arrangements are in progress by which some reduction on freight will be made. The Governments of Europe have all appropriated large sums of money.

Our Government has not been very generous in the matter since when the Commissioner was appointed, a proviso was made that no expenso was to be incurred by the Government. Taking into consideration that at our proposed Centennial Exposition in 1876, we desire European nations to be properly represented so as to make it a success in every particular, we should most assuredly pay more attention to the World's Fair there, so that if no other motive exists for them to come here, then they will at least do so to return the compliment. We have heretofore given a sketch of the proposed exhibition and it is to be hoped that American industry, science, art and education will be fully represented.

Growing Walnut Trees—Transplanting.

Henry A. Broad, McLean County, Ill., gives the N. Y. Tribune the following statements concerning his experience in growing walnut trees from the seed. The subject of forest tree growing is becoming so important that many readers will gladly welcome all such information. Mr. B. says:

I came to this State fourteen years ago, and not wanting to be blown away by every high wind, I immediately planted trees and walnuts. Now some of the trees from the nuts then planted are seven inches in diameter, and they are tall enough to make three post cuts, and I am not much afraid of high winds. I live eight miles from the nearest body of natural timber.

My mode of proceeding to raise the trees is to gather the nuts as soon as they fall, and scatter them evenly on the ground until the shells are dry or rotten enough to drop off. I then bury the nuts in naturally dry ground, from three to six inches thick, covering them with six inches of dirt. In the spring, as soon as it thaws out, I take up the nuts and plant them out immediately on land previously prepared by careful plowing and harrowing, and marking in checks four feet apart, as for corn.

It cost a little less to tend the trees than it does to tend the same amount in corn. I should say one nut in each check. If any fail to come up, replant the next year. It is very necessary to plant the nuts as soon as the frost leaves the ground, as the nuts start immediately. My experience has been that tree growing where the nuts were planted will in five years' time be five times as large as transplanted trees of the same age. Care and cultivation being alike, I have trees which last year made four feet of growth, while trees of the same age transplanted did not make three inches of growth.

Mode of Culture.

The object in planting so close is for several reasons. In the first place, it is easier to follow the row with a horse in plowing, when they are planted close, than when planted far apart. In the second place they much sooner shade the ground, and so obviate the necessity of cultivating the ground. In the third place, they grow straight, which is of prime importance, and also grow much faster, as they then send out but a few side branches—a thing that walnuts are sure to do if not planted close.

The proper mode of culture, and which pays the best, is to hoe them as soon as they are two or three inches high, and then plow them and keep the weeds down thoroughly. In about three years they are large enough to shade the ground, and are then able to take care of themselves. The trees will begin to bear nuts in about ten years. Any one who follows these directions will, in ten or fifteen years, have an amount of first-class timber that will net more money and satisfaction than any other crop that could have been raised on the land.

The thinning out of the trees, when they begin to crowd each other too much, will bring in considerable income, but they should not be thinned out until they begin to overshadow each other, when the smallest and most weakly should be taken out. If any transplanting is to be done, it should be done when they are one year old, but in filling up a gap, a nut planted will fill up the gap much sooner than a transplanted tree, as the tree recovers very slowly.

Transplantation a Fallacy.

So much has been said by nurserymen in favor of nursery-grown and transplanted trees as compared with those not transplanted, that Mr. Broad's testimony in favor of seedlings rather surprises me. The seedling has been decried as greatly wanting in fibrous roots, and the belief is quite general that to insure success, frequent transplantings are important, if not necessary. Yet here is a practical grower who prefers not to transplant at all!

The explanation, probably, is this: Where a man can plant tree seed of any kind exactly where he wishes it to grow, he will gain by so doing, as in Mr. Broad's case. But many wish to grow forest trees without the trouble or delay of growing them from seed, concerning which they know little or nothing, and they must buy trees, and transplanted trees are their only resource; hence in order to have these succeed, they should have been transplanted several times in the nursery, so as to insure them against the dangers of a seedling with its few straggling roots and long tap. Is not that correct? I hope some nurseryman will answer; and also, while he is about it, tell how often a tree must be transplanted before it will be vigorous enough to keep pace with the growth of a seedling which has never been transplanted. S. P., in Country Gentleman.

PETROLEUM.—The supply of petroleum is so great that the oil men of Pennsylvania propose shutting down the wells and suspending drilling, so as to decrease it. The production has reached over 18,000 barrels per day, and is increasing. This excessive supply has caused such a decline in prices that the business is becoming unprofitable. A number of wells have already been closed. It seems strange that with the enormous consumption of this article throughout the world, there should be so great a surplus as the action of the owners of the wells indicate.

[Continued from page 213].

Hamilton, San José, for Ethan Allen, Jr., and colts; \$75.

Best dam other than thoroughbred, with not less than three of her colts, Wm. M. Haynie, Sacramento, for Sacramento Belle; \$50.

Class II.—Graded Horses.

STALLIONS.—Best four-year old and over, C. P. Marsh, San José, for High-Die; \$50.

Best three-year old, Alexander Ely, S. F., for Inauguration; \$40.

Best one-year old, D. M. Reavis, Chico, for Blackbird, Jr.; \$20.

Best colt under one year, without reference to sex, Wm. Hamilton, San José, for Fanchon; \$20.

MARES.—Best four-year old and over, with colt, William Hamilton San José, for Winona; \$5.

Best three-year old, Wm. Hamilton, San José, for Jennie Allen; \$20.

Best two-year old, William Hamilton, San José, for Trumps; \$20.

Best one-year old, D. M. Reavis, Chico, for Flora; \$15.

Class III.—Horses of All Work.

STALLIONS.—Best four-year old and over, Joshua Reeves, Lincoln, for Vibrator; \$40.

Best three-year old, George Verrinder, Latrobe, for Honest John; \$30.

Best two-year old, S. L. Munday, Cacheville, for Yolo Bill; \$20.

Best one-year old, G. M. McWain, Marysville, for Jim; \$15.

MARES.—Best four-year old and over with colt, G. M. McWain, Marysville, for Julia Ann; \$40.

Best four-year old and over, Michael Nicholson, San José, for Kate; \$30.

Best three-year old, John H. Jackson, Cacheville, for Kate Sportsman; \$20.

Best two-year old, W. M. Haynie, Sac., for Camilla Urso; \$15.

Best one-year old, S. L. Munday, Cacheville, for Dolly Martin; \$10.

Class IV.—Draft Horses.

STALLIONS.—Best four-year old and over, R. A. Branton, for Giant Judge; \$40.

Best three-year old, J. M. Dudley, Dixon, for Robert Bruce; \$30.

Best two-year old, C. M. Taylor, Cosumnes, for Excelsior; \$20.

MARES.—Best four-year old and over with colt, Chris. Shott, Dixon, for Kate and Colt; \$40.

Best three-year old, J. A. Evans, Mayhew's Station, for Mary; \$25.

Class V.—Roadsters.

STALLIONS.—Best four-year-old and over, D. M. Reeves, Chico, for Blackbird; \$50.

Best three-year-old, J. D. Carr, Gavilan, for Membrino, Jr.; \$40.

Best two-year-old, Daniel Flint, Sacramento, for Bloudin; \$30.

GELDINGS.—Best four-year-old and over, Eugene McCarthy, S. F., for Westfield; \$40.

MARES.—Best four-year-old and over, J. Sessions, Brooklyn, for Young Oakland Maid; \$40.

Best three-year-old, Wm. Hamilton, San José, for Bessie Allen; \$30.

Best two-year-old, Wm. Hamilton, San José, for Fanny Allen; \$20.

Class VI.—Carriage Horses.

Best match span carriage horses, owned and used as such by one person, E. Wilson, San Francisco, for Brown George and mate; silver goblet, worth \$40.

Class VII.—Roadster Teams.

Best double team roadsters, owned and used as such by one person, J. S. McCue, S. F., for Olin and Magna Charta; silver goblet worth \$40.

The committee on this class reported in favor of giving a special premium to Gallagher of Santa Clara, for his span of matched grays, they, by some oversight, not having been entered on the premium list. Also, a special premium to J. M. Garoutte of Woodland, for his matched team of yearlings. In both these recommendations the society coincided and the premiums were awarded accordingly.

Class VIII.—Saddle Horses.

Best saddle horse, Thomas Showler, Sac., for Rockland; fine bridle.

Class IX.—Colts.

Best yearling horse colt, G. M. McWain, Marysville, for Jim; \$30.

Best sucking horse colt, L. H. Fassett, Sac., for Rusher; \$20.

Best yearling mare colt, John Neal, Sac., for Flora; \$20.

Best sucking mare colt, G. M. McWain, Marysville, for Maggie; \$15.

Best exhibit of not less than three, owned by one person, of any age or sex, Wm. Hamilton, San José, for six colts by Ethan Allen, Jr.; \$50.

Class X.—Sweepstakes.

Best stallion of any age, Nathan Coombs, Napa, for Lodi; silver pitcher, worth \$100.

Best mare of any age, A. Mailliard, San José, for Hennie Farrow; silver pitcher, worth \$100.

CATTLE.—Class I.—Thoroughbreds.—Durhams.

BULLS.—Best four-year old and over, Coleman Younger, San José, Glencoe; \$75.

Best three-year old and over, L. Pierce, S. F., for Daisy Duke; \$40.

Best two-year old and over, G. R. Vernon, San José, for Dandy-Jim; \$30.

Best one-year old and over, Wm. L. Overhiser, Stockton, for 4th Grand Turk of Oak Home; \$25.

Best bull calf, L. Pierce, S. F., for California Darlington; \$15.

Cows.—Best four-year old and over, G. N. Sweezy, Marysville, for Beauty; \$50.

Best three-year old and over, Coleman, Younger, San José, for Peggy 1st.; \$40.

Best two-year old and over, Coleman, Younger, S. F., for Norma; \$30.

Best one-year old and over, Wm. L. Overhiser, Stockton, for Flora Temple 6th; \$20.

Best heifer calf, L. Pierce, S. F., for Oxford Bride; \$15.

Devon Cattle.

BULLS.—Best four-year old and over, J. R. Rose, Lakeville, for Bloomfield; \$75.

Best three-year old and over, J. R. Rose, Lakeville, for Phil. Sheridan; \$40.

Best two-year old and over, J. R. Rose, Lakeville, for General Sherman; \$30.

Best one-year old and over, Wm. Fleming, Napa, for Earl of Leicester; \$25.

Best bull calf, J. R. Rose, Lakeville, for no name; \$15.

Cows.—Best four-year old and over, J. R. Rose, Lakeville, for Curly; \$50.

Best three-year old and over, Wm. Fleming, Napa, for Victoria; \$40.

Best two-year old and over, J. R. Rose, Lakeville, for Curly 3d; \$30.

Best one-year old and over, J. R. Rose, Lakeville, for Nellie; \$20.

Best heifer calf, J. R. Rose, Lakeville, no name; \$15.

Alderneys and Jerseys.

BULLS.—Best four years old and over, John Cooney, San José for Brian Boru; \$75.

Best three-year-old and over, Wm. Johnston, Richland, for Billy; \$40.

Cows.—Best Jersey heifer, P. L. Weaver, Napa, for Amelia.

A special premium was awarded to C. B. Polhemus of San José for his Jersey Bull Prince Albert. Also one to P. L. Weaver of Napa, for Solace, a bull of the same breed.

Ayreshires.

Cows.—Best two-year old and over, L. A. Jason, Sac., for Flora McVior; \$30.

Class II.—Graded Cattle.

BULLS.—Best three year old and over, R. Ashburner, San Mateo, for Water Prince 1st; \$30.

Best two-year old and over, J. B. Hobson, Auburn, for Billy; \$20.

Best one-year-old and over, G. N. Sweezy, Marysville, for Prince of Yuba; \$15.

Best bull calf, Cox & Clark, Sac., for Sacramento; \$10.

Cows.—Best four-year-old and over, G. N. Sweezy, Marysville, for Kate; \$30.

Best three-year-old and over, R. Ashburner, San Mateo, for Roany; \$15.

Best two-year-old and over, Charles Clark, Milpitas, for Kate Hayes; \$15.

Best one-year-old and over, L. Pierce, S. F., for Bessy; \$10.

Best heifer calf, Charles Clark, Milpitas, for Dolly Varden; \$5.

Best herd of cattle, not less than ten, of any one breed, owned by one person, L. Pierce, S. F., for Lord Isabeau and herd; \$150.

M. Wick, Oroville, was awarded a special premium of \$150 for his herd, led by the thoroughbred Durham bull Crown Prince. And the committee recommended a special premium to J. R. Rose, for his herd of Devons. Recommendation adopted and premium awarded.

Class III.—Cattle Sweepstakes

Best bull of any age or stock, L. Pierce, S. F., for Lord Isabeau; silver pitcher, worth \$100.

Best cow of any age or stock, Coleman Younger, San José, for Sprightly; silver pitcher, worth \$75.

Best bull and five of his calves under one year, M. Wick, Oroville, for Monkey John and five calves.

Special premiums were recommended to Younger's Glencoe, Chambers' Aidrie Lad, and Sweezy's First Duke of Yuba and their calves.

CLASS I.—FINE-WOOL SHEEP.

Best Spanish Merino ram, two-years old and over, Thomas Cotter of Elk Grove, for Green Mountain; \$30.

Best Spanish Merino ram under two years, Smith & Overhiser, Grayson, Comet; \$20.

Best three Spanish Merino ram lambs, Thos. Cotter, Elk Grove; \$20.

Best five Spanish Merino ewe lambs, Smith & Overhiser, Grayson; \$20.

Best French Merino ram, two years old and over, Smith & Overhiser, Grayson; \$20.

Best French Merino ewe, two years old and over, R. A. Branton (pen of three); \$20.

Best Silesian sheep, Robert Beck, three ewes, two years old and over; \$20.

CLASS III.—LONG-WOOLLED SHEEP.

Best ram two years old and over, Wm. Fleming, Napa, Patriarch; \$50.

Best ram under two years, Wm. Fleming, Napa, Zadoe; \$40.

Best five ram lambs, Landrum & Rodgers, Watsonville; \$50.

Best three ewes, two years old and over, Landrum & Rodgers, Watsonville; \$50.

Best three ewes under two years, Wm. Fleming, Napa; \$30.

Best ten ewe lambs, Landrum & Rodgers; \$50.

Best Leicester ram two years old and over, W. S. Wilson, Elk Grove; \$40.

MEDIUM-WOOL SHEEP.—Best stock and mutton sheep—Best three Southdown rams, recommended for special premium.

Best pen of eight graded wethers and best

pen of four Southdowns of stock and mutton sheep, recommended for special premium.

GRADED SHEEP.—Best ram under two years (Leicester cross), W. S. Wilson, Elk Grove; \$20.

Best three ram lambs (same cross), H. A. Rawson, Red Bluff; \$20.

Best three ewes two years old and over (Leicester and Cotswold cross), H. A. Rawson; \$20.

Best ram of Spanish Merino cross, two years old and over, W. S. Wilson, Elk Grove; \$20.

Best ram same cross, under two years, H. A. Rawson, Red Bluff; \$15.

Best three ewes, same cross, two years old and over, T. W. Wilson, Elk Grove; \$15.

Best three ewes, same cross under two years, W. S. Wilson, Elk Grove; \$15.

Best five ewe lambs, same cross Charles H. Watt; \$15.

Best three ram lambs, same cross, H. A. Rawson, Red Bluff; \$20.

CLASS IV.—SWEEPSTAKES.

Best ram of any age or breed, Smith & Overhiser, Grayson; \$75.

Best ewe of any age or breed, Smith & Overhiser, Grayson, 516; \$50.

CLASS I.—CASHMERE AND ANGORA GOATS.

GOATS.—Best thoroughbred buck, N. Gilmore, El Dorado, Sultan 2d; \$50.

Best thoroughbred ewe, Thomas & Shirland, Placer (four does); \$40.

Best pen of five kids, N. Gilmore, El Dorado; \$40.

CLASS II.—GRADES.

Best buck and ten of his kids, Landrum & Rogers, Watsonville; \$75.

Best pen of ten belonging to one owner, Thomas Butterfield & Son, Hollister; \$40.

SWINE.—Best boar two years old and over, R. S. Thompson, Napa, Excelsior; \$50.

Best boar under two years, M. Wick, Oroville; \$20.

Best boar six months and under one year old, R. S. Thompson, Napa, No. 2; \$20.

Best breeding sow two years old and over, R. S. Thompson, Napa, America; \$40.

Best sow six months and under one year old, R. S. Thompson, Napa, for Dolly Varden; \$20.

Best pen of six pigs five months and under ten months old, R. M. Sparks, Marysville; \$40.

Best breeding-sow over one year old, Cannon & Staples, Suisun, for Snie; \$30.

Best pen of ten pigs of any age or breed, owned by any one person, James Freepert, for pen of Essex and Berkshire cross; \$50.

POULTRY.

There was but one exhibitor in this class, Peter Burns, of Sacramento, who had some geese, ducks and chickens of several varieties on exhibition, and the premiums of the classes named in the schedule were awarded to him.

GOLD MEDAL CLASS.

Colonel Coleman Younger was awarded the Society's gold medal for having the most meritorious display, of any kind, on the ground.

The following awards were made at the Pavilion in the evening:

Second Department.—Class I.

MACHINERY, ENGINES, ETC.

Treadwell & Co., S. F., best display of agricultural machinery (Cal. manufacture); \$50.

Baker & Hamilton, Sac., best portable and stationary engine (Eastern manufacture); diploma.

Treadwell & Co., S. F., best portable engine, Hoadley's patent (Eastern manufacture); diploma.

James Cummings (Ione City, best turbine water-wheel (Cal. manufacture); \$25.

Waterhouse & Lester Sac., best tenoning machine for spokes, Dole's patent (Eastern manufacture); diploma.

E. S. Squires, Sac., best model engine; special premium.

C. B. Brown, Placerville, best self-generating gas-burner; diploma.

R. Haskins, Dutch Flat, best hydraulic pipes, "Little Giants;" silver medal.

O. J. Backus, S. F., combined water-wheel and sewing machine; diploma recommended.

CLASSES II AND III.

Treadwell & Co., S. F., best thrasher and separator machine of Eastern manufacture; diploma.

J. M. Betts, Sac., best seed-sower and cultivator combined; \$10.

T. C. Churehman, Sac., best sweep-horse powder, California manufacture; \$10.

C. H. Hubbard, Sac., best hay-press; California manufacture; \$20.

Baker & Hamilton, Sac., best straw-cutter and two-horse cultivator; a diploma for each.

E. F. Aiken, Sac., best one-horse cultivator; diploma.

Mattison & Williamson, Stockton, best two-chieled cultivator; diploma.

R. Jones, agent for Keller & Co., Sacramento, best plowing machine, "Excelsior;" best tubular harrow; diploma for each.

W. H. McBurney, Sac., model hay press, "Little Giant;" diploma.

Treadwell & Co., S. F., best horse rake, "Ithaca;" diploma.

Thomas Orchard, Sac., best well auger, California manufacture; diploma and \$5. Best post auger, California manufacture; \$5.

F. B. Stevens, Sac., best set of pruning knives; diploma.

Treadwell & Co., S. F., best lawn mower.

CLASSES IV AND V.—MACHINES, TOOLS AND IMPLEMENTS.

Atwood & Bodwell, S. F., best farm feed-mill, California manufacture; \$10.

M. S. Bowdish, S. F., best self-regulating windmill; \$15.

Huntington, Hopkins & Co., Sac., best platform scale; \$5.

M. Barthel, Sac., best farm gate, California manufacture; \$15.

J. S. Harbison, Sac., best beehive without bees; \$3.

Charles E. Johnson, S. F., best portable fence; \$20.

Nash, Miller & Co., Sac., best grain separator; diploma.

S. Cole, Gilroy, Santa Clara Co., best cheese press.

E. Groat, Napa City, best churn, diploma and \$10; best butter-worker, \$5.

B. F. McCombe, Eureka, best washing machine; diploma and \$5.

M. R. Rose, Sac., best deep well force pump; \$10.

A. McCall, Saratoga, best tule-cutter plow; special premium recommended.

J. C. Bowden, Farmington, model of grain separator, California manufacture; diploma.

John A. Ball, Grass Valley, best elevator or water-lifter by hand-power; special premium recommended.

S. A. West, S. F., best steam pump of California manufacture; \$20.

Treadwell & Co., S. F., Blake's patent tank steam pump, Eastern manufacture; diploma.

E. M. Tyler, Dixon, Solana Co, best fly-trap, Harper's patent; honorable mention.

E. L. Brooks, Bodega, model of farm gate; diploma.

CLASS VI.

W. B. Ready, Sac., best two-gang plow; \$40.

Myers & Gummow, Marysville, best plow for general purposes; \$10. Best subsoil plow; \$10.

Baker & Hamilton, S. F., best stubble plow; \$10.

CLASS VII.

Pollard & Carville Manufacturing Company, S. F., best two-horse family carriage; diploma and \$30. Best one-horse family carriage; diploma and \$25. Best one-horse top buggy; diploma and \$20. Finest display of carriages; special premium recommended.

Henderson & Clark, Stockton, best trotting wagon; diploma and \$15. Best set of carriage wheels; \$10.

Kimball Manufacturing Co., S. F., fine display of carriages and buggies; diploma recommended.

J. A. Mason, Sac., good display of carriages and buggies; diploma recommended.

W. P. Miller, Stockton, for a fine trotting wagon; diploma recommended.

Joseph F. Hill, Sacramento, best farm wagon, California manufacture; \$15.

Studebaker Bros., Sacramento, Best display of farm wagons, Eastern manufacture; special premium recommended.

Waterhouse & Lester, Sacramento, Best display of hubs, spokes and felloes.

Third Department—Class I.

Wm. Sharp & Co., Sac., Best exhibition of carpets and rugs; special premium.

Mrs. J. H. Haskell, Sac., Best pair knit stockings; \$3.

Mrs. S. M. Hoover, Elk Grove, One pair knit stockings; special premium recommended.

Mrs. H. Kuhl, Sac., Best pair knit drawers; \$5.</

Mrs. L. Staudeman, Sac., Best pair ladies' gaiters; \$3.

Mrs. L. Staudeman, Sac., Best pair ladies' slippers; \$3.

Mrs. L. Staudeman, Sac., Best pair ladies' boots; \$3.

P. Mangle, Stockton, Best display of men's boots, shoes and gaiters; silver medal.

Mrs. L. Staudeman, Sac., Best display of ladies and girls' boots, shoes and gaiters; silver medal.

Huntington, Hopkins & Co., Sac., Best display of rubber hose and belting; silver medal.

C. H. Krebs, Sac., Best display of paper-hangings and borders; \$5.

H. S. Crocker and Co., Sacramento, Best display of bound account-books; silver medal and \$5.

CLASS III—WAX WORK AND PRESERVED NATURAL FLOWERS.

Madam Anna Getz Lucas, San Francisco, Best preserved natural flowers; silver medal. Statuary; \$10. Wax flowers; \$10. Wax fruit; \$5. Confectionery, oysters, etc., in wax; special premium recommended. Wax cross; special premium recommended. Autumn leaves; special premium recommended. Exotic leaves; special premium recommended. Largest variety of wax fruits; special premium recommended.

Owing to the press of important matter we are obliged to defer the publication of the balance of awards until our next issue.

A portion of our editorial report will be found on page 214. We were unable to find many exhibitors from whom we wished to obtain information, and we wish those who have facts of general interest regarding their display at the Fair, to send them to our office. It is our desire to do full justice to all.

OAKLAND FARMING, HORTICULTURAL AND INDUSTRIAL CLUB.—At the meeting on Friday evening, Oct. 4th, Mr. Montandon will conclude his interesting essay on the practical culture of fruit trees. Delegates to the State Farmers' Club will speak concerning the convention and the organization of the "California Farmers' Union." All interested are invited.

Correspondence.

M. GRAY—Dear Sir—The Burdett Organ purchased through Mr. Lowell, of this place, has given entire satisfaction. The Organ recommends itself particularly, as it has passed through our hot weather (thermometer 110° in the shade) without a crack to music or case. You are at liberty to use my name, and I shall not fail to recommend the Burdett whenever I am able.

Yours truly,

C. BURDET.

Sonora, Sept. 3, 1872.

Feminine Beauty!

Persons of refined and cultivated tastes generally accept it as a fact that the use of delicate perfumes idealizes and augments the charms of feminine beauty. How important then that every lady should have on her toilet table that best of all perfumes, MURRAY & LAMMAN'S FLORIDA WATER.

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San Francisco Metal Market.

PRICES FOR INVOICE.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Oct. 3, 1872.

IRON.—		
Scotch Pig Iron, 30 ton	\$60 00	@ 65 00
White Pig, 30 ton	50 00	@ 55 00
Refined Bar, 30 ton	50 00	@ 55 00
Refined Bar, good assortment, 30 ton	50 00	@ 55 00
Boiler, No. 1 to 4	05 00	@ 06 00
Plate, No. 5 to 9	06 00	@ 07 00
Sheet, No. 10 to 13	07 00	@ 08 00
Sheet, No. 14 to 20	08 00	@ 09 00
Sheet, No. 21 to 24	09 00	@ 10 00
Sheet Shoes	8 00	@ 9 00
Nail Rod	10	@ 11
Nail	8	@ 9
Other Irons for Blacksmiths, Miners, etc.	5 00	@ 6 00
COPPER.—		
Sheathing, 30 ton	40 00	@ 45 00
Sheathing, Yellow	28 00	@ 30 00
Sheathing, Old Yellow	12 00	@ 12 00
Composition Nails	24 00	@ 30 00
Composition Nails	24 00	@ 30 00
TIN PLATES.—		
Plates, Charcoal, 1X 30 box	17 50	@ 18 00
Plates, I C Charcoal	15 50	@ 16 00
Roofing Plates	15 50	@ 16 00
Bacon Tin, 30 box	15 50	@ 16 00
STEEL.—English Cast, 30 box	19 00	@ 20 00
Drill	19 00	@ 20 00
Flat Bar	19 00	@ 20 00
Plough Points	2 75	@ 3 00
Russia (for mould boards)	12 1/2	@ 13 00
QUICKSILVER.—		
Lead—Pig, 30 box	05 1/2	@ 06 00
Sheet	10	@ 11
Pipe	9	@ 10
Bar	06 1/2	@ 7 00
ZINC.—Sheet, 30 box	11 00	@ 12 00
BORAX.—Refined	27	@ 30
Borax, crude	5	@ 6

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, Oct. 3, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as below:

City Tanned Leather, 30 box	25 00	@ 26 00
Santa Cruz Leather, 30 box	25 00	@ 26 00
Country Leather, 30 box	25 00	@ 26 00
Stockton Leather, 30 box	25 00	@ 26 00
French skins continue firm. All California skins are scarce and bring full prices.		
Jodot, 8 Kil, per doz	50 00	@ 55 00
Jodot, 11 to 15 Kil, per doz	60 00	@ 65 00
Jodot, second choice, 11 to 15 Kil, per doz	55 00	@ 60 00
Lemoine, 16 to 18 Kil, per doz	75 00	@ 80 00
Levin, 12 and 13 Kil, per doz	65 00	@ 70 00
Cornellian, 16 to 19 Kil, per doz	65 00	@ 70 00
Cornellian, 12 to 14 Kil, per doz	58 00	@ 60 00
Oregonian, 12 to 14 Kil, per doz	54 00	@ 60 00
Simon, 18 Kil, per doz	65 00	@ 70 00
Simon, 20 Kil, per doz	65 00	@ 70 00
Simon, 24 Kil, per doz	72 00	@ 75 00
Robert, 7 and 8 Kil, per doz	35 00	@ 40 00
French Kips, 30 box	1 00	@ 1 30
California Kip, 30 box	60 00	@ 65 00
French Sheep, all colors, 30 box	8 00	@ 10 00
Eastern Lamb for Backs, 30 box	15 00	@ 18 00
Sheep Roans for Topping, all colors, 30 box	9 00	@ 10 00
Sheep Roans for Linings, 30 box	5 00	@ 6 00
California Russett Sheep Linings, 30 box	1 75	@ 2 00
Best Jodot Cat Foot Legs, 30 pair	5 25	@ 6 00
Good French Cat Foot Legs, 30 pair	4 50	@ 5 00
French Cat Foot Legs, 30 pair	4 00	@ 4 50
Harnass Leather, 30 box	30 00	@ 35 00
Fair Bridge Leather, 30 box	48 00	@ 50 00
Skirting Leather, 30 box	34 00	@ 37 00
Welt Leather, 30 box	30 00	@ 35 00
Buff Leather, 30 box	18 00	@ 21 00
Wax Side Leather, 30 box	20 00	@ 22 00

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Oct. 3.

FLOUR—The interior and local demand is reported good, with a fair inquiry for export. Exports for the week aggregated about 12,000 barrels, and for the first three months of the harvest year 63,400 barrels. We quote prices as follows:

Superfine, \$4.00@4.50; extra, in sacks, of 196 lbs. \$5.25@5.50; Oregon brands, \$4.75 @5.25 in sacks of 196 lbs.

WHEAT—The market has not been very active since our last review; exports for September were 850,000 cents and for first three months of harvest year 2,239,000 cts. Sales aggregate 75,000 sacks fair to choice, at \$1.57 1/2 @ \$1.62 1/2. The range for shipping grades is \$1.60@1.65; and choice milling, \$1.60@1.65 per 100 pounds. Coast ranges from \$1.40 to \$1.65.

The latest Liverpool market quotations (Sept. 24) come through at 13s. 3d. @ 13s. 4d. per cental.

BARLEY—Three cargoes have been cleared during the week, says the *Bulletin*, the same aggregating 33,700 cents. Since July 1st we have sent 12 cargoes to South America, aggregating 123,000 cents, and two cargoes of 15,000 cents to Australia. The total exports for the three months aggregate 150,000 cents. This export trade has been very welcome to farmers, who would otherwise have been unable to place their Barley at anything like the rates they have received. The Cape Horn is the only vessel now under engagement to load, and will take about 12,000 cents. The withdrawal of so much for export, will have a tendency to keep up prices during the remainder of the year. The highest rates paid during the season thus far were realized on Saturday and Monday, when several lots were placed at \$1.20@1.25 and one or more lots at \$1.27 1/2. The rates appear to be \$1.15@1.25 @ 100 lbs. Sale of 900 sbs. choice, \$1.25.

OATS—Market is rather dull. Ordinary to choice, \$1.50 to \$1.80 per 100 lbs.

CORN—Yellow, \$1.60@1.62 1/2 per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 @ 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75 per 100 lbs. None in first hands.

RYE—Is quiet at \$1.80@1.85 per 100 lbs.

STRAW—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN—Price is now \$20 per ton from the mill.

MIDDLINGS—For feed, reduced to \$22.50 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been light during the week. Quotable at close at \$10@16.00.

POTATOES—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from \$1.40 to \$1.75. Halfmoon Bay, \$1.50@1.62 1/2 per 100 lbs.; Cuffee's Cove, \$1.50@1.65; Mission, \$1.37 1/2@1.50; Carolina, \$1 per 100 lbs.

ONIONS—Have advanced to \$1.12 1/2@1.25 per 100 lbs.

WOOL—The market continues dull. Sales of 150,000 lbs. Fall at current rates. Spring is neglected and nominal. Fall, 11@14c. for burry, and 15@18c. for clear; 19@20c. for choice.

TALLOW—Good quality of Cal. 8@8 1/2 c.

SEEDS—Flax 3c.; Canary, 4 1/2 c. Mustard, 1@3c. per lb.

PROVISIONS—Following are jobbing quotations: California Bacon 12 1/2 @ 15c per lb.; Eastern do, 11@12 for clear and 13 1/2 @ 15 for sugar-cured Breakfast; Cal. Hams 14@15; Eastern do, 19@20c; California Smoked Beef, 12 1/2 @ 13c. per lb.

BEANS—The following are jobbing rates: Pea \$3.00@3.25; Small White \$3.00@3.25; Small Butter, \$3.00; large \$3.50. Bayo, \$3.25; Pink, \$3.50@3.75 per ctl.

NUTS—California Almonds, 8@10c. for hard and 18@20 for soft shell; Peanuts, 5@8 Pecan, 20c @ lb.; Hickory, 12c; Brazil, 15c. Chili Walnuts, 15c.; French Almonds, 25 @ 30c.; Princess Almonds, 35@40c.; Coconut, \$10.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:

BEEF—American, 1st quality, 7@8 1/2 c. lb. do. 2d quality 6@7 1/2 c. lb. do. 3d do. 3@5c.

VEAL—Quotable at 7@12 1/2 c.

LAMB—8@9c.

MUTTON—Quiet at 6 1/2 @ 7c. @ lb.

PORK—Undressed grain-fed is quotable at 5@6 1/2 c. dressed, grain-fed, 8@9c. per lb.

POULTRY—Live Turkeys, 20@22c. @ lb.; Hens \$8.50@9.00; Roosters, \$6.00@7.00 per dozen; Spring Chickens, \$4.00@4.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 @ dozen.

WILD GAME—Quail, \$1.50@1.75; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, \$1.00 Ducks and Geese, \$2.00@3.00 @ dozen; Venison, 8@10c. @ lb.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 30@45c., per lb. Inferior and ordinary roll is plentiful, but dull at 35@40c.; choice 45@50c. New firkin is quotable at 25@30c.; pickled, 32 1/2 @ 37 1/2 c.; Eastern firkin 18@27 1/2 c.

CHEESE—New California, 10@15c; Eastern at 14@17c. @ lb.

Eggs—California fresh, are dull at 42 1/2 @

45c.; Oregon, 37 1/2 @ 40c.; Eastern, 27 1/2 @ 32 1/2 c. per doz.

LARD—California 12@13. Eastern in cases 13@13 1/2 c.; do in tcs. 11 1/2 @ 12c.; in kegs, 12@12 1/2 c. per lb.

HIDES—Sales for the week embrace 1,200 Cal. dry at 17@18c., and 1,000 salted at 8@9.

FRUIT MARKET.

Tahiti Oranges, M	30	@ 35
Limes, 30 M	15	@ 20
Ar. in Lemons, M	15	@ 20
Sicily do, bx.	15	@ 16
Bananas, 30 hnb2 50	@ 30	
Pineapples, doz. 50	@ 70	
Apples, doz. 100	@ 150	
Apples, Cook, 50	@ 75	
Pears, Bartlett, 50	@ 75	
Pears, Seckels, 50	@ 75	
Pears, O'King, 50	@ 75	
Peaches, Comm.	5	@ 10
Apricots, 30	5	@ 10
Nectarines, bx.	5	@ 10
German Prunes, 50	@ 10	
Hungarian Prunes, 50	@ 10	
Quinces, bx.	1	@ 25
Pomegranates, 50	@ 12 1/2	
Plums, 30	5	@ 6

Apples, 30	7	@ 8
Pears, 30	8	@ 9
Apricots, 30	8	@ 9
Plums, 30	5	@ 7

Cabbage, 30	4	@ 5
Garlic, 30	4	@ 5
Rhubarb, 30	1	@ 2
Green peas, 30	2	@ 3
Sweet Peas, 30	2	@ 3
Green Corn, doz.	10	@ 18
Marrowfat Squash	7	@ 10
Artichokes, 30	4	@ 5

Cucumbers, 30 box	50	@ 75
Summer Squash, 30 box	50	@ 75
Tomatoes, river, 30	50	@ 60
Tomatoes, bay, 30	50	@ 60
String Beans, 30	2	@ 3
Lima Beans, 30	3	@ 4
Egg Plant, 30	1	@ 1 1/2
Peppers, 30	1	@ 2
Okra, 30	3	@ 4

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—English Standard Wheat bags, hand sewed, 18 1/2 c for machine sewed, 15@16 1/2; Flour sacks 9@9 1/2 c. for qrs. and 13 1/2 @ 15 1/2 c. for hlfs. Standard Gunnies are jobbing at 18 1/2 c.; Wool 70@75c.; Barley sacks 17 1/2 @ 18 1/2; Hessians, 40-inch goods, 12 1/2 c. per yard.

BUILDING AND FENCING MATERIALS—The demand for lumber in the interior is brisk and the export trade is light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$16@18; do, surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$35@45.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, 30 M	20	@ 20
Rough refuse, 30 M	16	@ 16
Rough clear, 30 M	32	@ 32
Rough clear refuse, 30 M	22	@ 22
Rustic, 30 M	35	@ 35
Rustic refuse, 30 M	24	@ 24
Surfaced, 30 M	32	@ 32
Surfaced refuse, 30 M	22	@ 22
Flooring, 30 M	30	@ 30
Flooring refuse, 30 M	20	@ 20
Beaded flooring, 30 M	32	@ 32
Beaded flooring refuse, 30 M	22	@ 22
Half-inch Siding, 30 M	22	@ 22
Half-inch Siding refuse, 30 M	16	@ 16
Half-inch Surfaced, 30 M	25	@ 25
Half-inch Surfaced refuse, 30 M	18	@ 18
Half-inch Battens, 30 M	22	@ 22
Pickets, rough, 30 M	14	@ 14
Pickets, rough, pointed, 30 M	16	@ 16
Pickets, fancy, pointed, 30 M	25	@ 25
Shingles, 30 M	3	@ 3

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—		
Rough, 30 M	25	@ 25
Flooring and Stepping, 30 M	37	@ 37
Flooring, narrow	40	@ 40
Flooring, second quality, 30 M	30	@ 30
Laths, 30 M	3	@ 3
Furring, 30 lineal foot	1c	
Redwood—		
Rough, 30 M	25	@ 25
Rough refuse, 30 M	20	@ 20
Rough Pickets, 30 M	18	@ 18
Rough Pickets, pointed, 30 M	20	@ 20
Fancy Pickets, 30 M	30	@ 30
Siding, 30 M	27	@ 27
Tongued and Grooved, surfaced, 30 M	40	@ 40
Do do refuse 30 M	27	@ 27
Half-inch surfaced, 30 M	40	@ 40
Rustic 30 M	42	@ 42
Battens 30 lineal foot	1c	
Shingles 30 M	3	@ 3

Sugar Pine is jobbing at \$50@60 for clear and \$35@45 for second quality.

COFFEE—Costa Rica 20 1/2 c; Guatemala 18c.

Java 23c; Manila, 18 1/2; Rio 19 1/2 @ 20;

Ground Coffee in cases 30c; Chicory, 12 1/2.

SPICES—Allspice 14@15c. Cloves 16@17c.

Cassia 35@36c. Nutmegs \$1.00@1.10. Whole

Pepper 20c. Ground Spices—Allspice \$1.00 @ doz.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard

\$1.50; Ginger and Pepper, each \$1.00@1.12 @ doz.; Mace \$1.50 @ lb.; Ginger 15c @ lb.

FISH—We quote Pacific Dry Cod in bundles at 4 1/2 c. @ 5 1/2 c, Salmon in bbls. \$5.00@6.00, hf do, \$3.50@4.00; Case Salmon, \$3.00 for 2 1/2

lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in

bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$7.50@8.00;

extra, \$9.00@10.00; in kits No. 1 \$2.50@1.25; do No. 2, \$1.50@1.62 1/2.

NAILS—Quotable at \$6.00@9.00 for assorted sizes.

RICE—Sales of China No. 1 at 6 1/2 @ 7c. and No. 2 at 6@6 1/2 c. @ lb; Siam, quotable at 5 1/2 @ 6 1/2 c. in mats; Hawaiian, 9@9 1/2 c per lb.

SOAP—The prices for local brands are 5@10c, and Castile, 12@12 1/2 c @ lb.

SUGAR—We quote Cal. Cube at 13 1/4 c; Circle A Crushed, 13c, and Granulated 12 1/2 c;

Golden C. 11c; Extra Golden C. 11 1/2 c; Hawaiian 8@10 1/2 c, as extremes @ lb.

SYRUP—Prices may be given as follows: 47 1/2 c in bbls, 50c in hf bbls, and 5

THOMAS & SHIRLAND,

Importers and Breeders of

**Cashmere or Angora Goats,**

—OF—

PURE BLOOD AND ALL GRADES.

For Sale in Lots to Suit Purchasers.

Including a Choice Lot Imported by A. EUTYCHIDES, native of Angora. For particulars apply to

S. P. THOMAS, Sacramento, Cal.

—OR—

E. D. SHIRLAND, Auburn, Cal.
8v4-3m**LANDRUM & RODGERS,**

IMPORTERS AND DEALERS IN

**Cotswold Sheep and Angora Goats.**

A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

JUST ARRIVED:

Eighty-five head of Choice, Pure Breed Angora Goats—47 Bucks and 38 Ewes—the largest importation ever made to this coast, mostly from the flock of Richard Peters, of Atlanta, Ga. A pamphlet, with particulars, furnished to breeders on application.

Address **LANDRUM & RODGERS,**
2v4-3m Watsonville, Santa Cruz Co., Cal.**TO SHEEP BREEDERS!**

And all such as are interested in raising FINE STOCK, attention is invited to the flock of Severance & Peet, consisting of

80 Thoroughbred Spanish Merino Rams, and 200 Yearling and two-year old Ewes,

Just imported from Addison County, Vermont. These Sheep were all selected from noted flocks by one who has bred this variety of Sheep for fifteen years, and are superior in the combination of qualities that go to make up a perfect Sheep. A portion of this flock will be offered for sale on reasonable terms.

NOW IS THE TIME TO BUY,

As this variety is rapidly advancing in the East. May be seen and examined at the CITY GARDENS, corner of South and Center streets, Stockton, Cal.

SEVERANCE & PEET.**FULL BLOODED STOCK FOR SALE.**

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed.

Seventy-five head of the Silesian Sheep have arrived and are for sale by
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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies.
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Manufacture all sizes of

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Which they offer to the trade at reduced prices; also the celebrated Obermann Self-Fastening Bed Spring.

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.
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Monuments, Headstones, Tombs,

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Improved or unimproved, and in quantity and location to suit purchasers.

HOMES AT BERKELEY,

the future site of the State University of California. Fine views, pure air and water, and the best of schools combine to make the spot attractive. Direct communication with Oakland by railroad. For lots of any desired size apply to

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For the liveliest book on the West ever written,

"BUFFALO LAND!"

By W. E. WEBB, the noted Pioneer and Humorist. The wealth and wildness, mysteries and marvels of the mighty Plains fully and truthfully described. Overflowing with wit and humor. The Appendix a Complete Guide for Sportsmen and Emigrants. PROFUSELY AND SPLENDIDLY ILLUSTRATED. Immensely Popular, and selling beyond precedent. Send for illustrated circular, terms, etc., at once, to the Publishers,

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The Masterton Sacker

Is giving complete satisfaction wherever it is used. It is warranted to sack ten bushels of wheat a minute with one attendant. It will fill all ordinary grain sacks FULL, no matter how often they may vary in size. It won't tear a sack in a summer's threshing.

HEAR WHAT PARTIES SAY WHO ARE USING IT:**SPERRY'S RANCH, Sept. 18, 1872.**
W. MASTERTON, Stockton—Dear Sir:—You ask us how we like the "Sacker," and what is our opinion of it. In reply, we have to say, that we have been using the Sacker on our machine since last Monday week, and are extremely well pleased with it. By suspending the sacks clear of the ground, so that the weight of the grain may stretch them while filling them, we are enabled to put considerable more grain into each sack than can be done with the half bushel, in the usual way. It makes no difference how often or how much the sacks may vary in size, they are always filled FULL and equal. The grips never let the sacks loose of their own accord, but must be liberated by the attendant, or else the sacks must be torn to pieces to get them off the machine. We take great pleasure in commending it to all threshers and farmers for its simplicity, certainty and economy.
Geo. W. SPERRY & BRO.

Parties using a machine should state what style of threshing machine they wish to use it on; and also the number of egs, and the diameter of the largest end of the small miter gear on the end of fan shaft. State plainly by what route and in what manner it should be shipped.

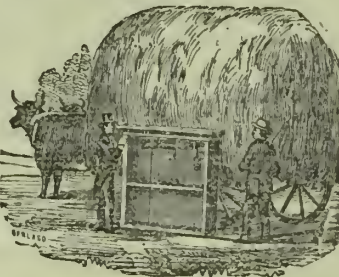
The price in Stockton, boxed and delivered, in car or steamboat, is Fifty Dollars in coin, payable on delivery of machine at the place designated.

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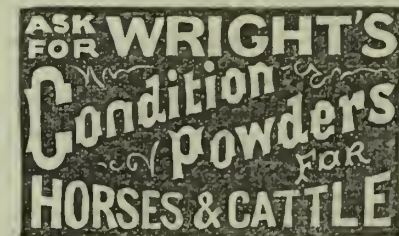
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Wagons,**HAY,****ORE,****COAL,**

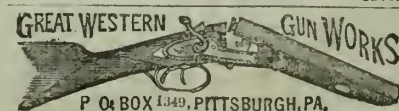
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This has no superior as a Family Machine. It uses a Shuttle and Straight Needle and two threads. It makes the Lock Stitch (alike on both sides). It is simple, easy to understand, and light to run. Send for a Circular. Agents wanted in every town.

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The Simple Mailing Machine.Its features are:
Simplicity of Construction.
Durability.
Ease of Operation.
Requires no expensive outlay.
Adapted to all styles of labels.
Puts them on securely.
It enables use of old papers for wrappers.
And soon saves the cost of printing labels.
It systemizes the work of mailing.
It is the cheapest machine.
May be paid for in part by advertising.
Address, for terms and description,
ADVOCATE PUBLISHING CO.,
Jackson, Tenn.
One of the above machines can be seen at the office of the PRESS. 11v4-tf**P. O. BOX 1349, PITTSBURGH, PA.**
Breach-Loading Shot Guns, \$40 to \$300. Double Shot Guns, \$3 to \$150. Single Guns, \$2 to \$20. Rifles, \$3 to \$75. Revolvers, \$4 to \$25. S&W Stamp for Pa. Lic. Army Guns, Revolvers, &c., bought or traded for.
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ly on hand all FRUIT AND AL EVER-DECIDUOUS a large assortment of ROSES too numerous to mention. Plants, Flower Garden, Grass

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I will send, post paid, warranted to arrive in good order:

1 year Plum and Pear Trees, Roses and Shrubs, \$25 per C.

1 year Apple, Peach and Orange Quince, \$15 per C. Raspberry and Blackberry Plants, 6 varieties, \$2 per C.

Strawberry Plants, 10 varieties, \$1 per C; \$3 to \$4 per M, by express; Giant Asparagus and Honey Locust Hedge, \$1 per C, \$3 to \$4 per M, by express. Larger quantities and older trees proportionately low.

Send for Catalogue. **J. B. JONES,**
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1858.**J. M. MAXWELL,**
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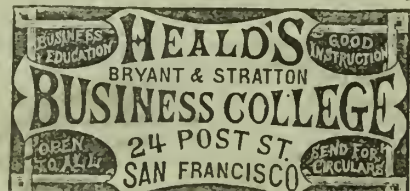
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Our business being exclusively Commission, we have no interests that will conflict with those of the producer.
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Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 642, corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim. 12v3-tf

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12v25-3m President Business College, San Francisco.**Something New for the Kitchen.****THE Aerating Egg Beater.**

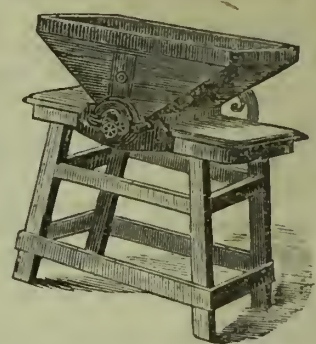
Various devices have been presented to the public for beating eggs, but nothing, we think, equal to the one herein shown. This, in fact, is the only aerating device ever made, and is very properly called the "Aerating Egg Beater."

This Beater, as will be seen by reference to the engraving, is simply a tin can with a cone bottom and a cone dasher, the lower portion of the dasher being perforated with very small holes, as shown. Under this arrangement the upper portion, when forced down, fills with air which is forced through the egg, thereby finely dividing and thoroughly aerating the mass. It beats one egg as well as half a dozen. For further particulars address

WIESTER & CO.,
17 New Montgomery St. (Grand Hotel Building), S. F.**AVERILL'S****CHEMICAL PAINT,****Of any desired Shade or Color,**

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

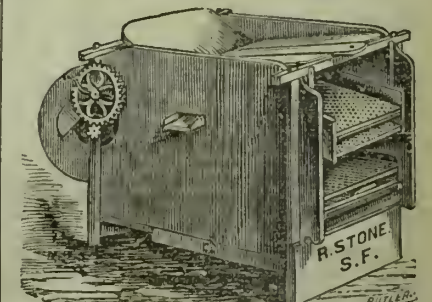
Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list.
15v23-3m **HELY & JEWELL, Agents.****GOOD CABLE SCREW WIRE****Boots and Shoes****ARE SELLING FROM MAINE TO CALIFORNIA.****THE CELEBRATED****CHALLENGE FEED MILL**

For Farm use and Custom work. The only Practical Farm Feed Mill ever invented. Can be used with one to eight-horse power, and grinds from 250 lbs. to one ton of barley per hour. Price of Mills from \$75 to \$100, according to size. Adapted to Wind, Water, Steam, or Horse Power. The grinding surface is adjustable, and can be replaced in fifteen minutes at an expense of one dollar to one dollar and a quarter. Over 3,000 now in use. Every Mill warranted to give satisfaction. For sale by all leading agricultural firms on the coast. For further particulars send for circular.

M. S. BOWDISH, General Agent,
With Hawley & Co., cor. California and Battery sts.,
18v3-sa San Francisco.**Petersen's Patent Bee-Hive.**

This HIVE is a California invention, simple in its construction, and being made entirely of wood, is cheap enough for the amateur or professional bee-keeper. Among the paramount objects secured by this Hive are the facility it affords of examining at all times the stores of the bees, and the taking away of any surplus, or supplying whatever may be wanting. Also the presence and state of health of the queen bee; in fact, of the whole hive. It enables the keeper to interfere in all sorts of emergencies; increasing the number of bees by artificially creating young swarms; and what is of especial importance to the progress of bee science, can be thoroughly examined with reference to the behavior and habits of the different bees, queens, drones and workers, although there is no glass used in its construction.

Persons familiar with the habits of bees know that one of their most necessary and frequent employments is the expulsion of the over-heated and foul air from the hive. To do this, the bees station themselves at or near the opening in the hive, turning their heads inwards, take hold with their feet and move their wings with such rapidity as to cause a considerable current of air, frequently causing a draft strong enough to be perceptibly felt outside the hive. The improvements in this hive consist in providing it with suitable openings both above and below, by means of which the necessary ventilation can be secured and regulated. One Hive has a gable roof, and at intervals in the upper edge of the side walls saw cuts or kerfs are provided which will be sufficiently wide to afford a passage for the air. A strip is secured between the projecting eaves and side of the hive so as to leave a triangular space extending from end to end of the hive, and thus providing a passage for the air. By stopping up the ends of this passage the ventilation is shut off. Near the bottom of the hive is a false bottom, the side edges of which are also provided with saw cuts or kerfs. At short intervals and in the lower edge of the sides of the hives other kerfs are cut so as to break joints with the first mentioned. The frames are made in the usual manner, except that the upper corners are rounded and project slightly, so that they will fit into a groove in the upper part of the hive and be suspended there, and they can be turned slightly so as to come out easily. There is sufficient space over them to admit the hand so as to remove them when necessary. A flat piece of wood covering two frames is laid over the tops so as to prevent the bees from building above. When these loose pieces are taken out, the frames may be removed. There is a door at each end of the hive which may be opened so as to get at the honey from either end. A portion of the hive may be partitioned off, when convenient, by a piece of board which fits into it. The other hive is similar in construction, the only difference being the flat roof, making it cheaper.

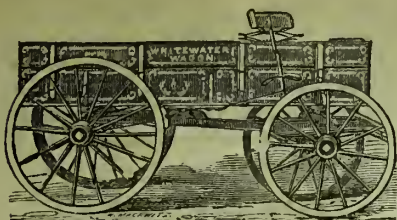
State and County Rights for sale.
Send for circulars to **OLE PETERSEN, Oakland,** or to**WIESTER & CO.,**17 New Montgomery street,
SAN FRANCISCO.**THE PATENT Novelty Mill and Grain Separator**

one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far exceeds anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to
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422 Battery street, San Francisco.**M. WALTHALL and S. T. NYE**

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Land Matters in the Local and General Land Office,
Mining Applications, Procuring Patents, and Contests before the Office, etc., etc.Buy and Sell Agricultural College Scrip and Land Warrants.
Office in Odd Fellows' Building, near the Land Office, Stockton, Cal. Refer to Hon. S. A. Booker, Judge of the Fifth District Court, Stockton. 9v5-3m



PRICES:

Thimble Skein, 3 inch, \$100; 3 1/2 inch, \$105; 3 3/4 inch, \$110; 3 1/2 inch, \$115; 4 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yoke and stay chains.

Box Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.

We invite the attention of buyers to the superior workmanship and finish of these justly celebrated Wagons. They are known throughout the West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective, it will be replaced without charge. We claim by actual test a saving of FIFTEEN PER CENT. in draft over any other Wagon offered for sale. This case of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves."

Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the best Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturers of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.

We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Rack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the SPRING SEAT 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running-gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY SEASONED HICKORY.

If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

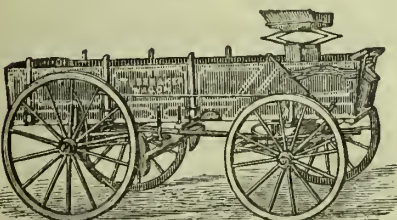
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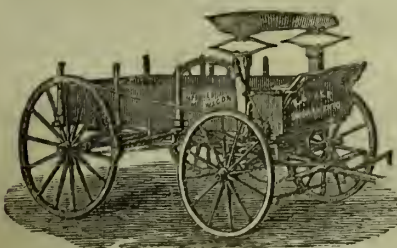
For QUALITY, DURABILITY, LIGHT RUNNING, GOOD PROPORTION, AND EXCELLENT STYLE, They Have no Peer.

IRON AXLE, THIMBLE SKEIN, SPRING WAGONS, BEDS, BRAKES AND SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed, As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

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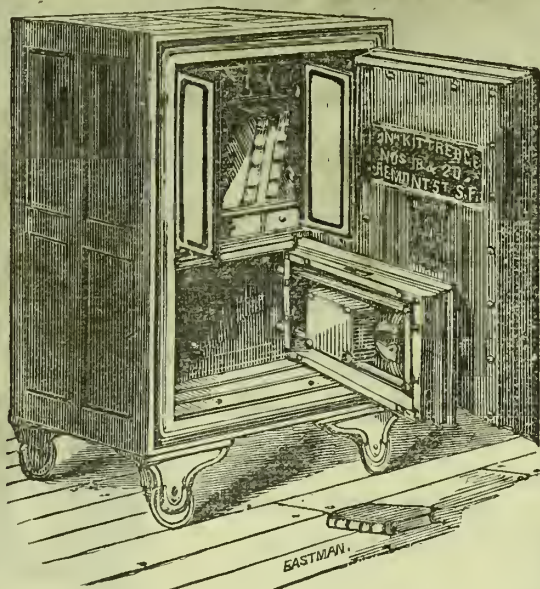
FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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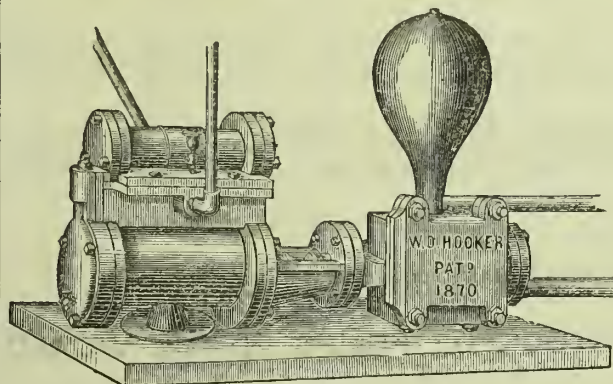
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7v4-1am5mbp

Hooker's Patent Direct Acting Steam Pump.



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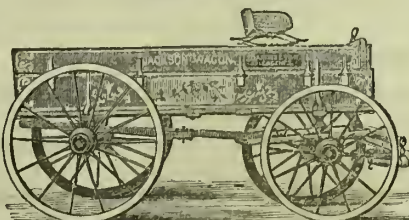
Adapted for all purposes for which Steam Pumps are used. Manufactured by the inventor and patentee, at Hooker's Machine Works, No. 112 Spear street, San Francisco.

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JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair, Michigan, over the Studebaker and all others. Important improvements have been made in our Wagons now arriving. Our large Two-horse and Four-horse Wagons have heavier tires, broader and deeper felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We sell gearing only; or fitted up with California Racks and Brakes, Spring Seat, etc., or with Eastern double side-box bodies. Persons ordering will get Wagons at SAME PRICES as if here—WARRANTED perfect and complete in every respect. Buying strictly for cash and in large quantities (twelve car loads on the way), we are enabled to sell, Wholesale or Retail, at very Low Prices.

N. B.—WARRANTED FOR THREE YEARS.

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Corner California and Davis streets, SAN FRANCISCO.

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AMERICAN CHIEF

GANG PLOW.

Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON, Stockton, Cal.

14v2-3m

SOMETHING NEW.

We have for sale the Right to the Pacific Coast for a new and useful invention that is needed in every family. It is easily manufactured and requires but a small amount of capital to commence with. A number of orders have already been taken, which will be turned over to any party who may purchase the patent.

Samples can be seen at our office, or descriptive circulars will be sent to any address on application.

WIESTER & CO.,

17 New Montgomery Street, San Francisco.

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow, Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide.

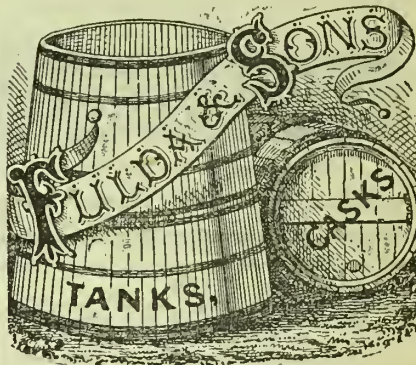
This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale by the

SWEEPSTAKE PLOW CO.,

At SAN LEANDRO, CAL., under the personal superintendence of the Patentee, F. A. HILL,

And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3



TANK MAKING.

The undersigned having adopted TANK MAKING as their specialty, are now prepared to manufacture

Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood

FOR THE SPECIAL PURPOSE OF MAKING

LARGE WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.

1,000 to 2,000 gallons, bound with 5 hoops 1 1/4 x 1/2 and 1 hoop 1 1/2 x 3-16.

2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2 hoop 2 x 3-16.

4,500 to 7,500 gallons, bound with 5 hoops 2 1/4 x 1/2 and 2 hoop 2 1/4 x 3-16.

7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 1/2 and 2 hoops 2 1/2 x 3-16.

15,000 to 20,000 gallons, bound with 8 hoops 3 x 1/2 and 3 hoops 3 x 3-16.

PRICE, - - From 1 1/4 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2 1/2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.

REDWOOD CASKS (split lumber,) with oak middle piece and gage, from 7 to 9 c. per gallon.

OAK CASKS (full stock,) from 12 1/2 to 15 c. per gallon.

Send for Price List.

For further particulars address.

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IMPROVED STEAM WATER LIFTER,

With nother Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most ECONOMICAL of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco.

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PUMPS AND STOVES.

A large assortment of FORCE and LIFT PUMPS; also, DEEP WELL PUMPS, RUBBER HOSE, Etc.

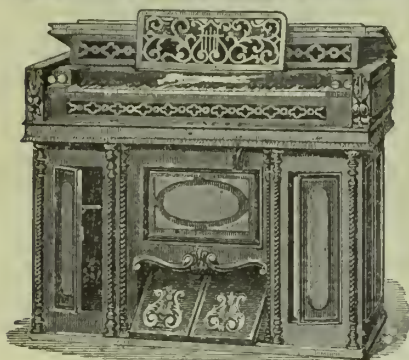
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JAMES JOHNSTON.

"I Enjoy It Very Much."

VINELAND, N. J., Sept. 6, 1872.—Messrs. DEWEY & Co.: Please find inclosed one dollar and twenty-five cents; and as my subscription to the RURAL PRESS expires September 12th, send it for three months more from that date, as I enjoy it very much. Yours, respectfully, THOS. B. PERKINS.



Burdett Organ Price Lists

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Vegetable, Field and Flower Seeds,
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FRESH SEEDS OF PALMS AND BLUE GUM TREES,
Etc., Etc.

Pure KENTUCKY BLUE GRASS, RED TOP RYE GRASSES,
ORCHARD GRASS, TIMOTHY, ALFALFA, WHITE,
AND RED CLOVER SEED, ETC.
Hyacinths, Tulips, Crocus, Lilies, fine clumps of Lily
of the Valley, new Gladiolus, Etc.
Ranunculus Seed and Plants.

A FINE COLLECTION OF

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RUSTIC AND WIRE BASKETS, FLOWER STANDS, FRUIT AND
ORNAMENTAL TREES, ETC.,

AT THE OLD STAND.

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425 Washington street,
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3,360 ACRES FARMING LAND,

Lying north of the Merced river, between Mc-
Swain's Ferry and Hopetoun. Seed, feed and im-
plements found. 2,200 acres were cropped this
year. Parties applying will be required to have at least
thirty good horses or mules. Apply to
1t W. M. RYER, 408 California street, S. F.

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Children's Shoes

UNLESS THEY HAVE A SILVER TIP ON TO
Protect the Toe.



THE PEOPLE'S PUMP.

THE ONLY RELIABLE PUMP FOR

Farmers, Stockmen and
Stable Keepers,

BEING A

NON-FREEZING FORCE PUMP,

Working in Wells from

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Suitable for either Hand or Power use.

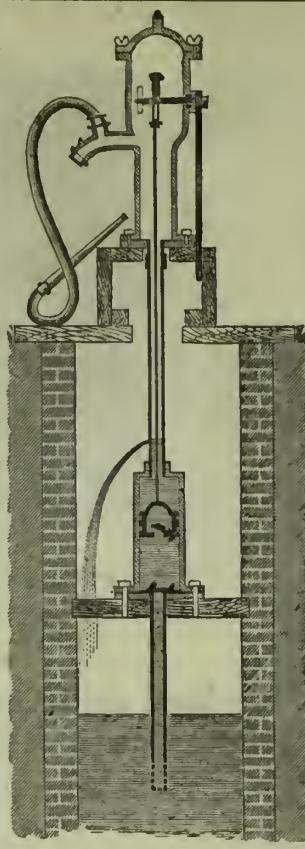
RATE IN PRICE, FROM \$12 UP.

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Depot for Pacific Coast,

CONROY, O'CONNOR & CO.,

SAN FRANCISCO.



KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San
Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The work-
manship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal.
(Diploma awarded). Signed by the Committee:

v113-awhp

G. W. DICKIE, CHAS. R. STEIGER, W. EPPESHEIMER, H. B. ANGELL,
MELVILLE ATWOOD."

It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it
is always ready to start without using a starting-bar, and does not require hand-work to get it
past the center. Will always start when the steam cylinder is filled with cold water of con-
densation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee
of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump
to lose but 11 1/2 per cent., while others lost as high as 40 per cent., showing great difference in
economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,

And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand.

3v24-eow-bp

THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries,
we state that the highest award for Steam Pumps at the Eighth or last Mechanics'
Fair in San Francisco, was a First Premium and Diploma, awarded to the Knowles'
Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

BLAKE'S PATENT STEAM PUMP.

Messrs. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam
Pump, purchased of you by Mr. Ralston, I will say that it gives ENTIRE SATISFACTION, even working as it now is,
where no other Pump could; for it is at present SIX FEET UNDER WATER, yet it does its work PERFECTLY.
Yours, etc., J. E. BUTLER,

Supt. Water Works and Engineer at W. O. Ralston's.

TREADWELL & CO., San Francisco, Selling Agents for Pacific States.

Machinery Depot for Miners, Millmen, and Engineers' supplies. Iron and Wood Machinery; Portable
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100 Barrels Guano for Sale,
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Importers and Breeders of

SHORT-HORNED CATTLE

Thoroughbred and Trotting Horses, Cotswold
Sheep, Improved Berkshires, and
Pure-Bred Poultry in Great
varieties.

Stock of all kinds for sale at reasonable prices. Send for
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WAUKEGAN, ILL.

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Importer and Breeder of

Angora or Cashmere
GOATS

—OF—

PURE BLOOD

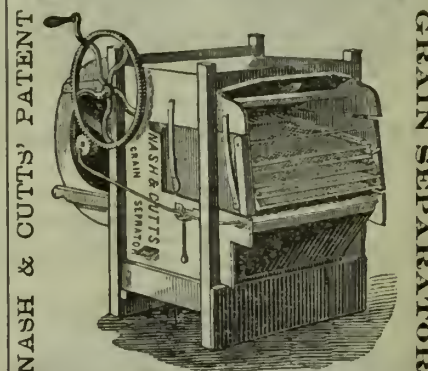
—AND—

ALL GRADES.

For sale in lots to suit purchasers. Location, four
miles from Railroad Station, connecting with all part
of the State. For particulars address

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N. GILMORE
El Dorado, El Dorado county,
California.



Three sizes, warranted to clean from 60 to 200 bushels
per hour, according to size. Prices, \$40, \$50 and \$75.
First Premiums at California State Fairs in 1870 and
1871. Warranted to separate Mustard Seed, Cheat,
Barley and Oats, from Wheat. Cleans the Morning Glory
Seed from Alfalfa.

Circulars mailed on application. Address

NASH, MILLER & CO.,

Sole Proprietors and Manufacturers, Sacramento, Cal.
N. B.—All the Nash & Cutts Steam Separators are
fully warranted. 3v4-15t

For Sale.

ALDERNEY HALF-BREEDS,

Sired by Ad. Maillard's Imported Bulls, "Emperor
Billy," Etc.

14 Yearlings,

9 this year Calves.

Apply to FELIX FABER,
White Ranch, Nicasio District,
San Rafael, Cal.

STALLIONS.

Two Fine Three-Year Old Stallions for Sale.

Call on or address D. L. SMITH, at 17 New Mont-
gomery street, San Francisco. 11v4tf

\$5 to \$30 per day! Agents want all Alpacas or working peo-
ple, of either sex, young or old, make more money at
work for ten to fifteen months or all the time than anything
else. Particulars free. Address O. S. Stinson & Co., Portland, Maine.



Volume IV.]

SAN FRANCISCO, SATURDAY, OCTOBER 12, 1872.

[Number 15.]

Our Pacific Coast Interests.

As an agricultural and family newspaper, with a larger circulation than any other weekly paper on the Pacific Coast we are naturally expected to look after every interest that may pertain to our State's welfare. We are expected to keep our readers posted in regard to the world's agricultural productions, and the values of all products in the great markets abroad as well as at home.

We watch the prices of wheat and wool in the English markets and report to our patrons as often as we think we can interest them. We talk of mohair, silk, jute, ramie, woolen manufactures, grain products and mechanism and we had thought nothing escaped our notice; when in comes a communication, telling us that we are entirely overlooking one of the very important interests of the Pacific Coast.

And as our informant furnishes us with an illustration descriptive of his pursuit and business, and declares that a whale is not a fish, but an *animal* that should be talked about, as running a strong competition with the hog and the petroleum wells of the world in the production of oil, we are constrained to give him a hearing.

He says: The illustration I send you is the picture of a dead whale [We are glad he told us this, for we would have never suspected it.—Ed.] that having been harpooned and as we supposed captured, afterwards and before his death, captured us. He came head on to our broad side with tremendous force, knocking us in amidship and sinking us—our ship—in fifteen minutes, leaving us with such loose floating material only as happened to be on deck, for the construction of a raft which we managed to keep afloat, and also to keep possession of our trophy for ten rather weary days of ocean life, and until another ship had desecrated us, and to the officers of which we bartered our captured animal for a home trip for all of us.

Our informant stops just here, and fails to tell us how his story pertains to the agriculture of the Pacific Coast; perhaps our readers can see deeper into it than we do, if so they will please inform us.

CHEAP TOMATOES.—In the spring of 1871 we learn that Mr. John Smith bought a block of land in Sacramento and tomato seed to plant it. The seed was of a new variety and did not reach him in time to be planted early enough to make much of a crop the first season; besides this the seed cost more than the land. At the fair the tomatoes were on exhibition—smooth, large, of a bright color and the most solid meat that we ever saw. We do not think that they would waste more than half as much as common varieties in drying. If he has the whole stock of this seed and will advertise as well as George Warring advertised the Trophy there is no doubt but that his tomato seed will prove in the end very cheap indeed.

Vineyards for Raisins.

In our eagerness to devote our lands to such crops as pay the best relatively, very many have turned their special attention to the growth of the vine, and because the Mission grape vine in large quantities was more easily or cheaply procured, a vast proportion of the vineyards of the State are of this variety. It makes a very good wine, but it is not as well adapted to raisin making, indeed is not considered a raisin-grape.

Perhaps it is unfortunate that this should have been the grape found here on the acquisition of the country, instead of a purely raisin-grape. There is no doubt but our climate actually excels that of any raisin-growing country of the world, not only in the perfection of growth, but for the process of drying and converting into raisins.

We think it unfortunate for the State and in-

raisins that were prepared by simply spreading the grapes on boards and turning them but once during the whole process of drying.

They were not taken indoors or given any other care than to see that the dew was not permitted to fall upon them, rain of course would be even more injurious. We hope experiments will be instituted this year with every variety of grape capable of being dried—and that embraces every known variety—for the purpose of determining their quality as raisin-grapes.

Some will lose three-fourths, others two-thirds, and some of the best varieties only one-half, in drying. Mr. Sanders, the author of an excellent article, in our last week's issue, makes mention, in a private conversation with us, of a raisin-grape, largely cultivated in Malaga, in the South of Spain, that loses but

Thoroughbred Cattle.

There never has been a time in the history of the State when so much attention was given to the selection and purchase of imported stock as at present. The doing away with the enormous expense of fencing, the consequent keeping of smaller herds of cattle almost necessitates the keeping of one cow that shall give the same amount of milk that two did before, and the fattening of one ox on the same ground by better management that shall be more than equal to two, fed by old-time processes, and carrying horns that require as much feed for their growth and support as all the rest of the animal.

Now everybody who can, is purchasing thoroughbred stock; the farmers of Sonoma county are leading off in the direction of improved Durham cattle.

Mr. Jewell, of Petaluma, purchased at the State Fair a two-year-old thoroughbred Durham heifer from the herd of Wm. P. Overhiser, of Stockton; three cows of Dr. E. S. Holden, of Stockton, out of his herd of thoroughbreds, all very superior animals; and he has heretofore procured a thoroughbred Durham bull from the herd of Col. C. Younger. We merely speak of these purchasers as showing that our farmers are waking up to the subject of more diversified farming. It has been wheat, wheat, grain, grain, of some kind, till our lands begin to show the effect of non-rotation, by an exhaustion of the soil, that nothing can renovate so certainly and cheaply, and attended with so much profit as a mixed husbandry, embracing fruits, grains and live stock. It is the only true and legitimate system of agriculture for this or any other country.

The Dairy Interest.

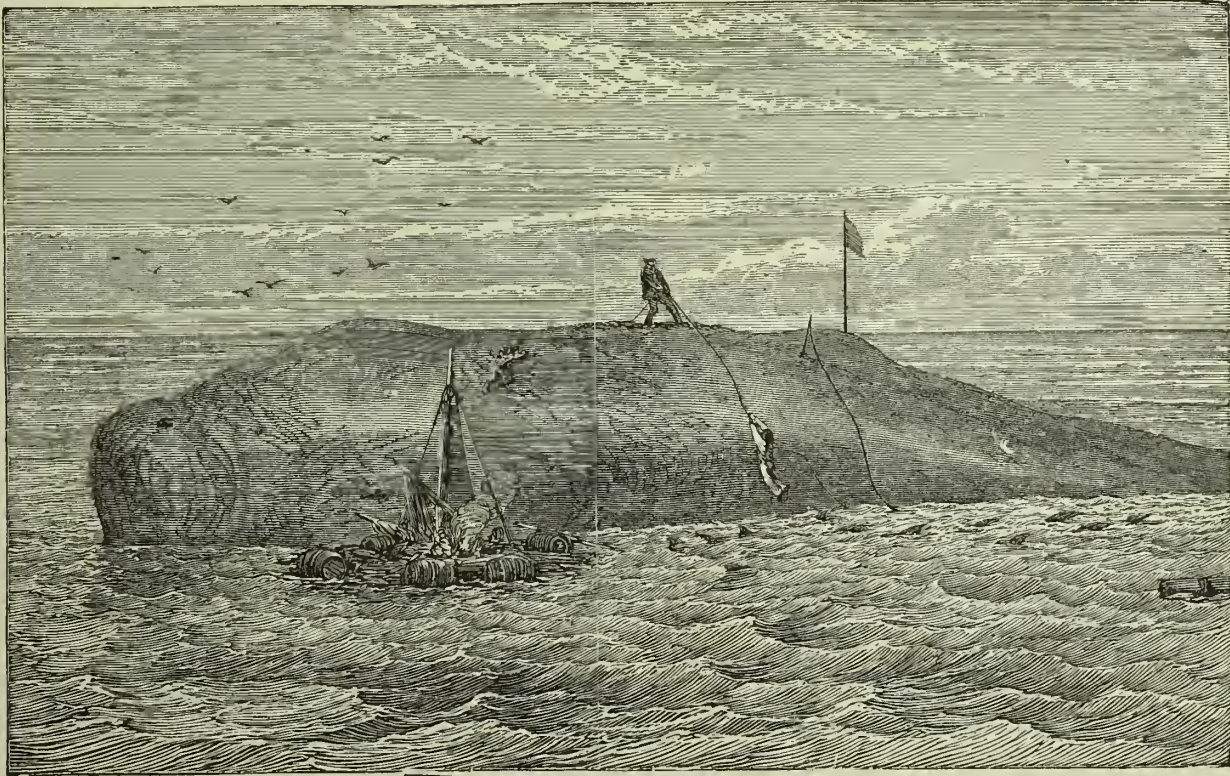
This important feature of California agriculture is

also receiving its full share of attention; the most noted breeds of milkers suited to the varied conditions of soil and the nature of the grasses of the varied districts of valley, hill and mountain lands, are now being eagerly inquired into, with reference to their peculiar properties and adaptability each to the other, with a view of obtaining the best, and only the best, thoroughbred animals.

Durhams or Shorthorns are becoming the favorites where good milking qualities are combined with size and adaptation to heavy fattening, and upon lands producing an abundance of nutritious grasses easily grazed.

On the higher lands and mountain districts the sleek and beautiful Devon is evidently the breed most in favor with amateur growers, possessing good milking qualities, an aptitude to fatten on a more scanty feed than the Durham, and making the fastest working ox and the handsomest of all the different breeds.

The apple crop of Iowa exceeds both in quality and quantity that of any previous year. This speaks well for the Hawkeye State.



THE CAPTORS AND THE CAPTURED.

dividuals that more attention has not been given to the introduction and dissemination of raisin grapes instead of wine-grapes. We have already quantities of wines on hand in many parts of the State awaiting a market; but we never hear of raisins, either here or elsewhere awaiting purchasers at paying prices.

There never was a time and probably never will be, when raisins will not command largely remunerative prices, and they can be kept, and with infinitely less loss and cost of package than wines. Anybody, the old, the young, the maiden, can take a hand at raisin drying, and each vie with the other in the production of a superior article. No costly wine-presses, nor cellars nor casks are required, and we can soon become famous as the best raisin-producing country of the world.

Varieties of Raisin-Grapes.

What we want now is—that of the numerous really excellent grapes for raisins already in cultivation in a small way in the hands of expert growers—to determine the best varieties for soils and localities. Early last spring we were the recipients of several samples of excellent

half in drying. Raisin growers should procure the best varieties known.

Comparison of Values.

A ton of grapes for wine can be grown and sold at a handsome profit at one cent a pound or \$20 a ton; they are sold everywhere in large quantities at this price. Now, suppose the ton of grapes were dried down one-half, into good, marketable raisins—and thousands could do this who will never become good wine-makers—and we have a thousand pounds of raisins worth at wholesale ten cents a pound or one hundred dollars, whilst the Mission wine-grape will bring but twenty dollars.

The essential requisites of a good raisin-grape are, a thin skin, sweet and delicious flavor, thick, firm pulp, with small seeds, and the smallest possible number. There are several grapes that would make good raisins did they not have too many and too large seeds. We shall expect to hear a good account from our raisin-makers the present season, and then, as the raisins are shown in proof of their value, a larger demand for the cuttings of those, than can possibly be supplied, by carefully saving every pruning, large or small.

CORRESPONDENCE.

Tulare County.

EDITORS RURAL PRESS:—I have been thinking much over an article read some weeks ago, in the Press about the injury to the quality of wheat from the use of headers instead of reapers or methods that shall cut the stalk off close to the ground, thus giving the grain the benefit of the juice that remains therein and not leave it to stand to become over-ripe and hard as is usual, and in fact—the safest plan from danger of the greener cut straw and grain heating in stack—especially if there be weeds amongst it as was the case with a crop on lower Tule River, where parties expected to have 2,000 bushels of grain, when the machine came, found it not worth threshing, it having been all spoiled by heating.

On the plains where we have no weeds, and shorter straw, it might be cut greener, say in the dough, and put up in small stacks to cure; if the improved quality and quantity of flour would pay the extra expense of more header wagons; cut it very low the improved quality of the straw for feed would pay part of the expense. That an improvement of both quality and quantity of flour would be thus obtained I have no doubt as one of our most intelligent and enterprising practical members of the Farmers' Club in Chester Co., Pa., reported that he gave it a fair trial with very favorable results, so he would always cut green and cure in shock thereafter.

Rotation.

As this plan of taking crop after crop of the same kind of grain from the land, year after year without change or return must in the end prove detrimental, I have the idea of the following rotation on three 40-acre lots. First year. Wheat drilled in, on well plowed land before the rains come. Second year. Harrow well, and drill in barley, which will give a good crop of mixed grain for feed; run over it with a light harrow after the grain is well rooted, to kill out fillaree.

Third year drill in either wheat, barley or oats, the latter if climate suits, and cut with a mower just before any of it is ripe enough to seed, letting it lie on the land, turn in stock or sheep to eat it, for in this climate it will keep good until fall rains come, just before which this land thus well manured should be plowed eight or twelve inches deep for wheat again.

Tomato Worm.

Who knows a remedy for it? It has been worse this summer than common; we would all know more about such things if the plan of educating children recommended in his address to the Agricultural Congress May, 1872, by J. B. Turner, was followed. I think it would be a good plan to have children take to school every specimen of worm or insect they found and the teacher or assistant find out as much of its history as is known, to be taught to the pupil, also preserve for future references, one day of the week would be advantageously devoted to the purpose.

A Slate Farmers' Club

Composed of delegates from County Clubs to meet once each year and hold a session of a week or more might do a good work by having specimens of different insects, etc., sent to them or taken up by them from their respective constituents where they would employ such scientific experts as might be necessary to procure information for the benefit of farmers, in fact for the world, by saving the destruction of crops.

Plowing.

We can plow here all summer and in this rich black fillaree land three horses will take a steel plow in eight inches deep and finish an acre before noon, which is enough for them to do for one day when they are picking their living on stubble; and at that rate one man can prepare over 100 acres for seed during the summer without working hard or in the heat of the day. How thankful Californians ought to feel for these superior advantages possessed over farmers in the East where ice bids fast the soil for half the year.

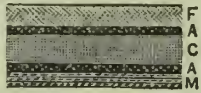
An Early Wet Winter

We believe is before us; all the signs seem to point that way, and yesterday quite a little shower came to warn us to get ready, with a cloudy day to-day and the barometer changing. Yours for progress, ISAAC B. RUMFORD. Plauo, Tulare Co., Sept. 26, 1872.

Abestos Roofing.

EDS. PRESS:—In your paper of Sept. 21st, page 178, you have an article "About Patent Roofing," which I see both you and your correspondent, W. L. W., Napa City, feel the lack on this coast, of a good and cheap patent roofing. I have also felt the need of such an article, and in my desire to supply it, have sought among the many different styles now so largely advertised in the Eastern cities, and selected H. W. Johns' Asbestos Roofing, as best adapted to this coast; it also being the only one which is practically fire-proof.

It is largely in demand both in New York and Chicago, and is considered next, if not equal to tin; while it is put on at about one-half the cost. The roof when complete has the appearance of gutta-percha, and does not crack like



the asphaltum roofs. I have applied for the general agency for this coast, and at the same time ordered a supply of material shipped to San Francisco, and will soon be prepared to supply the trade, W. L. W., or any others who desire a first-class roof, at about the same price they are now paying for an inferior one.

I enclose you a circular describing the manner of putting the roofing on, and would call your attention to the representation on the last page, showing how the roofing is made and the material composed of. Hoping this will throw some light on the subject, I remain, E. A. EDWARDS.

San Buena Ventura, Sept. 24, 1872.

We give place to the foregoing and have engraved a section of the "representation" alluded to as showing how the roofing is made, that we may answer as well as we can, the inquiry of W. L. W., in a former number of the RURAL.

F—Asbestos-coated felt.

A—Layers of water-proof composition.

C—Canvas.

M—Manilla lining.

The whole being one-tenth of an inch in thickness, the engraving being magnified to show the different layers. It is one of the many improved cheap roofing materials now so common at the East, and is considered second to none in effectiveness and durability.

Gold Fishes.

EDITORS PRESS:—You gave us some time ago, instructions about taking care of the canary-bird. Farmers enjoy the sweet melody of the canary as much as city folks—notwithstanding we have the sweet warblers in countless numbers, that visit our orchards, and make the air resound with their sweet music.

Now will you be kind enough to tell us something about the beautiful gold fish; for we enjoy beautiful sights as well as sounds. How should they be treated to keep them healthy? How often should the water be changed? What food should they be fed? And how often?

You tell us about birds and flowers and a great many other beautiful things, that should be raised and cultivated by farmers, more than they generally are. Please tell us about the beautiful fish, and oblige yours, etc., D. L. C. Morano, Oct. 1st, 1872.

River or lake water is much better for the gold or other fish, kept in small jars or globes than well or spring water. The latter is not sufficiently aerated or saturated with common air, to sustain the fish any considerable length of time. Even river water in small quantities as in globes, is soon exhausted of the requisite quantity of vital air to sustain the fish in health, and when it has lost it, it should be at once renewed. This condition of the water can always be known by the fish coming to the surface and taking in at every respiration, the air which the water does not furnish in sufficient quantity.

Pure well or spring water can be aerated by pouring a quantity from a height and allowing it to fall in drops or spray into a quantity below; but even then it is not as good as river water as furnishing little or no nutriment or food for the fish. In ordinary lake or river water the gold fish needs no food, unless you desire to increase their size; there is enough of vegetable and animal infusoria in ordinary river water for their healthy subsistence.

They are often fed however, with the common house-fly, caught in the hand and thrown upon the surface of the water, the fish seizing them at once; but the feeding is more for the curiosity of the thing than any necessity of so doing.

DISCRETION.—It is often safer to trust silence to confer a reputation for wisdom than to risk exposing ignorance by speech. For instance. At the State Fair some of the owners of Durhams remarked that certain judges of cattle came to their stalls and enquired what breed of cattle those were. They put this construction upon the remark. The judges don't even so much as know a Durham from a Devon or an Alderney. It can hardly be possible that any one should not even know this much to say nothing of the eminent judgment of such men as the State Society would certainly choose upon its committees. Had they put the question, "Are these thoroughbreds or grades?" their meaning would probably have been conveyed and their reputation saved. It is very important that men of such reputation be chosen on a committee that their verdict will carry with it respect if not assent.

BENEFITS OF INVENTION.—In the course of his recent speech at the Mechanical fair in Newark, N. J., Horace Greeley said: About twenty-one years ago I groped my way up a dark stairs in Fulton street, New York, to see the sewing machine. Elias Howe, Jr., the inventor, sat there, wild and seely-looking, frightened at the approach of a stranger. He thought I had come to steal his idea from him. When I told him I had not come to take his sewing machine, but to tell people there was a sewing machine, he became communicative, and told me what he hoped from his wonderful combination of the needle and the shuttle. Now there are a million sewing machines in use, and six immense factories are busy turning out more to meet the demand. I believe that, as we improve in our lightening of human labor, by deputing the heaviest muscular work to that faithful servant, steam, that we will also improve the condition of wages and labor; that the system of weekly pay now in vogue will give way to even a better system, where the laborer will have a personal and direct interest not only in the quantity but the quality of his work, and that he will have a cooperative interest in the work which capital now commands. Thus labor and capital will be brought gradually and quietly into better and nobler accord.

COAL AND IRON.—The coals of this coast, including the Rocky Mountains, Mount Diablo and Oregon, at present worked, belong to a much later age than the coals of Pennsylvania and Virginia, and those we import from England. Our coals are not suited to iron making in the furnace and the rolling-mill. Iron ore of excellent quality abounds in California; but for want of suitable coals, and by reason of distance inland, it is unavailable. True coal of the ancient carboniferous formation, is reported in the Trinity River country. It is a true baking, bituminous coal. Recent exploration describes this coal-basin as thirty miles long, and it seems of good size. It is underlaid with rich ironstone. Here, probably, will be the great iron factories of the State.

CALABRIAN MANNA.—Mr. Daniel Hanbury, F. R. S. who is *par excellence* the English investigator of the history of raw pharmaceutical products, undertook to inquire into the history and productions of Calabrian manna, that district being described in Murray's Handbook of Southern Italy as the chief seat of the trade in manna. He visited Calabria Citra during the present year, but had great difficulty in finding any really good specimens of the drug. There seems to be no doubt that, although Calabria was, some number of years ago, almost the only source of manna, the production of it there has ceased and that Sicily is now the place of production, the trees yielding it being stated as *Fraxinus ornus* and *Fraxinus rotundifolia*.

MAGNETIC WELLS.—Much has been said recently about certain wells in Michigan, whose waters were claimed to possess magnetic and healing properties. About 150 such wells had been discovered, and their waters had been sent in large quantities all over the country.

It appears that some careless scientist had reported their magnetic properties, basing his statement on the observation that a piece of soft iron wire, connecting a cup of the water with the earth, was shown by the magnetoscope to be magnetic. Dr. Kedzie had omitted the water in the same experiment, and found a similar result. He had also tested the tubing of wells that had not reached water at all, and found it magnetic. The indications were due to terrestrial magnetism.

THE AUSTRALIAN CABLE.—The cable connecting Australia with England and America gave brief congratulatory messages, and went into a trance. That is the way with cables. It will be remembered that the Atlantic cable behaved in the same manner, and incredulous people by the thousands believed there never had been communication between the two nations through its agency. The Australian cable broke, and the task of its recovery from a bottom of coral reefs and other submarine obstacles is one of much greater magnitude than the recovery of the lost cable in the Atlantic.

NEARLY every American traveler in Europe has something to write back concerning the big feet and clumsy shoes of the men and women of Europe. Here is "the other side." "English boots and shoes are now in great demand in our American markets. They are not handsome, but broad, comfortable and well made."

Living with "Old Folks."

I always said, when I was young, that I would never live with old folks. I did not mean that I would not live with my own father and mother, for were they not the best folks in the world, and would they ever grow old? But I meant that I would never marry a man who "lived on the home farm"—as we say in the country—and had the property for supporting the old people; and I even went so far one day as to tell one of my schoolmates, with whom I was very intimate, that I wouldn't marry a man who had to take care of his father and mother—not if he owned a gold mine and had three men digging at it all the time. And at the same time I somehow felt, that if I ever did marry, it would be my lot to live with "old folks."

While I openly proclaimed that I would not, there was something within me assuring me that I should—that it would be my lot. So you will not be surprised, I know, if I tell you that the very first offer I had was from a young man who lived on the home farm, and took care of his father and mother! I had formed in my own mind such a pretty picture of my future home, where I should live alone with my husband, and have things so cosy and nice—that I felt as if I could not have the bother of old folks.

"Well, did you marry him?" I hear some reader say. Yes, I did. He was a grand fellow, possessing sterling qualities of mind and heart, and I loved him very much. The longer we lived together, the more I grew to honor and respect him. But what a trial I did have to make up my mind to say "yes," and what a trial I did have after we were first married to get along with the "old folks."

I felt that I was mistress of the house, and although I knew but very little about cooking and housekeeping—having been to school all my days, and having always had a mother close to my heels—I could not bear to be told! And as I took charge of things generally, my husband's mother was displeased, and did not appear at all suited with my household management. Oh! how many times did I go off by myself and cry for my foolishness in marrying a man who lived with old "folks." If I could have said "no" at such times, with any avail, I should have said it spitefully, I assure you.

Thoughtful Review.

As time passed on, I began to feel that I had not done just right. It came to me one day—I suppose I had a good fit come over me, or something of the kind, I cannot tell just what—to consult my mother-in-law—"your mother" I had always called her to my husband. I have forgotten what it was about, but I know it pleased her wonderfully. Why had I not thought of it before? It would do me no harm, and might possibly gratify her.

She—good soul that she was—referred it right back to me! How I had misjudged her, and how really unselfish she was. I am sure it was not strange that she wanted to be consulted in the affairs of the house when I first went there; and I was a naughty, pert, foolish thing. Did not she know more than I? and did not she have as good a right there as I had? How sorry I felt, that I had so radically taken things into my own hands.

Well, after the time to which I have alluded, I asked mother—as I began to call her—all about the household affairs. My own mother I had left a great ways behind me when I married, and did not have her to lean upon. But I began to think in this way: what if my brother Ben should get married, and marry a sassy little girl with no knowledge of house-keeping; and what if she should not use mother well. I could not bear the thought. My good mother—not old by any means—so ill-treated by my brother's wife! I would never allow it.

But were my father and mother any better than my husband's? Did not my husband's parents demand the same care I wanted my own to have? Had they not worked as hard in their younger days, to take care of him as my own had to take care of me? And could I see my parents ill-treated—or not exactly that, but, rather, set aside—by any one?

So I thought these things all over, and I resolved to treat the father and mother of my husband—the "old folks," as they were called—just as tenderly as I would my own. I gratified all their notions and freaks—and they had a great many—and consulted mother every day about a dozen and one things. And how happy I was becoming! I learned to look upon them not as old—I actually made a companion of mother. How I missed her if she went to a neighbor's of an afternoon, and how I longed for her return. I could not have kept house without her.

That was years and years ago, and they have both gone where there is perpetual youth, and where old people are always young and never in the way. I begin to realize, as I see my own children about me, that I, too, ere long shall be classed with the "old folks," and that some one other than myself must do for me. When that time comes, God grant that I may not fall into the hands of a son's wife who dreads to take care of old people.—*Marion Montgomery.*

THE JEWSHARP.—The various tones of the jewsharp are caused by the different pressures of the breath on the tongue of the harp, which tongue is kept in motion by the touch of a finger. The vibration of the vocal organ would not affect it, unless the player sang on to the instrument.

FLORICULTURE.

The Flower Garden.

A beautiful garden, tastefully laid out, and well kept is a certain evidence of taste, refinement and culture. It makes a lowly cottage attractive, and lends a charm to the stateliest palace.

An English writer, lately visiting our country writes: I can conceive of nothing more dreary than to live in the country and have no garden. To have no garden is to take all the poetry, and nearly all the charms away from country life. To have a garden is to have many friends continually near.

What a difference between what Mr. Carlyle calls an "umbrageous man's rest, in which a king might wish to sit and smoke, and call it his," with his roses and honeysuckles, and fuchsias clampering in through the very windows in crowds, and the dreary, arid prospect around thousands of American houses!

This hardly seems a fair criticism upon our homes. Having been an enthusiastic lover of flowers from childhood, and having cultivated them ever since the use of hands was learned, I cannot recognize its truth; have never known of any such houses as he describes. Yet many Americans writers will declare that slender porticos, fanciful verandahs, sculptured gables, and deep bay windows are often seen in this country without a vestige of a flower or climbing vine about them; while in England the poorest laborer's cot is a bower of greenery; and his little plot of flowers often vies with that of his employer.

It is not always wealth or art that gives to English homes their beauty and picturesqueness, but it is the attention of their inmates to the cultivation of the "green things of the earth."

It is not the latticed casement nor the high gable that attracts the notice of the travelers, but the brilliant flowers and the trailing vines that drape and embower them.

American women live in-doors too much, and thus sacrifice their health and spirits, they cultivate neuralgia, dyspepsia, and all their attendant ills—rather than the beautiful and glorious flowers which God has scattered so abundantly all over the world.

Rose Cuttings—Successful Experience.

A correspondent of the *Rural New Yorker*, gives his experience with rose cuttings, as follows: I put my cuttings into small jars filled with coarse sand and water, with sufficient of the latter to be about a quarter of an inch above the sand. I then plunged the jar into a slight hot-bed and let the cuttings have all the light and sun possible—never shading once. In about eight weeks I thought I would have a look how the cuttings were going on at the bottom, as they appeared very healthy at the top; fauzy my delight to find that the new roots had covered the sides of the jar, and were matted together in such a way that I had to wash the sand away under a tap to be able to separate the cuttings without breaking the roots. I call this "striking like willows;" some bits with only one eye at the top struck almost better than any; others, where I put perhaps two eyes beneath the surface of the sand, have struck from every eye. I can assure you I never saw cuttings so well furnished with roots as these were.

Out of about 120 cuttings of some three dozen different kinds of roses, I only missed striking fifteen, which I think is a very encouraging result; anyhow I shall consider it the road royal, and experiment again in a similar manner in summer, when I shall pay more attention to the preparing of the cuttings and the way they will strike the readiest. The beauty of my system is its extreme simplicity; the trouble or labor is nil; beyond the mere procuring of the cuttings, all one has to do is to leave the jars alone, only giving a little water from time to time to replace what has been lost by evaporation.

As to the size of cuttings, I have put in anything—thick or thin, pithy or weedy, straight shoots or jointed ones, shoots with from one to six eyes—only taking care that the cut in every case was a clean one, such as a good sharp knife will make. M. K.

How to KEEP FLOWERS BLOOMING A LONG TIME.—All lovers of flowers must remember at this season that one blossom allowed to mature or "go to seed" injures the plant more than a dozen new buds. Cut your flowers, then, all of them, before they begin to fade. Adorn your rooms with them, put them on your tables; send bouquets to your friends who have no flowers, or exchange favors with those who have. You will surely find that the more you will cut off, the more you will have. In this, as in other things, the wise man spoke truly when he said, "There is that scattereth and yet increaseth, and there is that withholdeth more than is need, and it tendeth to poverty." All June roses, after they have ceased blooming should be cut back, that the strength of the root may go to forming new root for next year, and on these bushes not a seed should be allowed to mature.

English Ivy.

The use of English ivies for the purpose of decorating living-rooms is more extensive every year and cannot be too highly commended. Being very strong, they will live through any treatment; but study their peculiarities, and manifest willingness to gratify them, and they will grow without stint. Most houses are too hot for them, as indeed they are for their owners. Neither plants nor people should have the temperature over 65° Fahrenheit. Take care not to enfeeble your ivies by excessive watering or undue heat, and you will see they will not seem to mind whether the sun shines on them or not, or in what position or direction you train them. Indeed, so much will they do themselves to render a room charming, that we would rather have an unlimited number of them to draw upon than anything else in nature or art.

Do you wish the ugly plain doors that shut off your tiny entry from your parlor, to be arched or curved, like those in the drawing-rooms of your richer neighbor? Buy a couple of brackets, such as lamps for the burning of kerosene are sometimes placed in, and screw them in the sides of the door. Put in each a plant of English ivy, the longer the better; then train the plants over the top, against the sides, indeed any way your fancy dictates. You need not buy the beautiful but costly pots the flower dealers will advise; common glazed ones will answer every purpose, for, by placing in each two or three sprays of Coliseum ivy, in a month's time no vestige of the pot itself can be discerned through their thick screen.

The English ivy growing over the walls of a building, instead of promoting dampness, as most persons would suppose, is said to be a remedy for it, and it is mentioned as a fact in the *Paper-Hanger's Companion* that in a certain room where damp had prevailed for a length of time the effected parts inside had become dry when ivy had grown up to cover the opposite exterior side. The close overhanging pendant leaves prevent the rain or moisture from penetrating to the wall. Beauty and utility in this case go hand in hand.—*Journal of Horticulture.*

THE VINEYARD.

Profits of Wine Grapes.

We have taken some pains in traveling through Sonoma, where the wine-grape grows to perfection, to find out the exact profits of the wine business under favorable circumstances. We took our figures for the basis of our calculation from Mr. C. V. Stuart, and made such inquiries of others as to satisfy ourselves that his statement was a very fair one. Everything about his premises shows skill, system, wealth and taste. He has very fine stone buildings—house, barn and wine cellar. In the latter he has a splendid lot of casks and a lever and a hydraulic press.

Varieties.

He has a large quantity of Zinfandel and Malvoisa grapes, which together with his reputation for thorough system, gives him an extra price for his wine. The Sonoma wine bears a little better price in the market than any other. He sells wines at thirty-five to forty cents per gallon at six months old. Plenty of wine is to be had at twenty-five and thirty cents per gallon. His soil produces a full average yield of wine. Let us see how suddenly it is making him rich.

We understand him that a man must start with a capital of \$60 per acre to establish a vineyard and bring it to a paying age. Many have started with less, been obliged to mortgage their property and lose it before the wine could be made to help them out. It is unsafe to calculate upon profits coming back until the seventh year. What comes before that will be spent in casks, cellars, presses, etc.

Reckoning the Profits.

Now let us take the data and reckon the profits of a man who has \$60,000 capital in the savings bank on long deposit bringing one per cent a month. We will suppose him to be a man so thoroughly acquainted with his business that he is to lose nothing by experiments, that he gets a fine locality at a moderate price, makes the best selection of varieties at first, does all his work in the most economical manner and has sufficient income aside from his vineyard to meet family expenses. At the end of the seventh year the capital invested in the 100 acres of vineyard, if left in the bank and the interest compounded annually, would have footed up to \$132,410.

Yield.

Mr. Stuart places the average vintage of a good bearing vineyard at 400 gallons per acre. This, if sold at thirty-five cents per gallon, (much above average price) would bring \$140 per acre, or \$14,000 for the vineyard. Deduct from this ten cents per gallon for the care of the vineyard, making the wine, leakage, etc., and we have left \$10,000 as the net product of the vineyard. This is an income of a little

over seven (and one-half per cent. on the investment—exactly .0755 23.

Contingencies not Reckoned.

In this account we have not considered the danger of insects, mildew, frost, or any of the numerous contingencies to which the business is subject; the value of personal superintendence, nor have we taken into account the rise in the real estate, the permanent nature and security of the investment or the consideration which the ownership of real estate carries with it. There is another consideration worthy of note in this connection.

Have the Dealers the Best of the Bargain.

The wine is generally sold to the dealers on six months credit and shipped in pipes belonging to the grower. Thus the dealer is able to make many sales and collections in time to meet the payment, and is obliged to furnish very little capital of his own. The hutter seems to be on both sides of the dealers' bread, according to the growers' account. We hope the reputation and the price of California wine may be so enhanced as to pay a better profit than our figures estimate. Perhaps some one does make a better showing. Let us hear from such an one. C.

Catawba Grape.

EDITORS PRESS:—In Sonoma Wm. M. Hill is experimenting with Catawba grapes, with a view to establish their culture extensively. Through the valley of the Mississippi they have a taste, and pay a better price for Catawba wine, than any not imported. We are strong in the faith that many of the foreign grapes that grow so successfully here, will make a far better wine than the Catawba, and that people will learn that fact in spite of their prejudices. When our wine growers understand the manipulation of wine, as well as they do in France, or Cincinnati, or Hammondsport, and the different wines are so thoroughly known that each will sell on its merits. We believe that if the wine business is so poor that our wine men have only half a loaf, the others will have no bread. There is no question in our mind but that Catawba wine can be produced better and cheaper here, than in the east. But is there time to establish a paying business in the Catawba, before people learn that Zinfandel is better? It seems to be the general impression among grape growers, that the Catawba, Isabella, etc., require longer pruning than the Mission or foreign varieties. We believe that many will try the experiment of trellising such varieties as are grown in the east. C.

MISCELLANEOUS.

PRESENT AND FOSSIL BIG TREES.—Professor Asa Gray, the retiring President of the American Association for the Advancement of Science, gave at the opening session an interesting sketch of his botanical observations at the West, referring particularly to the "big trees" of California, the *sequoia gigantea*, their history, and relation to the fossil trees of geological ages. Of the possible theories respecting these forest phenomena, Professor Gray maintained that they were the lineal successors of a pre-historic race of trees which once crowded the hills and valleys of the world. His argument is summed up as follows: At the beginning of the tertiary period the northern temperate zone was a region of perpetual summer. Gradually glaciers rolled down from the north, driving all vegetation far to the south. Then a warmer climate came again, and freed the greater part of the northern hemisphere from its fetters of ice. As these melted away vegetation extended northward, but not to its former limits. These facts furnish a clue to the history of the "big trees." If their ancestors were numbered by hundreds of thousands, their fossil remains must exist in the strata formed by the great ice-flood that swept over the northern half of the globe. Research has found the fossil *sequoia gigantea* throughout the miocene formations of northern Europe, and in those of Iceland, Spitzbergen, Greenland, Alaska and the Rocky Mountains. All of these fossil specimens are almost the same as the "big trees" of to-day. This crucial test shows that before man sprang from the dust of the Garden of Eden, according to Genesis, or was evolved from the ape of northern Africa, according to Darwin, the *sequoia gigantea* belted northern America, Asia and Europe, and the islands of the northern seas.

A PYROMETRIC PAINT.—A paint that changes color according to the heat to which it is exposed would be valuable on parts of machinery which are inaccessible to the touch, but can be seen. The *Journal of Applied Chemistry* recently described the property of certain double salts which vary their color according to temperature, and Professors Thurston and Mayer, of the Stevens Institute, recommend them as a method of indicating a hot journal. Mixtures of iodide of silver and iodide of mercury, also iodide of silver and iodide of copper are proposed as being particularly sensitive. Iodide of mercury alone could also be used. These salts go through a variety of colors from scarlet to black, and would at once indicate the temperature of any part of the machinery coated with them. The suggestion of the accomplished professors of the Stevens Institute may be worthy of a trial.

NEW CASE-HARDENING PROCESS.—A resident of Montreal has recently patented in the United States a new process of carbonizing wrought-iron articles. Charcoal, coal dust, oil, bone dust, have each been used for this purpose; but strangely enough, one of the most highly carbonized substances, and one most easily accessible to an iron worker, has been overlooked. This is molten cast iron, and the inventor prepares a bath of it, having previously eliminated any phosphorus and sulphur it may contain. Spiegeleisen is especially recommended for the purpose; but good malleable iron, melted in a cupola with charcoal, anthracite or bituminous coal, or coak, will serve the purpose. Crucibles for melting small quantities, or reverberatory furnaces for large masses, may be employed. The cast iron readily yields its carbon to the immersed articles, and this element would rapidly become exhausted if no means are taken to continue a supply. To obviate this, the crucibles and furnaces are lined with a coating of charcoal powder or plumbago with which nitrogenous matter has been incorporated. Leather or horn shavings will do for this purpose. If the process were carried out on a large scale, the cast iron from which the carbon has been eliminated could be at once sent to the rollers and made up into bar iron, another melting being used for a second case-hardening operation; and many other changes of detail will probably suggest themselves to our practical readers.

THE STEAM ENGINE AND CIVILIZATION.—In discussing this question the *Quarterly Review* says: The steam-engine, mighty as a slave, is the hardest and most brutalizing of masters. It has called into existence a new class in the social scale, a class unknown save by name a century ago, a class which no great statesman has dared look in the face. This class is that of the operatives, the men, women, and children who are the Helots of the steam-engine. Without that culture of the intelligence which every craft necessarily produces in the craftsman; without that healthy simplicity which attaches to agricultural and open-air employments; shut out from the influence of man, in his industrial and social activity, by the many-windowed walls of the factory; shut out from the light and voice of God, as he speaks in the aspects of nature, the operative class is hourly adding up a terrible score which society will some day have to liquidate.—*Scribner.*

PHOTOGRAPHING THE EYE AND EAR.—Dr. Vogel writes to the *Philadelphia Photographer* as follows: "That the interior of the human eye has been photographed is well known. The experiment is a somewhat cruel one for a living subject; still there are victims who stand it. I know, for instance, a very handsome young lady, whose brother is a physician, who patiently takes extract of belladonna until the pupil has become sufficiently enlarged; the interior of the eye is then illuminated with magnesium-light, and photographed. In a similar manner has the ear been photographed, that is to say, the tympanum only. A tube is inserted, in which is a mirror, inclined at a certain angle. The mirror throws light into the interior of the ear. The mirror is also provided with a central hole, through which the illuminated tympanum can be inspected. A system of lenses projects an image on the sensitive plate, and the picture is made in the ordinary manner."

PERIODICITY OF STORMS.—M. Charles Sainte Claire Deville read not long since a memoir before the *Academie des Sciences*, quadruple symmetries and their application to the study of electric and atmospheric phenomena. He brought forward evidence to show that storms, auroras, etc., almost always occur after periodic intervals of ninety, thirty, and ten days. Also that there is a periodicity attached to the thirteenth, fourteenth, and fifteenth days of the month as shown by the reports of the Meteorological Office. During the last two years, two or more of the days of from the 11th to the 15th of every month have been marked by winds, rains, squalls, thunder storms and auroras. Furthermore, a symmetry of phenomena can be detected at the dates 4th, 13th and 24th of each month, of which M. Deville cited numerous examples.

WELLS FOR IRRIGATING.—The farmers of Contra Costa have gone into the business of digging wells and erecting wind-mills for local irrigating purposes. The soils of that county are highly productive, but many of the best tracts of land are liable to drouth, excepting in seasons of abundant rain. The grand irrigating ditch for which they have been waiting will probably not reach down to Antioch for several years to come. In the meantime, a great deal of irrigating can be done in the manner above noted. The editor of the *Antioch Ledger* the other day counted twenty-five wind-mills between that town and Point Timber. Water in the wells is plentiful, and reached without going to any very great depth.

NOISY MACHINERY NOT NECESSARY.—A New England mechanic thinks we need have no noisy machinery, for that of the organ or piano is as complicated as a cotton mill, and yet by careful packing with leather and wool of the various parts, gives us nothing but sweet sounds. Blessed be the day of silent inventions, when rubber tires, musical whistles and low humming machinery, shall make life endurable in every crowded city. Why cannot our manufacturers line and underlay their machinery with rubber, felt, etc., and deaden the din of our workshops, so that it shall be less weary-some to the head, and thus effect a material saving in the physical strength of workmen?

FARMERS IN COUNCIL.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

The Club met at the call of the President, Dr. Carr, on Friday evening, Oct. 4th. Not being a regular meeting it was not numerously attended, but the essay rendered it a profitable one to the listeners.

Communication was received from the Santa Cruz Farmers' Club sending to the President and Secretary complimentary tickets to their Fair which takes place next week, on Thursday, Friday, and Saturday, the 10th, 11th and 12th inst.

The State Convention.

Mr. Hyatt being called on as one of the delegates, said that as the proceedings had been already published in the RURAL PRESS, and some other journals, there was now no occasion to refer to them at length. He would, however, remark that although it was announced that a committee of those calling the Convention in Sacramento would receive the delegates, the latter found not one waiting to receive them. Mr. Hyatt also spoke of other difficulties encountered.

Mr. Dewey said there were present, at different sittings, from 30 to 50 delegates, and that it was one of the most agreeable Conventions he had ever attended. The members soon became acquainted with each other and transacted their business in good humor. There was also a meeting of the Board of Directors of the California Farmers' Union. They seemed to be animated by a great deal of zeal in the cause. Gen. Bidwell, as President, will, I think, prove a very noble and effective leader.

Mr. Pryal had attended nine or ten Conventions in this State, but never met with a more agreeable or intellectual body of men. He believed that great good would result from their deliberations and that they would do much towards relieving us from the maneuvers of the land sharks and the grain rings. He thought farmers should cooperate in building ships.

Mr. Montandon was called on by President Carr, and continued his essay on

The Principles of Arboriculture.

Ladies and Gentlemen: In my address delivered at the previous meeting of your club, I have explained the manner of vegetation and flowering of trees, and showed how to lead the sap from one point to another so as to bring it to where it was most needed—to draw it away from parts that already had more than a sufficiency, and lead it to where it was wanted. Science is always best understood by the people when it is rendered agreeable and interesting, and I shall do my best in the following observations to render the science of arboriculture as attractive as possible.

Subdivision of Buds.

If one observes long and well the progress of tree vegetation, he will frequently meet with samples of perfect bifurcation, that is to say, he will see two branches starting exactly from the same point, and will be forced to recognize that they took birth from the same bud, accidentally divided into two others. Often one sees even more branches taking birth from the same center, primitively united, as if the same bud had sub-divided itself into several others, each one having its separate individuality. The multiple branches of which I speak, differ essentially from opposite branches, and born each of their respective bud, gather spontaneously and naturally on the opposite sides of the stem of certain trees or plants, or are artificially obtained by buds implanted symmetrically by the hands of the arboriculturalist. What especially distinguishes and characterizes the natural bifurcations or multiplications, of which nature offers us here and there some examples, is that they are born from one and the same bud.

What is the origin of these rare bifurcations and multiplications? Nobody that I know of ever studied this question before Mr. Millot Brulé; nobody had suspected the nature of the mysterious causes of these singular accidents. Would one believe it, this bifurcation or multiplication of the bud is simply the result of the bite of a caterpillar or any other destroying insect. It is sufficient that an insect bites a bud at its point, that it will double itself, trebling, and even quadrupling its buds into several buds, hereafter distinct and separate, each to run separated through all the phases of vegetation. What is for the wood bud is also for the fruit bud; it multiplies, and bifurcates itself also, under the process and very deleterious action in appearance of the mandibles of an insect. What has happened for the first bud, may also happen for its secondary ones; they can be sub-divided and can multiply themselves indefinitely. Until now, remark it well, I have announced but a fact; the fact of the multiplication of a wood or fruit bud by the bite of an insect or other similar cause; but this faith would be inexplicable, or better, even impossible, if we do not admit that the wood or fruit bud is not a being simple and unique, that it is to the contrary, in itself, essentially multiple, at least in power, so that according to circumstances it may develop in its normal unity, or in its abnormal multiplicity. What is more probable and rational than this theory, which is in fact as we have already shown, and as we might prove, by the necessary expression of

facts. Is it not natural to admit that the terminal or lateral bud of a young plant contains the germ of all the branches and of all the buds which ought to develop themselves successively; we find already such an expression in an ancient author in these words: "*Universa ligna quæ habent in semetipsis, seminemendi generis sui.*" That is to say, that the first germ of the first tree, contained in itself the germs of all the trees that afterwards sprung from it. This is somewhat metaphysical, we will come back on facts, strong with the observation of these natural bifurcations, of the transformation of one bud into two really opposite ones, also of his own theory. The first discoverer naturally put to himself the question, whether with will and intelligence, he could not perform what the insect without knowing, had performed instinctively. If by scratching with the point of his pen-knife, or with some glass paper, the top or the sides of a bud, he could not compel in a similar manner this bud to multiply indefinitely. Hardly had he put himself this question, than he had succeeded beyond expectation. He began in 1849, and in 1851 at Strasbourg, in the garden of his brother-in-law, the General Reibel, he rendered a numerous assemblage, composed of the most prominent arboriculturalists, witnesses of the most extraordinary results. I will not go into any more details, it would be useless, as the principles of the trade are too technical for the generality of my audience. We arrive at a perfect and essentially operative process, by the application of glass, paper, or any rubbing body, or the knife. All buds are composed of an axle placed in the center of a cone, surrounded by scales spirally superposed; it is sufficient to make a proper incision on any of these scales, to see the appearance on the lateral sides of the scale chosen of two new buds; thus buds can be sub-divided into two, four, six, eight, according to the strength of vegetation of such bud, and as heretofore we have already shown the manner by which to obtain the required strength, it can be subdivided indefinitely, to such a degree as sometimes to form quite a mass of buds. The buds obtained by the gradual rubbing with glass or paper are far more numerous than those obtained by the knife, besides the operation will also be more diversified and thus one can without trouble realize the most singular accidents of vegetation. Thus we can obtain on all timber the required curves or squares which numberless branches of industry are in search of.

The Thousand Fancies of Cabinet-Making and Navigation.

It is sufficient, in fact, to develop one or more buds, round, acute or rectangular, to furnish by natural means, what has previously been obtained, but incompletely, by troublesome artificial ones. I think this to be a sufficient illustration to satisfy you as to the possibility of training a tree to whatever shape or form your mind may have a fancy to, and thus enable you not only to add beauty to utility; but its very process gives you to understand the importance of careful cultivation and its ultimate result.

At this point Mr. Montandon began to illustrate his address by experiments in pruning performed on some branches of fruit trees that he brought with him.

It is often necessary that we get good shape to the tree as well as fruits from it. By forming a tree into a certain shape, it not only saves space in small gardens, and around houses, but more than that, it beautifies the place more than any forest tree we can plant there. It will also

Improve the Mind,

For I think that the mind is rendered beautiful and harmonious by the beautiful and harmonies in nature. I want to explain it, so that the ladies and gentlemen present can thoroughly understand me. It will aid them to do something with their time, and thus probably prevent the development of that ennui caused by want of occupation that drives so many to the lunatic asylum—some to San Quentin. It would take too much time to speak of any but

The General Principles of Pruning.

I will take the peach first, as the most difficult to cultivate properly. Let this be a tree coming from the nursery. We ought to take a tree from the first graft. I will then present the appearance of a rude stem. As soon as the branches have developed themselves in sufficient quantity and in the proper places it will be necessary to watch the tree from every point of vegetation. Some of the branches will take up too much of the nourishment necessary for others—necessary to the production of fruit. These ought to be cut away to 2 or 3 leaves. Then pruning will compel the fruit buds to develop themselves well. The branches ought to be then cut back to one leaf. As a branch is trimmed back, it will leave a little useless wood. Everywhere that a cut is made in a branch the sap will be attached to that point. If it develops a second time it ought to be cut back again. By keeping these branches back we invigorate the mother branch, and there will be no bifurcation whatever. The mother branch receiving all the sap will compel the terminating buds to develop themselves and produce good fruit.

When the tree gets older—sap in the second or third year—we must watch the development of the smaller branches, and compel them to bear fruit by pruning in the usual way. If the smaller branches are very weak, they ought to be pruned, and they will develop fruit buds to any quantity. When the tree is weakly in vegetation we ought to act so as to protect the leaves.

When the leaf becomes old it loses its respiratory qualities—this is experienced in viniculture. After we have cut our peach tree thus, [experimenting] it will not need any further cutting of the new wood. In pruning we ought not to stop the current of the sap, but should make it take a different direction. The peach tree possesses the singular property of having no buds where it is pruned—if it has, the pruning has not been properly performed. A new pruner may, where this is the case, prune the wood buds without observing, and the branch will then die. Where there are more than one we ought to keep the lowest bifurcation, thus: [Experimenting.] Let this [holding up a branch] be a peach, because the apple and the pear require a different treatment.

We will preserve these branches [experimenting] which are in the direct line with the mother-branch. Every branch has not wood buds, and unless we preserve the upper branches the lower ones will develop only wood, and will bear no fruit for the season. By pruning early we preserve all parts of the tree, from the highest to the lowest, not a single part being bare. By this method we take away the useless branches and save the useless sap, and get the best fruits that can be had by artificial means. If we mean to cut the lower branches recently formed, we must be careful not to have the lowest branches longer than the upper, and unless we get as strong branches as the lower, it will be impossible to form them, the tree will be sickly, and we will not get the results that we mean to get.

The apricot and the cherry can be treated as the peach tree, and they have the property of throwing out good buds wherever they are pruned. This somewhat overthrows the system of

Pruning in America.

I would only apply this system for table fruits, not for market fruits."

In answer to a question by Mr. Hyatt, with reference to the growth of occasional buds, Mr. Montandon answered that the gardener ought to watch such buds and prune them back before they can develop themselves into wood-buds. If a tree grows very strongly, and it is cut too much back, we will compel the branches next the mother branch to develop themselves into wood-buds.

Mr. Hyatt—"Is it not better to cut them back a little at the end? It stops the growth of the buds."

Mr. Montandon—"The first year it is not; then I cut next the mother branch. By cutting thus, only one or two buds will develop into wood-buds. Then, year after year, we need never cut more than four or five inches beyond the mother-branch, and we can have the tree properly adorned to the end of its life—say for thirty years—otherwise it will not live more than ten or twelve years. The Rosaceous family of trees develop as much in one bud as in two. If we allow all buds to develop, they will become weak, and so poor and sickly as to drop off. They will develop too at the expense of the others, and we will get strong and good-for-nothing fruits.

[The concluding portion of Mr. M.'s lecture will be given in our next issue.]

New Members.

On motion, Mr. Applegate of Brooklyn, was elected a member of the Club. Mr. Applegate is an owner in an extensive ranch near Plainsburg, San Joaquin Valley, and has harvested over 1,000 tons of wheat this season. In that section the yield was from 5 to 7 bushels above the estimate before threshing.

A Public Drinking Fountain.

Mr. Pryal spoke in favor of erecting a drinking fountain in the most frequented part of Oakland, by subscription, we suppose. The proposition was heartily endorsed by Dr. Carr and Mr. Dewey, but no immediate action taken.

Monday Evening, October 14th

Was decided on for the next meeting. As some members have suggested that Monday would be more convenient for attendance than Friday, the meeting will be so held for once on trial.

Santa Cruz Farmers' Club.

Club met Saturday, P. M., Sept. 21st. The following communication from F. A. Hihn was read:

To the Farmers' Club of Santa Cruz:

GENTLEMEN—The Sentinel of the 14th inst. contains the report of your Committee on Assessments presented by B. Cahoon, Chairman of said Committee and ordered to be placed on file. Said report contains the following: "The Augmentation Rancho, owned by Mr. Hihn and others, was assessed as follows: Mr. Hihn's portion at \$2.25 per acre, and the other owners at from \$5 to \$10 and upward, and some of the owners their land confessedly not as valuable as that of Mr. Hihn's."

This statement is utterly inconsistent with the facts of the case, which can be easily proven, even to the satisfaction of Mr. Cahoon. Feeling assured that the Club desires to know the truth, I ask that the report be returned to your Committee for further investigation, and in case such action is had your Committee is respectfully solicited to hear such evidence as I may be able to produce in relation to my assessment.

Respectfully yours, F. A. HIHN.

On motion of Mr. Cahoon the request of Mr. Hihn was granted, and that he be invited to appear before the Club and make such statements respecting the report of the Committee as he may deem proper.

The Fair coming up for discussion, Mr. Cahoon said that it would be necessary to appoint a Ladies' Executive Committee of Arrangements for the Fair. He had consulted a number of ladies on the subject, and they were willing to render such assistance necessary to make the Fair a success.

On motion, the following ladies were appointed on the committee:

OF SANTA CRUZ.—Mrs. Boston, Mrs. H. Poland, Mrs. Dr. F. E. Bailey, Miss Mary Wood, Mrs. Blackburn, Mrs. A. P. Jordan, Mrs. West, Mrs. Gilbert, Mrs. J. M. Cutler, Mrs. E. H. Heacock, Mrs. Fullman, Mrs. E. Burnheim, Mrs. D. M. Locke.

OF SOQUEL.—Mrs. B. F. Porter, Mrs. E. Cahoon, Mrs. W. H. Hobbs, Mrs. Uriah W. Thompson.

OF WATSONVILLE.—Mrs. John Porter, with power to appoint four others.

The Secretary was instructed to write to these ladies, and request their acceptance of the same.

Mr. Cahoon gave notice that the Executive Committee would meet at the Skating Rink on Monday morning, Oct. 7th, to prepare it for the reception of articles.

The Club then adjourned till Saturday, Oct. 5th.

R. CONANT, Secretary.

San Joaquin Farmers' Club.

Club met on the 28th. Dr. E. S. Holden, President, in the chair. William G. Phelps was, on motion, elected Secretary pro tem. President Holden, from the delegation appointed to attend the State Farmers' Convention at Sacramento, September 28d, reported that four delegates had attended, viz: E. S. Holden, L. H. Brannock, James Smyth, and William G. Phelps, and had taken an active part in the proceedings; that a State Farmers' Club was organized, a constitution and by-laws framed, and a President, five Vice-Presidents, Secretary and Treasurer elected.

The office of the club is located in San Francisco, and the annual meeting is to be held at the time and place of holding the State Fair. It was at first proposed to hold the annual meeting at the State capital; but Mr. Smyth said it was not a sure thing that the capital would always be at Sacramento, and it was moved to amend by inserting "Sacramento" instead of "the capital."

Mr. Phelps strenuously objected to any place being named in the motion, saying that the State Club ought to follow the State Fair wherever held; that the State Fair was the only time and place when and where the principal farmers of the State could be brought together, and the motion was finally passed in accordance with Mr. Phelps' suggestions.

A Farmers' Bank.

In relation to the organization of a Farmers' Bank, Mr. Smyth stated to the club that he had conversed with a number of delegates to the State Convention from other districts, and they all seemed to favor the establishment of a State Bank, with branches in the different agricultural districts of the State.

Various subjects were discussed at the State Farmers' Convention and opinions advanced as to the best method of cultivating the soil, fertilization, and why it was that the farmer did not realize more from his produce? Wm. Gouverneur Morris of Suscol, thought one reason was that the people of the Pacific Coast did not adopt the National currency.

Wm. G. Phelps of San Joaquin, said that he did not coincide with Mr. Morris, and stated that he thought the main reason on account of the exorbitant harbor and wharf dues and other incidental expenses incurred by ships entering the port of San Francisco.

He said that it cost a ship of 1,000 tons, entering the port of San Francisco for pilotage, harbor dues, discharging crew, taking in cargo, shipping crew, and clearing for sea again, about \$5,000. Not taking into consideration the expense coming in ballast, this is a heavy tax, and shipmasters charge accordingly. This all comes out of the farmer.

Free Trade.

The only remedy Mr. Phelps could think of was to abolish all harbor dues and let vessels come in free from all charges whatever. Mr. Morris inquired if Mr. Phelps meant "free of duty." Mr. Phelps replied, yes; he was in favor of Free Trade—that was the only salvation of the farmers on this coast.

Mr. Morris said he thought that the exorbitant port charges and wharf dues ought to be abolished, but he was not in favor of free trade. So much in relation to the action taken at Sacramento the early part of last week.

The President, Dr. Holden, read to the club a communication sent him from the Department of Agriculture at Washington, accompanying which were samples of winter rye and white winter wheat. The samples were exhibited to the club and distributed to the members.

Mr. Hitchcock moved that the subject for discussion at the next meeting be "What are the best means of arriving at a correct estimate of what the next grain crop will be, so as to be prepared to take advantage of the market, and, by sending information abroad, induce vessels to come in greater numbers and carry the grain to foreign markets at a low rate." The motion was adopted, and the club adjourned.

Meeting of October 5th.

Meeting of October 5th, President Holden presiding.

A committee on financial matters appointed at last meeting made no report; there were no other committees to report. President Holden made a few remarks in regard to the proposed formation of a Farmers' Bank. He said that there was between twenty and thirty million dollars worth of real estate in this valley owned by farmers, and that by giving security they could raise in Europe all the money they required at a rate of interest ranging from three

to five per cent. per annum for twenty years.

The bank is an actual necessity to the farming community, for although there are three banks here in this city, they are of no use or benefit to the farmer. San Francisco banks have an abundance of capital, and they refuse to loan money outside of San Francisco.

Farmers are the main stay and producers of the wealth of the nation, but here in California farmers are serfs and slaves to capitalists, paying them upwards of \$6,000,000 annually for interest, sacks, extortionate freights, etc., which they can save to themselves by establishing a bank with their own money. The establishment of the bank is an easy task, the money can be procured as stated and it would be necessary to procure two banking men, experts who understand the theory and practice of banking thoroughly to have charge of the institution.

Properly established, the bank will render the farmers independent, enable them to charter ships, buy sacks and meet all other items of expense and have money to loan.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

Club met Oct. 5th, President Casey presiding. The question selected for discussion at the next meeting is: "Resolved that every Enactment framed by the Legislature should be submitted to the people for ratification before it becomes a law."

The Club next took up the regular question and discussed it with considerable energy: "Resolved, that the game and fish laws are unjust to farmers and should be abolished."

Mr. Dubois favored the law. He said we have different senses and it is our duty as well privilege to gratify them. Men pay their money to gratify their senses. The game birds gratify our sense of sight and sense of hearing, as well as sense of taste, and it is a wise provision of the laws to protect them. The game birds were also

Great Destroyers of Worms

And insects, and are worth protecting on that account alone.

Some men so love to see the wild game that they always keep on the frontier of society, and many of them experience more real enjoyment than those of the brick mansion who shed tears of sympathy over the supposed hardships of the backwoodsman.

The lack of a proper fish law in Pennsylvania in earlier times permitted all the shad to be run out of the Susquehanna and other rivers, and even here in California much injury has been done to the fish in some of the streams.

Mr. Burgland don't believe in restricting any man in his right to take either fish or game to supply the wants of himself or family. He thinks that it is a wise provision of nature that the stronger live off the weaker. The strong become stronger and the weak disappear; it always was and always will be, and it is right.

Mr. Holloway said this law took its origin in England to benefit the aristocracy at the expense of the people. Here it is the town people infringing on the poor in the country. The quail is not a destroyer of worms and insects, but of the farmers' crops, and he is not allowed to protect himself. The dove is equally as fine a bird and less destructive, but the law does not protect it. Sports from the towns come out and trespass and shoot them by the score, and that is all right, but if a poor farmer should shoot at the troublesome quail he is brought up before a town court, has to fee a town lawyer, and a number of other officers. Oh, it is a shame and an outrage! Then the fine is so heavy that if a man should chance to kill a few it would nearly break him up. There is still a worse feature of the law; one-half goes to the informers, thus one neighbor is

Bribed

To inform on another and persecute him, so it stirs up strife among friends.

Then again humanity would dictate that sports should not be encouraged in running a horse nearly to death to get a shot at a deer; it is cruelty to the poor horse. Then you can't prevent the gay "larks" from town from trespassing on your farms and breaking your fences all down, without a great deal of trouble.

Mr. York wanted to put in a plea for the birds. They help to refine and ennoble our

Higher Nature.

Every soul is thrilled by the sight of the birds and its workings are more in harmony with our best interest by listening to their sweet songs. The deer are among the most beautiful of God's creatures and we should preserve them. They do no hurt and we should protect them. If the farmer suffers for violating the law he should stand from under the law; if he violates the law, let him suffer. That is God's order; we suffer whenever we violate any of His laws relating to us. We should preserve the game and hand it down to our children. It is linked with our early associations and is dear to our hearts and we desire our children to love it also.

Mr. Haskell thinks the object of the law, good. It is not to prevent the killing of game, but to protect and preserve game that it may be killed at the proper time, as the herdsman protects and cares for his flocks, but in the full-

ness of time, turns them over to the butcher to be slaughtered for human use. Game is useful; it forms a savory, wholesome food and should be protected at such times as it needs protection. There can be but one side to the question.

Protection to Farmers.

Mr. Cadwell favors the game law, but also favors giving the farmers who raise the game, more protection. Sporting men should not be allowed, as soon as the law expires, to kill and scare away all the game that the small farmers have been at the expense of raising. The quail that a farmer raises should be his, the same as his hens, the cost of raising is nearly the same.

Mr. Dubois said that a bountiful Providence had given the game to us for use and it should be protected and handed down to our children and not destroyed, as it would be if there were no game-law.

Mr. Burgland said that the quails destroyed his garden, the labor of months, and the law prevented him from killing them off in self-defense, which is unjust and should be abolished.

Mr. Hobson thought it a shame that a law should be so framed as to prevent a farmer in the hills from protecting his crop; and then it is an outrage not to let a hungry man catch a mess of trout for his breakfast out of a brook running through his own farm.

Mr. L. H. Holloway thought the game would be increased if the law was abolished, and then the poor man would be at liberty to protect his garden and once in a while kill a mess of quail of his own raising.

W. W. Kennedy said that there would be more game if the law was abolished; then surely we should not complain that the law prevented us from destroying a nuisance.

Common Property.

But there is another idea in this connection. "Game is given to us by a bountiful Providence," and therefore the property of all. The lands where the game mostly abound are also the property of all, being unoccupied public lands. Then surely, in justice to all, can the people not make laws to protect the game, their own property on their own lands? Under the present game laws, hunters are not allowed to trespass on those who will take the trouble to post notices.

Mr. J. F. Holloway said farmers would not warn hunters off because they would be called mean and stingy, if they did. What he objects to is extending protection to a class who don't deserve protection against one that does. Why protect but three kinds of game; the poor innocent dove has no protection.

Mr. York said there was but three kinds protected, because there was but three kinds that needed protection. Men persistently try to kill off but the three kinds; others will be added as soon as it becomes apparent that they are in danger. Mr. Burgland thinks man should be protected as well as the game.

Mr. Casey said the quail was very destructive to small fruits; that they had injured him very much, and for several years he had been in the habit of violating the law and taking the chances.

There are many birds about his place that feed on his fruit, but he likes to have them there—he don't even shoot the cherry birds. The hunters are a nuisance; they break the fences. Out by his place they watch the water and kill off the doves. On the Santa Cruz side of the mountains the hunters break down so many fences that the farmers are greatly troubled to keep stock out of their fields and in their pastures. The game law at least, should be greatly modified.

A Correction.

EDS. PRESS:—In my communication in your issue of Sept. 28th, "stick out" was intended for stand out. In the thirteenth line "among ladies" should have read by ladies, in order to convey my meaning correctly. I presume the fault was in my copy. The article was not written in a spirit of criticism, as the reader would naturally infer from your comments. I am not a professional writer, but being somewhat in favor of progression I occasionally take up the pen to make suggestions, which for the want of sufficient time for consideration, (owing to a press of other business day and night,) I often do in such haste that errors are often overlooked and, perhaps, ungrammatical words or sentences made use of. I am glad, however, that you criticised the article in question thus sharply, for I shall be more careful hereafter to delay any article I may write until I can devote sufficient time to perfect it as far as lies in my power. I. A. H.

Colfax, Cal., Oct. 5th, 1872.

We never make a public criticism upon the grammatical construction of a sentence by a contributor, because we, like others are liable to err. What we want is simply language that we can understand, and then if we think we can better its phraseology without altering the meaning, we do it. We are always glad to hear from I. A. H. who has contributed several sensible and highly approved articles for the RURAL.

COST OF GREAT TUNNELS.—The Mount Ceniz Tunnel cost \$975 per linear yard, the cost of the Hoosac tunnel is about \$900, and that of the most expensive in England, the Saltwood, is only \$590.

California State Fair Awards.

[Continued from Page 221.]

Miss Nellie Brooks, Sac., Basket of wax flowers and vases; special premium recommended. Greek Slave; special premium recommended. Two wax crosses; special premium recommended.

Miss Ida Ross, Oakland, Easter cross and flowers, lyre in wax, sheet wax; silver medal recommended for her three entries.

Mrs. A. O. Cook, S. F., collection of wax and preserved flowers; special premium recommended.

Mrs. J. E. Cotter, S. F., decalcomania on satin; special premium recommended.

HAIR, SHELL AND CROCHET WORK, MILLINERY, TATTING, ETC.

Mrs. Springer, Sac., best display of millinery; \$20. Silk bonnet; \$5.

Mrs. H. Kuhl, Sac., best crochet shawl; \$5. Largest and best display of crochet work; special premium recommended.

Mrs. John Minford, Sac., best tatting collar; \$3.

Miss Emma Tubbs, Sac., for tatting; special premium recommended.

Miss L. Coons, Elk Grove, best feather wreath; special premium recommended.

Miss C. Deterding, Brighton, for feather wreath; special premium recommended.

Mrs. D. E. Arnold, Sac., best hair work; special premium recommended.

Miss Emma Winning, Sac., for hair wreath; special premium recommended.

Mrs. E. Parsons, Sac., best preserved natural flowers; special premium recommended.

Mrs. S. T. Smith, Sac., best paper flowers; special premium recommended.

Mrs. A. O. Cook, San Francisco, best phantom leaves; special premium recommended.

Mrs. J. E. Cotter, S. F., best leaf work; \$5.

Mrs. A. O. Cook, S. F., best moss work; \$5.

Mrs. F. Cox, Sac., for moss work; special premium recommended.

Mrs. E. Bigley, Sac., for best shell work (shell castle); \$5.

Mrs. E. Parsons, Sac., for shell temple; special premium recommended.

Mrs. M. S. Bowditch, Vallejo, best assortment of leather gloves; \$25.

Miss Jennie Hill, Sac., best tidies; special premium recommended.

Mrs. Marie Dewey, Michigan Bar, best lace curtain; special premium recommended.

Madam Brosse, S. F., for models for fitting dresses; silver medal.

Mrs. Julia Harvey, for Beaumondaire; diploma.

Mrs. S. M. Hoover, Elk Grove, for tree of Saturn; special premium recommended.

SILK, WORSTED AND COTTON EMBROIDERY.

Mrs. N. Hahn, Sac., best silk embroidery; \$5.

Mrs. H. Kuhl, Sac., for silk embroidery; special premium recommended.

Mrs. R. T. Brown, Sac., for silk embroidery; special premium recommended.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, a lady 72 years old, Sac., best embroidered handkerchief; \$3.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, Sac., best cotton embroidery; special premium recommended.

Mrs. L. Bruckerman, Howland Flat, for embroidered linen handkerchief; special premium recommended.

Mrs. C. L. Cross, Woodland, best ottoman cover; \$5.

Mrs. Joseph Perrin, Grass Valley, best table-cover, raised worsted-work; \$5.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, Sac., best embroidered chair; \$5.

Mrs. Mary Morton, Sacramento, for embroidered chair; special premium recommended.

Mrs. Mary Morton, Sac., Best embroidered sofa cushion; \$5.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, Sac., For embroidered sofa cushion; special premium recommended.

Mrs. M. Hahn, Sac., Best embroidered children's clothes; \$5.

Mrs. L. Mebius, Sac., Best sofa pillow; \$5.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, Sac., For sofa pillow; special premium recommended.

Mrs. L. Mebius, Sac., Best variety of linen embroidery; \$10.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, Sac., For embroidered pillow-cases; special premium recommended.

Mrs. B. B. Cutter, for Mrs. S. E. Robinson, Sac., For fire-screen; honorable mention.

Miss L. Myers, Sac., Best tapestry-work; special premium recommended.

Mrs. J. H. Winn, Sac., For tapestry-work; special premium recommended.

NEEDLE-WORK.

Mrs. S. A. Drake, Sac., Best machine sewing; special premium recommended.

Michael Kraker, Sac., Best display of ladies' and children's clothing, California make; \$25.

AFGHANS.

Michael Kraker, Sac., Best large afghan; special premium recommended.

Mrs. M. F. Gardner, Sac., For large afghan; special premium recommended.

Mrs. H. Kuhl, Sac., Best child's afghan; \$5.

Mrs. R. K. Wick, Sac., Best burial robes; special premium recommended.

QUILTS.

Mrs. E. J. King, Sutter Creek, Best white quilt; \$5.

Mrs. A. H. Wilgus, Buckeye, Yolo county, Best log cabin quilt; special premium recommended.

Mrs. A. Weston, Sac., Best silk quilt; \$5.

Mrs. A. Weston, Sac., Best patchwork quilt; \$5.

Mrs. E. J. King, Sutter Creek, For patchwork quilt; special premium recommended.

Mrs. M. Carrington, Sac., For two log cabin quilts; special premium recommended;

Mrs. W. M. Haynie, Sac., Best home-made quilt; special premium recommended.

Mrs. P. H. Aiken, Michigan Bar, For patchwork quilt; special premium recommended.

Mrs. S. M. Hoover, Elk Grove, Best woven quilt; special premium recommended.

CLOTHING, HATS AND CAPS.

S. Wilsinski, Sac., Best men's and boy's clothing; silver medal.

J. C. Meussdorffer, Sac., Best silk hat; \$5.

J. C. Meussdorffer, Sac., Best soft hat, \$5.

D. H. Quinn, Sac., For finest display and best furs; \$25.

J. C. Meussdorffer, Sac., Best display of men's hats and caps; silver medal.

S. Wilsinski, Sac., Best display of men's clothing; \$10.

S. Wilsinski, Sac., Best display of boys' clothing; \$5.

Fourth Department—Mechanical Products.

CLASS I.—WORKED METALS.

J. Campbell, Sac., Display of wire goods; honorable mention.

Huntington, Hopkins & Co., Sac., Display of bronze locks and window trimmings of the Russell & Irwin Manufacturing Company; diploma.

Display of axes; \$5. For very meritorious and large display of general hardware; diploma.

Display of iron and steel; \$5. Mechanics' tools; \$10. Pruning knives; \$5. Circular saws; \$5. Mill saws; \$5. Hand saws; \$5.

IXL anti-friction metal; honorable mention. Selby shot; honorable mention.

Locke & Montague, S. F., Display of coal stoves; \$5. Tinware; \$5. Laundry stoves; \$5. Farmer's cauldron; \$5. For meritorious display of ranges, boilers and steam table; diploma.

A. M. Adams, Sac., Display of padlocks for railroad cars, etc., of California manufacture; \$5 and framed diploma.

Dr. Justin Gates, agent, Sac., Display of silver-plated ware; honorable mention.

John J. Cass, Sac., Display of pocket cutlery, California manufacture; \$5. Table cutlery; \$5 and diploma.

F. B. Stevens, Sac., Patent pruning shears; \$5.

Huntington, Hopkins & Co., agents, Sac., For Duryea & Co.'s improved angular and ratchet drilling machine; diploma. For Weston & Co.'s ratchet drills and differential pulley blocks; diploma. For displays of brass work; \$20.

CLASS II.—CASTINGS, ETC.

Geo. G. W. Morgan, Sac., Specimen of marbled stone, manufactured by the Union Stone Company, Boston, Mass., under M. Sorrel's patent; \$5.

CLASS III.—MUSICAL INSTRUMENTS, CABINET WARE, ETC., CAL. MANUFACTURE.

Mark Anthony, San Bruno, for combined rocking sofa and bed; special diploma. For chair rocker and lounge; special diploma. For chair and lounge, (to be included in first diploma.)

A. Roman & Co., S. F., Beard's patent folding school desk, Beard's patent study desk; diploma. Double gear school desk; framed diploma.

R. S. Thompson, Napa City, patent spring bed bottom; honorable mention.

J. J. H. Meyer, S. F., carondelet table; special premium recommended.

E. Ford, Gold Run, round burr table; special premium recommended.

John Brenner, Sac., California laurel and walnut-trimmed bedstead, bureau and washstand; \$10 and framed diploma. Best display of furniture (rosewood sofa, easy chair and parlor chairs); \$20. Walnut desk; \$5. Walnut desk with glass door; \$10. Walnut cylinder book case; \$5. Lounge; \$5. Walnut center table; \$5. Leather office chair; \$5. Walnut extension table; \$5. Two quilt embroidered chairs, Turkish chair, set in green, set in blue stripe, quilt and marble top table, chess table, ladies' steamer chair, invalid lounge and mattress pillow lounge; honorable mention.

W. G. Badger, S. F., best square grand piano; \$80.

John F. Cooper, Sac., best parlor piano; \$10. Colibri piano; special premium recommended. Portable pipe organ; special premium recommended.

G. W. Badger, S. F., cabinet reed organ; special premium recommended.

R. C. Marsh, Sac., guitar, California manufacture; special premium recommended.

A. A. Rosenberg, S. F., original composition and Cal. publications, sheet music; special premium recommended.

S. Look, S. F., display of spring beds; honorable mention.

Cooley & Green, Sac., two Crandall spring beds; honorable mention.

A. T. Sherwood, Sac., four spring beds; \$5.

E. Soule, San Quentin, Medallion carved picture frame, square picture frame and inlaid California wood toilet cases; diploma.

CLASS IV.—WOODENWARE, CAL. MANUFACTURE.

Nichols, Falvey & Co., Sac., best display of cedar ware, \$5; oaken ware, \$5; pine, \$5;

[Continued on page 236.]

Wool Growing a Success.

We are asked why wool-growers do not fail as other business men sometimes do. We answer, simply because the growth of the wool and the increase is as perpetual as the time in which they live. It matters not how dark the night is, the wool continues to grow, and it matters not how the wind blows or how it may storm—gestation is never longer than 150 days.

The lambs will average one-half females, and often twins, and they breed the next year, making a double compound—a perpetual growth and no loss. Everything that does not go into market goes back to enrich the pasture; and though the landlord may be very sick, it does not stop the growth of the lambs. Not so with other business.

The mechanic or the man who works for salary has nothing to grow while he sleeps; when his labor ceases, his income stops, and his expenses are perpetual. Hence he is growing poorer more than one-half the time; if he puts in 312 days' labor in a year, and taking his lost time in changing business, sickness, holidays and hours of recreation, he is lucky if he squares his bills and has a few dollars to pay the undertaker on the last round.

It is true there are perpetual expenses attending the sheep or goat business; but under the most unfavorable circumstances, where they can live on the commons without feeding, the meat of the wethers will pay all expenses without drawing on the wool or increase of the ewes. Hence it is like a perpetual stream flowing into a basin; it is only a question of time about filling it to overflowing.

The drawback seems to be that men do not relish living away from thickly-populated settlements and towns, depriving themselves of society for the sake of money. This objection can be obviated. In all new countries there are villages constantly springing up, near which good sheep-range can be had, where the owner can visit his flocks daily, and at the same time give his family the benefit of schools and society.—*Facts and Figures.*

Deep or Shallow Skimming.

There is a subject which is agitating the dairy world to a greater or less extent, and, as usual, "doctors disagree." Such of our readers as have not tested the matter for themselves, may be interested in a perusal of the following extract from a letter written by Thos. J. Edge, Chester Co., Pa., to the editors of the *Practical Farmer*:

In order to avoid the expensive outfit of new cans, we made use of our cream-cans—twenty inches deep and one foot in diameter. One of these large cans would furnish enough milk for six pans filled to the usual depth. After a thorough mixture of the milk, two equal amounts we remeasured off; one of these was placed in one or two of the deep cans, and the other in six or twelve shallow milk pans, and a half-pint of cold water added to each pan, and three pints to each deep can. In each case care was taken to put the different vessels in cold spring water up to the surface of the milk.

For the experiment we commenced skimming 10th mo. 26th, and finished 11 mo. 1st, resulting as follows:

10 mo. 26	skim'd.	2 cream cans gave.
" "	" "	12 pans "
" 27	" "	1 cream-can "
" "	" "	6 pans "
" 28	" "	1 cream-can "
" "	" "	6 pans "
" 29	" "	2 cream-cans "
" "	" "	12 pans "
" 30	" "	1 cream-can "
" "	" "	6 pans "
11 " 1	" "	2 cream-cans "
" "	" "	12 pans "

Showing a gain of 18% lbs. in favor of the deep cans. On the morning of the 2d of the month, both lots of cream were churned, that from the deep cans giving 14 ozs. more butter than the other. I have but one way to account for the fact that the increase in the amount of

this still further, I shall try the experiment again when we get established in our winter quarters. During the experiment, we noticed the following peculiarities: 1. The cream from the cans was not so solid and tenacious as that from the shallow pans, and was much more

occupied about the same bulk during the whole operation of churning, while that from the pans increased in bulk when the churning was about half done: this may have been due to the increased temperature of the first lot churned. Although not yet satisfied as to the difference

in the amount of butter produced by the two systems, yet I am satisfied that the deep cans are best, and except for experiment shall use no other, as soon as I can get a supply. Even if they yield no more butter, it can readily be seen that they will save much work, room and fuel during the winter, and other advantages during the summer.

We are still using both the cans and common pans, and always find the proportion of cream to be eight of the former to from five to six of the latter by weight.

DENTITION OF THE HORSE.

AGE.	Names of Teeth and Number Cut at each Age.	Dental Formula, or Number found in the Mouth at each Age.
Birth,	Temporary molars $\frac{3.3}{3.3}$, central temporary incisors $\frac{1.1}{1.1}$ *	Temporary molars $\frac{3.3}{3.3}$, central temporary incisors $\frac{1.1}{1.1}$ = 16.
6 Weeks,	Lateral temporary incisors $\frac{1.1}{1.1}$	Temporary molars $\frac{3.3}{3.3}$, temporary central incisors $\frac{1.1}{1.1}$, temporary lateral incisors $\frac{1.1}{1.1}$ = 20.
6 Months,	Corner milk teeth, or temporary incisors $\frac{1.1}{1.1}$	Temporary molars $\frac{3.3}{3.3}$, temporary central incisors $\frac{1.1}{1.1}$, temporary lateral incisors $\frac{1.1}{1.1}$, corner milk teeth $\frac{1.1}{1.1}$ = 24.
1 Year,	Permanent molars $\frac{1.1}{1.1}$ (4th molars in position.)	Temporary molars $\frac{3.3}{3.3}$, permanent molars $\frac{1.1}{1.1}$, central temporary incisors $\frac{1.1}{1.1}$, lateral temporary incisors $\frac{1.1}{1.1}$, corner temporary incisors $\frac{1.1}{1.1}$ = 28.
18 Months,	Permanent molars $\frac{1.1}{1.1}$ (5th molars in position.)	Temporary molars $\frac{3.3}{3.3}$, permanent molars, 4th, $\frac{1.1}{1.1}$, permanent molars, 5th, $\frac{1.1}{1.1}$, central temporary incisors $\frac{1.1}{1.1}$, lateral temporary incisors $\frac{1.1}{1.1}$, corner temporary incisors $\frac{1.1}{1.1}$ = 32.
2 Years,	—	Incisors show considerable wear.
3 Years,	Central permanent incisors or horse teeth $\frac{1.1}{1.1}$	Temporary molars $\frac{3.3}{3.3}$, permanent molars, 4th, $\frac{1.1}{1.1}$, permanent molars, 5th, $\frac{1.1}{1.1}$, central permanent incisors $\frac{1.1}{1.1}$, lateral temporary incisors $\frac{1.1}{1.1}$, corner temporary incisors $\frac{1.1}{1.1}$ = 32.
Later in 3 years.	Permanent molars, 1st and 2d, $\frac{2.2}{2.2}$, lateral permanent incisors $\frac{1.1}{1.1}$	Third temporary molars $\frac{1.1}{1.1}$, permanent molars, 1st and 2d, $\frac{2.2}{2.2}$, permanent molars, 4th, $\frac{1.1}{1.1}$, permanent molars, 5th, $\frac{1.1}{1.1}$, central permanent incisors $\frac{1.1}{1.1}$, lateral permanent incisors $\frac{1.1}{1.1}$, corner temporary incisors $\frac{1.1}{1.1}$ = 32.
4 Years,	Permanent molars, 6th, $\frac{1.1}{1.1}$, permanent molars, 3d, $\frac{1.1}{1.1}$, cuspids or tusk teeth, $\frac{1.1}{1.1}$	Permanent molars, 1st, 2d, 3d, 4th, 5th and 6th, $\frac{6.6}{6.6}$, central permanent incisors $\frac{1.1}{1.1}$, lateral permanent incisors $\frac{1.1}{1.1}$, corner temporary incisors $\frac{1.1}{1.1}$, tusks $\frac{1.1}{1.1}$ = 40.
Rising 5 Years,	Permanent corner incisors, $\frac{1.1}{1.1}$	Permanent molars, 1st, $\frac{1.1}{1.1}$, permanent molars, 2d, $\frac{1.1}{1.1}$, permanent molars, 3d, $\frac{1.1}{1.1}$, permanent molars, 4th, $\frac{1.1}{1.1}$, permanent molars, 5th, $\frac{1.1}{1.1}$, permanent molars, 6th, $\frac{1.1}{1.1}$, central permanent incisors, $\frac{1.1}{1.1}$, lateral permanent incisors $\frac{1.1}{1.1}$, corner permanent incisors $\frac{1.1}{1.1}$, cuspids or tusk teeth $\frac{1.1}{1.1}$ = 40.
5 Years,	TOTAL.	Permanent incisors $\frac{3.3}{3.3}$, tusks $\frac{1.1}{1.1}$, permanent molars $\frac{6.6}{6.6}$ = 40.
5 Years,	5.—1.1. Central incisors mark more or less lost. 2.2. Lateral incisors on a level with the central, and its inner on a level with its outer edge. 3.3. Corner incisors lower than the lateral, nick in the inner edge, which is not on a level with the outer. (All the teeth present quite a fresh appearance, the area of the dental region forming a regular semi-circle.)	
6 Years,	6.—1.1. Central incisors mark lost, slightly concave in the middle. 2.2. Lateral incisors mark more or less lost. 3.3. Corner incisors on a level with the lateral, outer edge a little worn. (In the centre of the teeth you can notice a slight yellowish tinge of color.)	
7 Years,	7.—1.1. Central incisors approaching a triangular form. 2.2. Lateral incisors mark lost, centre of enamel slightly concave. 3.3. Corner incisors inner edge on a level with the outer, beginning to lose the mark.	
8 Years,	8.—1.1. Central incisors rounded, central enamel approaching the inner edge. 2.2. Lateral incisors the central enamel more triangular. 3.3. Corner incisors mark lost, central enamel concave in the middle (between the inner cavity and the inner edge of the incisor teeth there is a yellowish or greyish tinge of color.)	

*Represents the number of teeth on each side of the jaw from the centre above and below. The Tusks usually make their appearance from the third to the fifth year.

Little nodes of tooth-like substances, having minute fangs, and inserted immediately anterior to the first molars of the upper, rarely of the lower jaw, are called Wolf's Teeth.

Entered according to Act of Congress, in the year 1872, by Alfred Wright.

14 lbs. butter was so much out of proportion to the increased weight of cream. I have usually found that four and one-half pounds of cream will yield one pound of butter; and I can only account for the discrepancy from the fact that the cream from the deep cans was put into the churn just after it had been scalded, and the butter came in twenty minutes, while the other, put in soon after, required nearly an hour's churning to produce butter. In order to test

easily strained,—and after it was strained, did not get so thick before it was churned. 2. That if both lots were kept undisturbed until that in the pans was ready to skim, the milk in the cans was always sour and sometimes thick, and if set away after skimming would raise no more cream; while if the pans were skimmed when the cans were ready, they would afterward rise a small amount of cream. This I cannot account for. 3. That the cream from the cans

when properly cultivated. It was planted by Mr. Onstott in a piece of open ground, and has now sixteen branches, an average one of which measures 378 feet, the sixteen together measuring 6,048 feet, or a little over a mile and one-eighth, and covering closely an area of 784 square feet. On this vine are thirty-one melons.

Dentition Chart.

We are indebted to A. Wright, veterinary surgeon of San Francisco, for the annexed interesting chart of facts connected with and showing the progress of dentition in the horse, from birth to eight years old, which to many will be valuable for reference as determining the age of the animal by simple inspection of the teeth. In this of course there is nothing new, it is only that "doctors disagree" in minor points, and all have to be once taught whatever they do know. This chart is believed to be strictly reliable, and therefore useful to new beginners in the science of ageing horses.

MARKET PROSPECTS ABROAD.—Advices from Ireland are to the effect that the potato disease is almost universal in that country. We can easily appreciate the nature of this calamity when we understand that the potato is the principal food of a great majority of the people in Ireland. The English agricultural papers state that the same plight has effected 1,620,000 acres of potatoes in England, and that the disease has also extended to Scotland. Potatoes that are apparently sound when dug are found to be affected, for they soon decay when stored for use. The falling off of an esculent so largely used in Great Britain cannot but increase the demand for breadstuffs from the United States; and there is a reasonable probability that good prices will be maintained for wheat and other grains throughout the season. It will be remembered that, owing to the extensive ravages of the foot-and-mouth disease among the sheep in various portions of England, the price of meat has advanced largely, which will still further tend to the maintenance of a stiff market for breadstuffs and cured meats from America.—*Call.*

PUBLIC schools in Japan are fairly inaugurated. The first school catalogue has been published. It dates May, 1872. There are in the Yeddo school, 432 students; of these 221 study English, 112 French and 95 German. There is a demand for capable instructors; and also for talent to devise a change in the system of written language, that will approximate to our mode of letters, instead of complex characters which represent whole words. Evidently Japan is determined to be Americanized in education and in the mechanic arts; and this implies future commerce. Already they are inquiring into the cost of a brewery, of beet sugaries, of blanket machinery, etc. They are acquiring a taste for our flour, our wines and confectionery; and they show kindly appreciation of our clothing.

A REMARKABLE VINE.—The *Sut-ter Banner* gives a description of a citron or pie-melon vine to be found in that vicinity, which illustrates the astonishing productiveness of the California soils

USEFUL INFORMATION.

Japanese Fireworks.

The Japanese have fireworks made expressly to be let off by daylight. A recent festival in Japan, at which a display of these ingenious toys were exhibited, is thus described in the *Yokohama Herald*: "The second day was occupied with exhibitions of the ingenious daylight fireworks, of the manufacture of which the Japanese appear to be sole masters. As usual, these consisted mostly of bombs, which, exploding high in the air, discharged sometimes various colored jets of smoke, and sometimes closely folded packages of wire and paper, which unfold themselves into parachutes of great bulk and symmetrical design. They were sometimes fish, which swam leisurely through the atmosphere to the ground; or snakes, which writhed themselves away over the tree tops; or great birds, that hovered kite-like and motionless for an incredibly long time. Occasionally they took the shape of cottages, temples, human beings, magnified crests of daimios, trees and flowers—almost anything that a lively imagination could suggest. The smoke figures, however, were the most amusing. One of the most frequently attempted was a cuttle-fish, with a body of thick, fuliginous black, and arms of lighter hues. Of course, the illusion was very brief, the wind not allowing the smoke to remain undisturbed for more than a few seconds; but while it lasted it was perfect."

HOW TO UNITE THE ENDS OF LEAD PIPE.—It sometimes happens that there is a necessity for uniting the ends of lead pipe when no plumber is at hand. The thing may readily be done as follows by almost any person in possession of a bit or auger of the requisite size: Whatever the size of the pipe may be, procure a block of hard wood, say four or five inches long, and four inches in diameter; bore a hole straight through the center, so nearly the size of the pipe that the block can be driven on the end of the pipe with a light hammer. If one has a set of auger-bits, it will not be difficult to select a bit of the proper size to make a water-tight fit. Let the block be driven clear on the pipe, so that the end of the pipe will be flush or even with the end of the block. Now place the two ends of the pipe together, and drive the block off one pipe on the other, until the joint will be at the middle of the block. If the hole in the block is made of the proper size, the block will fit so closely that the joint will be water-tight; and, if the ends of the pipe are dressed of true and square, the joint will be so strong that it will sustain the pressure of a head or column of water one hundred feet high. Iron pipe may be united in the same manner. Should the joint leak a trifle, let shingle nails be driven into the wood around the pipe so as to press the timber firmly all around the pipe. This mode of joining pipe will be found very convenient.

BORATE OF MANGANESE.—The *New York Oil and Paint Reporter* says this new dryer "is attracting considerable attention among the makers of varnish. We are informed by one of the largest dealers in this article, that the proper method of using it is to moisten it well with part of the oil before putting it in the kettle, and boil as usual, stirring well, which will produce a superior light colored oil, having besides the advantage of leaving no sediment, which leaves it less expensive than the use of litharge, red lead, or the black oxide of manganese. The stock of borate of manganese in New York is small, and what little there is on the market is procured from the best laboratory in Germany. We are informed that 3% of a pound of borate of manganese is calculated to 100 gallons of linseed oil. The agents for this article guarantee it to be chemically pure, while the commercial borate of manganese has been found by analysis to be largely adulterated, even to the extent of 14 parts of borate of manganese to 86 parts of oxide of zinc.

A NEW ART.—What may truly be called a useful art—as well as one of positive commercial value—is a process discovered by a French chemist of permanently staining wood. It consists simply in plunging the material into two baths, the first consisting of iodate of potassium, and the second of bichloride of mercury. The wood is left in the first bath for several hours, and then placed in the second, where it receives a beautiful rose color. When dried in the air the substance is varnished. The baths may be used a great number of times without renewal, thus rendering the process one of peculiar economy. Another advantage characterizing this process is the important one that, by it the wood thus treated becomes colored almost immediately.

PROPER MODE OF EXTINGUISHING KEROSENE LAMPS.—Explosions of kerosene lamps are frequently produced in the attempt to extinguish them by blowing down the chimney. This is a very dangerous practice, and should always be avoided. The desired result will be accomplished much more certainly and safely by giving a sharp and rather prolonged puff exactly at right angles to the top of the chimney. The draft thus created draws the flame away from the wick, when the carbonic acid immediately below the departing flame also extinguishes the red-hot charred end of the wick.

About Lightning Rods.

A discharge of lightning has a fixed destination; it occurs because of the neighboring position of two bodies which are oppositely electrified, and its course lies between them. It invariably selects the shortest attainable path upon the best conducting matter present. It is, perhaps, made up of the electricity of

A Cloud Thousands of Acres in Extent.

The entire contents of a building constitute but an insignificant fraction of the mass of matter affected by the electrical disturbance and contributing to the discharge. So far, therefore, as regards by far the larger portion of the discharge, the building is merely an incident in its path, and the function of the lightning-rod is simply to present a superior line of conducting matter in all directions.

The Ground Connection

Of the rod must be with the best conducting material which may be present. If it is a gas or water main, with that; if a stream of water, with that; if merely moist earth, then with that. The terminations of the rod must penetrate the earth below the building, just as they must project above the building, so that the rod may be ready to receive the lightning from whatever quarter it may come, and to carry it off to whatever direction it may tend.

A portion of the discharge is required to restore the equilibrium of the building itself, which, in common with all other matter in the vicinity, is in a state of electrical excitement induced by the proximate thunder-cloud. It is therefore essential that the lightning-rod should be most intimately

Connected With All Parts of the Building.

And especially with considerable masses or lines of metal (such as line shafting in mills, or gas, water or steam pipes) about the building, so that the electricity required to restore its equilibrium may be taken from or communicated to it in so many different places at the same time, and in such small quantities as to be nowhere sufficient to produce any mechanical disruptive effects.

The Conducting Capacity of a Rod

Depends upon the extent of its solid cross-section. Increasing its surface by flattening it out increases, if anything, the resistance which it opposes to electricity in motion. Rods made of twisted, corrugated or tubular sheet metal are also inferior to a solid bar, because they are less substantial and less capable of durable application.—*Van Nostrand*.

HOW IT FEELS TO BE BLOWN UP.—A survivor of the recent disaster to the tug-boat *McDonald*, on the Mississippi, thus tells the story of his experience: "I was awakened from sleep by a heavy concussion, followed immediately afterward by a second and heavier one. Everything seemed to give away. There was a rush of hot air, and I found myself going through the air. Something struck me in the side and broke my ribs. I knew in a minute what was the matter, and I had all my senses about me. It seemed to me that I went up a frightful distance. How far, of course, I cannot tell. I left the hot air that started with me, and struck a cooler current. I went up head first, and, as I stopped, turned over and came down head first. The thought passed through my mind that this was unfortunate, for I might strike a piece of the wreck and injure myself. Just then a stick struck me and whirled me over so that I struck the water feet first. The blow left a mark on my right leg about eight inches long, and crippled it so that I could not use it. I took in a full breath of air as I touched the water, and soon began to rise. The thought struck me; what if I came down just in time to be hit by a falling timber? As I came up I thrust up my head to protect it, and caught it on a piece of the roof, cutting it somewhat. My theory is that it was a part of the roof over me. I had followed it up and beat it coming up. I looked round and saw the wreck had already sunk. The deck seemed to be attached in some way to the wreck, for I floated away from it, and began to look around for something to cling to. I found a mass of timber, and was soon after picked up by some men in a skiff."

TO BLEACH LINSEED OIL.—Put in a glass jar some *bona fide* new linseed oil (from the oil pressing works—not the shops)—pressed from fine Eastern seed, in the sunlight or on the top of the house—with a piece of sheet lead (scraped bright) inserted part in the oil and part in the atmosphere of the jar. Cover over with glass the mouth, so as to admit air and light freely to circulate, but not the rain to enter. In a few weeks the oil bleaches, and to the lead between wind and water a mass of mucus attaches itself, which is withdrawn by gently taking out the lead, re-scraping, and again inserting until the oil becomes of the lightest tint.

GLAZING FOR FRESCOES OR CASES.—Mixed with Benzole or Canada balsam, paraffine is said to be superior to soluble glass for glazing over frescoes. By covering the interior of wine casks with a thin film of pure white paraffine when in a melted state, the wine is prevented from spoiling or evaporating, as it will otherwise do through the wood.

VERMILLION PAINT.—The tendency of paint made from vermilion (cinnabar or sulphide of mercury,) when mixed with white lead, to turn black or brown in a short time may be obviated by mixing with the dry paint, before adding the oil, one eighth of its weight of flour of sulphur.

GOOD HEALTH.

Great Eaters.

Great eaters never live long. A voracious appetite, so far from being a sign of health, is a certain indication of disease. Some dyspeptics are always hungry; feel best when they are eating, but as soon as they have eaten they endure torments, so distressing in their nature as to make the unhappy victim wish for death. The appetite of health is that which inclines to eat moderately, when eating time comes, and which, when satisfied, leaves no unpleasant reminders. Multitudes measure their health by the amount they can eat; and of any ten persons, nine are gratified at an increase of weight, as if mere bulk were an index of proportion, decisive proof of existing disease; showing that the absorbents of the system are too weak to discharge their duty; and the tendency to fatness, to obesity, increases, until existence is a burden, and sudden death closes the history. Particular inquiry will almost invariably elicit the fact, that a fat person, however rubicund and jolly, is never well; and yet they are envied.

While great eaters never live to an old age, and are never, for a single day, without some "symptoms," some feeling sufficiently disagreeable to attract the mind's attention unpleasantly, small eaters—those who eat regularly of plain food—usually have no "spare flesh," are wiry and enduring, and live to an active old age. Remarkable exemplifications of these statements are found in the lives of centenarians of a past age. Galen, one of the most distinguished physicians among the ancients, lived very sparingly after the age of twenty-eight, and died in his hundredth and fortieth year. Kentiger, who never tasted spirits or wine, and worked hard all his life, reached a hundred and eighty-five years. Jenkins, a poor Yorkshire fisherman, who lived on the coarsest diet, was one hundred and sixty-nine years old when he died. Old Parr lived to a hundred and fifty-three; his diet being milk, cheese, whey, small beer, and coarse bread. The favorite diet of Henry Francisco, who lived to one hundred and forty, was tea, bread and butter, and baked apples. Ephraim Pratt, of Shushbury, Mass., who died at the age of one hundred and seventeen, lived chiefly on milk, and even that in small quantity; his son Michael, by similar means, lived to be one hundred and three years old. Father Cull, a Methodist clergyman, died last year at the age of one hundred and five, the main diet of his life having been salted swine's flesh (bacon) and bread made of Indian meal.

From these statements, nine general readers out of ten will jump to the conclusion that milk is "healthy," as are baked apples and bacon. These conclusions do not legitimately follow. The only inference that can be safely drawn, is from the only fact running through all these cases, that plain food and a life of steady labor tend to a great age. As to the healthfulness and life-protecting qualities of any article of diet named, nothing can be inferred, for not two of the men lived on the same kind of food; all that can be rationally and safely said is, either that they lived so long in spite of the quality of the food they ate, or that their instinct called for a particular kind of food; and the gratification of that instinct, instead of its perversion, with a life of steady labor, directly caused healthfulness and great length of days. We must not expect to live long by doing *any one thing* which an old man did, and omit all others, but by doing *all* he did, that is, work steadily, as well as eat mainly a particular dish.

Care of Infants.

One-third of all the children born die before they are two years old, and three-fourths of these perish unnecessarily—perish as a consequence of the neglect or ignorance of mothers. Most infants are physiced and fed to death. No medicine whatever, not the modest "catnip tea," should be given to an infant without the direction of the family physician.

As to food, the practice is, the moment an infant is noticed to cry, it is fed; the result is that in less than a week the little thing cries of- tenger from colic than from hunger, which may often be known by its vomiting soon after it is fed, or by its refusing to take food; the great, the essential point, is to feed all children at regular intervals; from the neglect of this, infants are made dyspeptic before they are a month old, and between alternate feeding and physicing, they go off in convulsions, water on the brain, or diarrhoea. Notice at what intervals food is necessary, and feed only at such times, these being greater as the child gets older; next, keep the child abundantly warm; keep it constantly clean; let it be in the open air every day, and never allow it to be showered or bathed in cold water.

ZINC FUMES ON HEALTH.—The action of zinc fumes upon the bones of the human system appears to be analogous to that of phosphorus. Dr. Robertson, in *Dental Cosmos*, gives an account of the destruction of a considerable portion of the jaw bone of a patient who had been poisoned by the fumes of zinc. The man was a brass founder, and in pouring the alloy of copper and zinc, the fumes of the latter were abundantly thrown off.

Pine-Trees as Medical Agents.

Although some forests are regarded as sources of malaria, and oak-trees and hazel-bushes have been counted insalubrious in Europe, like the tamarind in the East, yet the air of the pine forest appears always grateful to the lungs, and has been considered wholesome, although of its absolute curative influence there is little evidence; and indeed it must be difficult to procure such.

The idea of pine-trees exercising a balmy influence is a very ancient one. Pliny considered that the air of pine forests was more useful in asthmatic difficulties than the voyage to Egypt recommended in such cases in those days.

But besides merely inhaling the air of pine forests, people have made much use of the pine in baths—vapor baths and inhalations. Even this is not entirely modern; for the ancients recommended the internal use of decoctions of strobili and of pine-tops, and thought pine-nuts very useful in diseases of the chest; and at a modern time, besides the use of internal drinks made from the spruce and the tar-water so long in vogue, we had inhalations of tar and of various resins. The ancients recommended in gout baths of water in which cedar wood had been boiled; but the use of the pine extract bath is quite modern. It has spread rapidly, and is in use at Gleisweiler, Eismach, Rehburg, and Liehenstein, in Germany. These aromatic extracts are procured from various pines, as from Norway spruce, Scotch fir, Silver fir, Bordeaux pine, the Weymouth pine, also from the common larch, and, most fragrant of all, the mountain pine. The commonest way of making the bath is by adding to common water a certain quantity of the decoction got by passing steam through the young pine knots.

Influence of Rheumatism on Character.

In a translation of Dr. Faure's article on this subject (*Archives Generales*, Sept. 14, 1871), by Dr. S. G. Webber, of Boston, Mass., in the *Journal of Psychological Medicine*, it is shown that rheumatism is manifested under such variable forms that one may inquire, on meeting anything unusual in a patient subject to its attacks, whether rheumatism may not be concerned therein. Why may it not attack the organs of the cerebral functions on which character depends, as well as the heart, etc.?

A man who is subject to rheumatism will very often state that he has moments of despondency without cause, of inquietude, of forlornness, inexplicable to himself. Then he is discouraged without cause, and sees everything in the shade; that which ought scarcely to be the object of slight care becomes the cause of a cruel torment; he is without force, his thoughts can be fixed on nothing, all intellectual work is impossible; if he wishes to solve a problem, he soon experiences fatigue and heaviness of his head, which often turns into a violent headache; then his sensations are altered, his affections cease, he is indifferent to everything; that which has the most right or power over his mind, remembrances which are most dear or most painful, have no interest for him. His character has changed. He is conscious of his condition, and can for a few minutes rouse himself out of it. A crisis may follow, his head is congested, he feels quite giddy. Finally, all these symptoms disappear, and his mind recovers its tone and clearness. The attacks vary much with individual disposition.

Muscular Expression.

In an admirable chapter on the relations of the mind to the body, Professor Maudsley says: Those who would degrade the body in order, as they imagine, to exalt the mind, should consider more deeply than they do the importance of our muscular expression of feeling. The manifold shades and kinds of expression which the lips present, their gibes, gambols, and flashes of merriment; the quick language of a quivering nostril; the varied waves and ripples of emotion which play on the human countenance, with the spasms of passion that disfigure it—all which we take such pains to embody in art, are simply effects of muscular action. When the eye is turned upward in rapt devotion, in the ecstasy of supplication, it is for the same reason as it is rolled upward in fainting, in sleep, in the agony of death; it is an involuntary act of the oblique muscles when the straight muscles cease to act on the eyeball. We perceive, then, in the study of muscular action, the reason why man looks up to heaven in prayer, and why he has placed there the power "whence cometh his help." A simple property of the body, as Sir Charles Bell observes—the fact that the eye in supplication takes what is its natural position when not acted on by the will—has influenced our conceptions of heaven, our religious observances, and the habitual expression of our highest feelings.—*Scribner*.

CURE FOR A COLD.—A method for curing coryza (cold in the head) with rapidity, consists in inhaling the tincture of iodine, a phial of which is to be held in the hand, and placed under the nose. The warmth of the hand causes the vaporization of the tincture. The inhalations are to be made every three minutes, and soon all symptoms of the malady will disappear.



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SAN FRANCISCO:

Saturday, October 12, 1872.

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once if fully acquainted with the benefits to be derived
from our columns.

SANTA CRUZ AGRICULTURAL FAIR.—The Far-
mer's Club of Santa Cruz, hold their first fair,
Thursday, Friday and Saturday of this week.
We predict its management will be new and
commendable in some of its features. Dr. E.
S. Carr, Professor of Agriculture of the Califor-
nia State University, will deliver an able, prac-
tical and pleasing address we are quite sure.
W. B. Ewer, A. M., from this office, will be
present during the exhibition.

WE WOULD direct the attention of California
grain-growers to our letter from Plano, Tulare
on the subjects of harvesting wheat, rotation of
crops, etc. The proposition of cutting a crop
of hay grown from wheat, barley or oats and
feeding the same without gathering, would be
looked upon in the Atlantic States as a novel
feature of farming; and yet under our pecu-
liarities of climate it may be found just the
thing for us in many localities.

COMPLIMENTARY.—We have received from the
Secretary of the West Tennessee Agricultural
and Mechanical Association, a complimentary
ticket to the Second Annual Fair of the Asso-
ciation, to be held at Jackson, Tennessee, com-
mencing October 22d, 1872, to continue five
days. Also premium list, etc. Thanks.

Orchards in the Interior.

The great interior, meaning by this the great
world lying between the Sierra Nevada and the
Rocky Mountains, though with an elevation of
five thousand feet and upwards above the Sacra-
mento Valley, and dependent upon California
for nearly all the finer fruits, will nevertheless
be found productive of many good varieties of
the more hardy and early kinds.

Indeed, we are informed there are several
small orchards already producing fruit; trees
but three years from the nursery and but two
years when transplanted, that will this year
produce each a few pounds of apples well
matured. There will be an increasing demand
for apple, pear, and cherry trees, as year by
year the fact of their thriving and fruiting in
the interior valleys is developed.

Although California could, with a system of
low freights upon the railroads, supply a large
share of the needed fruits, yet as homes are
made and more of a permanent population
grows up with every succeeding year, these must
and will to some extent make their homes at-
tractive by planting trees, and as beauty, orna-
ment and utility can be combined in many
varieties of fruit trees, there will be an annu-
ally increasing demand for the more hardy and
northern varieties of the ever popular fruits,
apples and pears.

Tree growers should bear this in mind, and
keep their nursery stock in this line replenish-
ed yearly with growing trees of valuable
varieties, suited to the peculiar conditions of
altitude and climate of the interior valleys.

Liverpool Wheat Market Quotations Again.

As much interest in the matter of the correct-
ness of the telegraphic quotations of California
wheat in the Liverpool market has been excit-
ed since the publication of our article last
week, we now enter into further details, which
show conclusively how the farmers of our State
have hitherto suffered from this system of false
reports. The table that we herewith lay before
our readers shows the real prices of California
wheat in Liverpool as opposed to telegraphic
quotations for 14 months, from July 4th, 1871,
to August 30th, 1872; with the exception of
January, 1872, December, 1871, and a few other
weeks for which we could not get files of the
English papers. As the newspapers and the
public both were equally unprepared for our
exposé, which showed such an immense dis-
crepancy on the part of the telegraph, we do
not wonder that the "Evening Bulletin" should
assert that there must be a mistake somewhere.
There is, however, no mistake, as the table we
publish conclusively proves. No valid attempt
has been made to disprove it. If possible,
there would not be any slowness in the effort to do
so. It has been said that the telegraphic quo-
tations represented probably the average prices
of good wheat in Liverpool. We anticipated
this assertion. But the remarkable

Correspondence of Prices

Between telegraphic quotations, and the re-
ports of the semi-weekly markets taken from
the Mark Lane Express, conclusively disprove
this. From July 4th to July 18th, 1871, the
quotations given by the Mark Lane Express
show a continual rise, so do those given by
telegraph. On the 21st of July the former
fell, so do those given by telegraph; on the
21st they rise again, those given by telegraph
rise also. The former continue to rise steadily
from July 25th to Sept. 29th, so do the latter.
From the 29th of September to the 31st of
October the Liverpool market, on the authori-
ty of the Mark Lane Express, remained station-
ary; the telegraph represents it almost as sta-
tionary also, save a rise of 2d. or four cents on
one occasion. On the former authority the
market falls to the 10th of November; so states
the telegraph also. Then according to the
former it rises to the 24th of November, so also
it does according to telegraph. By looking
through the table our readers can see the same
correspondence throughout the whole table,
save in one or two instances. Now if it was
the average price of wheat generally in Liver-
pool this correspondence would not be found,
as by looking through the files of the Mark
Lane Express, it can be seen that other wheats
do not rise and fall in the Liverpool market as
does California, but very frequently quite the
contrary. Again, the

Average Prices of Wheat in Liverpool

Would be far below even those contained in the

telegraphic quotations as California and Chile
wheat leads the market, and the greater propor-
tion of the wheat sold in Liverpool never aver-
ages more than 11s or \$2.64 per cental. In fact
it is seldom that it reaches that figure. The
"Bulletin" has also stated that the prices tele-
graphed here, are those telegraphed to all the
great cities of the Union. Now, here it has
made a mistake. It is very seldom that the
principal papers in the most of the cities men-
tioned, publish Liverpool wheat quotations,
and when they do, they do not give those tele-
graphed to this city. The Chicago papers do
publish the same rates, but they publish them
as those of white wheat, of which the only
brands in the Liverpool market that at all come
near the telegraphic prices, are those of Cali-
fornia and Chile, which are practically the
same. But the

"Bulletin" Itself Confirms Us

In this matter. On turning to its files of July
11th, 1871, it will be seen that it states posi-
tively that the quotations per telegram are those
of California wheat in Liverpool. At any rate
they are meant to be taken by the public as such,
so that were the Bulletin even right, the result
would be the same, and the wrong done the
same. What we want the dailies to tell us is,
the price of California wheat in Liverpool—
none other is of any use to us. The following
table shows the extent of the falsifications.

YEAR AND MONTH	IN STERLING		FEDERAL COIN		AV. DIF.
	PRICES AS QUOTED BY MARK LANE EXPRESS.	PRICES QUOTED BY TELEGRAM.	PRICES AS QUOTED BY MARK LANE EXPRESS.	PRICES QUOTED BY TELEGRAM.	
1871					
Jul. 4	11s 9d to 12s 0d	11s 8d	\$2.52 to \$2.58	\$2.50	5c
Jul. 7	11s 10d to 12s 0d	11s 8d	2.54-2.56	2.50	7c
Jul. 11	11s 9d to 12s 0d	11s 8d-11s 9d	2.52-2.58	2.50-2.52	4c
Jul. 14	11s 9d to 12s 0d	11s 8d-11s 9d	2.52-2.58	2.50-2.52	4c
Jul. 18	11s 9d to 12s 0d	11s 8d	2.52-2.58	2.52	9c
Jul. 21	11s 9d to 12s 0d	11s 8d	2.50-2.56	2.52	11c
Jul. 25	11s 9d to 12s 0d	11s 8d	2.52-2.58	2.54	11c
Jul. 28	11s 10d to 12s 0d	11s 8d	2.54-2.58	2.54	12c
Aug. 1	11s 10d to 12s 0d	11s 8d	2.54-2.58	2.56	8c
Aug. 4	11s 10d to 12s 0d	11s 8d	2.54-2.58	2.56	7c
Aug. 15	11s 10d to 12s 0d	11s 8d	2.54-2.58	2.58	5c
Aug. 18	11s 10d to 12s 0d	11s 8d	2.54-2.58	2.60	3c
Sep. 1	11s 9d to 12s 0d	11s 11d	2.52-2.59	2.56	1c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
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Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.51-3.06	2.52	8c
Sep. 8	11s 9d to 12s 0d	12s 2d	2.		

Misquotations

Are continued right through the fourteen
months, with one single exception. On the
28th of November, 1871, the true average price
of California wheat in Liverpool was tele-
graphed to this city. For the rest, the tele-
graph quotations are from 1c. to 22c. lower
than the real ones. The average of all is 10½
cents.

The Farmers Might Protect Themselves

By the establishment of a Wheat Bureau in
Liverpool, which shall be established for the
purpose of giving our agriculturists and mer-
chants, through the telegraph, to our State
Union, the true quotations in that market, of find-
ing out the wants of the Liverpool and other En-
glish and European markets, of tabulating the
imports, exports, crop returns, prices obtained
for all grades of wheat, quantities sold, and of
finding out and publishing facts of interest as
to shipment, tonnage, etc., etc. The cost of
such a branch would be a mere bagatelle; its
benefits would be incalculable.

Santa Cruz Cattle Disease.

It will be remembered that in February last
an interesting discussion was had in the
Santa Cruz Farmers' Club, in relation to a dis-
ease among the cattle of that county, and which
seemed to result in the very general belief that
the disease was caused by the animals being
allowed to graze in the same pasture with hogs.

So general was this belief—that the cause of
the disease was in some way connected with
hogs—it became to be known as the hog poison;
and when speaking of the nature of the poison,
it was conceived to be in some respects like
hydrophobia, arising in this case as was sup-
posed from the saliva of the hog being distrib-
uted upon the plant food of which the cattle
afterwards partook.

Corroborative Testimony.

In the RURAL of the 9th of March, D. C., of
Watsonville said, in regard to the cattle disease
at Santa Cruz being attributed to feeding among
hogs, allow me to say that I believe they have
hit the case just right, for I am positive in re-
gard to another kind of stock feeding with hogs,
which is this: In nearly every case where I
have seen young colts kept in a barn-yard with
hogs, many of the colts have died.

Now there seems to be but one opinion in re-
gard to this disease; which is that its origin is
in some way connected with the feeding of cat-
tle and colts in the same field or barn-yard
with hogs; but how or why it is, is not so clear.
It would seem, however, that a celebrated vet-
erinary surgeon of Philadelphia has solved the
mystery as follows:

Trichinae Spiralis Killing Cattle.

In Santa Cruz, California a cattle disease has
broken out with the following symptoms:
"A strong disposition to rub some part, as
the nose, ear, jaw, leg or side, is first observed.
The itching appears to be allayed for a time,
but soon returns with increased violence, until
the hair and skin are quite rubbed off. The
parts swell and fill with serous fluid as the dis-
ease advances. The animal becomes frantic,
and dies in from 8 to 24 hours after the first
symptoms show themselves. There is no
fever."

The facts being submitted to R. McClure,
Veterinary Surgeon, of Philadelphia, he says
the malady is parasitic (*enzootic*) in its charac-
ter. The excrements of hogs scatter the ova
or eggs of the Trichinae Spiralis over grass
where cattle graze; and with their food these
pests find their way into their stomachs.—Dr.
D. Lee, in Rural Carolinian.

From this it would appear, not only that our
hogs have the genuine Trichinae Spiralis, alike
with the hogs of other countries, but that they
can be communicated to other animals feeding
upon the same pastures with them. The im-
portance then of keeping the Mosaic "unclean
animal" apart from neat cattle and horses is
clearly apparent.

Farmers should look to this and so manage
as to devote certain grounds to hog ranges, on
which other stock should never be permitted to
feed, so that whatever there be of Trichinae in
our hogs, let us confine it entirely to them,
where it seems naturally to belong.

Steam Plowing.

We have received the pamphlet of John Fow-
ler & Co., of the steam plow works of Leeds,
England. It contains abundant evidence of
the complete success of steam plowing in Eng-
land, and in other places where it has been in-
troduced. That land can be plowed by steam
to a depth that would be quite impracticable
with animal power and the common plow, ad-
mits of no dispute.

We have also in hand a letter from Mr. Law-
rence, of Magnolia Plantation, Louisiana, who
relates his success with Fowler's steam plow
in that State, in the culture of sugar cane.
Also a letter in the N. Y. Tribune of July 3d,
1872, on the same subject and from the same
source.

All these go to prove that plowing by steam
is practiced in Europe and in Louisiana, and
there ought to be no reason why it may not be
as successfully introduced in California. We
learn that Mr. Campbell, of Washington, Yolo
county, has made a new improvement in the
mechanism and working of the Fowler
plow, by which its efficiency is claimed to be
increased. Mr. Gwinn has promised to have a
small set of this plowing apparatus, with steel
boiler, etc., made in England especially for this
country.

We certainly hope that complete success
may attend the improvement, and that Mr.
Campbell may realize to the fullest extent his
anticipations; for a wider field or a more desir-
able one could hardly anywhere be presented
than in the reclaimed, but soft tule lands of
the delta islands of the Sacramento and San
Joaquin Rivers.

The California State Fair.

Held at Sacramento, Sept. 19 to 28, 1872.

Exhibition of Manufactures, Inventions, Etc.

SUBSOIL GANG-PLOW.—Myers & Gummow, of Marysville, exhibited their excellent subsoil gang-plow; a peculiar feature of which is, that it can be used either as a single plow and a subsoiler, or as a two-gang plow. It does splendid work, and is highly spoken of by every one who has put them to a trial.

SIDE-HILL PLOW.—This very meritorious invention, Scoville's Climax Side-hill Plow, exhibited by Treadwell & Co., San Francisco—who are the agents for the Pacific Coast—seems of those really valuable inventions that sometimes from their very appearance attract the attention of amateurs. Plows don't speak, but if they did, this one would speak for itself, for the superior workmanship of the implement, and splendid plowing it is capable of doing. This company also exhibit Huie's patent gang-plow, said to be a very efficient and desirable combination, forming a sulkey-seat gang, extensively used here, and at the East, and with "Jones' plow-bottoms," the improvement of 1872, is probably one of the best plows in use.

GRAIN SEPARATOR.—Nash, Miller & Co.,—as was expected,—were on hand with their improved Nash & Cutts' Grain Separator, manufactured at Sacramento, and which they were ready to set out against any other grain separator in this or any other country. In fact, they are simply ready to compete with anything in their line of manufactures. They are extensively used.

PREMIUM GRAIN SEPARATOR.—This California invention, by W. D. Freeman, patentee, of Tomales, Marin Co., is peculiar in its screen arrangement, which gives it power over other separators, in freeing oats from all manner of pods and other foul seeds, and separating different sized grains, rendering it one of the most satisfactory machines ever introduced for its specialties.

HYDRAULIC MILL AND MINING LAMPS.—This most valuable invention for lighting mills, mines and other special purposes, was on exhibition and received considerable attention. It is certainly a new and important manufacture for this coast. A specialty connected with this lamp is the use of gasoline with perfect safety, the lamp being essentially non-explosive. C. B. Brown, Placerville, Cal., is the patentee.

HYDRAULIC JOINTS.—Conspicuous among the few mining inventions on exhibition was the "Dictator and Little Giant Hydraulic Joints." They are claimed to be superior to anything that has ever been in use before, and their very appearance would indicate their usefulness and adaptability. R. Hoskin, of Dutch Flat, Cal., is the sole manufacturer.

IMPERIAL WASHER.—Reynolds & Fuller, Sacramento, exhibited their Imperial wash boiler and washing machine combined. Evidently made compact for convenience and economy of space and fuel.

MANKER'S SASH BALANCE.—This invention is intended to do away with the ever-breaking cords of sash weights and the attendant trouble of repeated renewal. It consists of a coiled spring so arranged and attached to the side of the sash and window frame that when the sash or window is lowered, the spring is, in effect, wound up, and consequently takes to itself the weight of the window, and holding itself ready to raise the same by the aid of an extremely small amount of additional power, such as any child can apply. Address E. B. Tenney, Sacramento.

GRAPE CRUSHER AND STEMMER.—Schoenstein & Klein's patent grape crusher was on exhibition and attracted the attention of those who are makers of wine on a large scale. Patent rights for this machine are for sale by F. B. Schoenstein, S. F.

JOHNSTON'S GRAPE CRUSHER.—This is another of those machines now considered indispensable to the wine maker. It thoroughly crushes the grapes without breaking the seeds, and effectually separates the stems from the pulp in the most rapid and complete manner. It is patented by Geo. and W. F. Johnston. It is now in use by the Johnston Co., Sacramento.

THE NAPA CHURN.—This celebrated churn invented and patented by E. Groat, Napa City, was one of those articles that would command attention anywhere. It is on entirely a new plan and seems to combine simplicity of construction, cheapness, durability, power and effectiveness in an eminent degree. It is patented also in foreign countries, and the patentee has been east to perfect the manufacture of them. We expect to give an illustration of it at some future day.

TODD'S ROLLER SKATES.—This, the simplest of all parlor skates and yet one of the most elastic and durable, is the invention of Mr. Todd, the well-known photographer of Sacramento.

BUILDING PAPER.—Peck & Brown, Sacramento, exhibited specimens of building paper, plastering board, roofing felt, tarred sheathing and moth-proof carpet felt, new articles just introduced to this market, that give promise of extensive application to the uses for which they are designed.

JAMES' SPRING BED.—S. Look, San Francisco, agent for the Pacific Coast, exhibited this celebrated spring bed.

DONNOLLY'S YEAST POWDERS.—Amongst the articles exhibited at the State Fair none contain greater "puffing qualities" than the samples of Donnelly's Yeast Powder, Cream Tartar, Saleratus, etc., exhibited by Mr. A. O'Callaghan, of this city. In their manufacture upwards of twenty men are employed, and they have not in the local market been the means of driving out all Eastern brands, but they are exported in large quantities to the Sandwich Islands, Mexico, British Columbia and Australia.

COMBINED PORTABLE DESK AND SETTEE.—Nothing set us up better than the exhibition of Peard's Patent School Desk and Settee combined, manufactured by the School Furniture Company of Chicago, Illinois. They not only offer superior comfort and accommodation to the pupil, but they can be folded so as to occupy a space of only ten inches. The advantages derivable from this arrangement are sufficiently obvious. They are made of cherry, or of cherry and walnut combined. Messrs Roman & Co., of this city, are the agents for the Pacific coast.

SEEDER AND CULTIVATOR.—The Gorham Broadcast Seeder and Cultivator, had before being exhibited at the Fair, taken five premiums on this coast. There are six, eight, ten and twelve foot machines, which easily set twelve, sixteen, twenty and twenty-four acres per day. Isaac D. Huntton, 418 Front street, is the general distributing agent in this city, and A. J. Berner in Sacramento. J. M. Betts & Co., are the sole owners of the Patent Right for the States and Territories of the Pacific coast.

POST AND WELL BORER.—A California invention, the Orchard Post and Well Auger, is of the highest importance to our farmers, and will help to render cultivable, many tracts that are now considered hopelessly arid. It's cutters are made of steel, and it completes its work without the aid of a mud pump. It has bored through fifty feet of hard pan, cement, clay and gravel in nearly half a day. It is undoubtedly one of the most valuable of recent California inventions.

TULE PLOW.—McCall, of Santa Clara, exhibited his tule plow, of which mention has been made heretofore. It was tried in Yolo county during the Fair, and reported on favorably. The peculiar feature in its operation is the cutting the soil into ribbons and completely inverting it. The inventor is meeting with encouragement, having several orders for its manufacture.

GLASS WORKS.—The San Francisco glass works exhibit specimens of white and colored glass, etc., making a fine display of home manufactured articles. Their hanging plant baskets, entirely of glass, were particularly attractive.

REMARKABLE FLEECE.—C. C. Baker, near Modesto, exhibits the fleece of a four-year old buck, the weight of the fleece being 38 lbs., as sworn to by one editor, one post-master, and two farmers; certainly enough to leave no doubt of its truthfulness. It was sheared on the 17th of Sept., 1872, having been previously sheared on the 18th of Sept., 1871.

DRIED FRUITS.—E. F. Aiken exhibited a splendid display of dried fruits; will dry on a large scale, in a drying house, for the Eastern market. Has promised us further information.

AMERICAN BOTTLE FILLER.—This is an improved Filler, by Messrs J. Armstrong & Marks, 240, 6th street, S. F., an invention by which one hundred dozen pints can be filled in an hour.

GANG PLOW.—Manuel and Sawyer, Napa, exhibit a new gang-plow, with a rear-wheel attachment following the plow in the furrow, by which the friction on the bottom of the plow is greatly lessened. They have just commenced manufacturing; the castings are light and the plow simple throughout.

CARBOLIC ACID DISINFECTANT.—The Pacific Wood Preserving Company exhibits this ingredient, which is manufactured very economically from the residuum of the materials used in their wood-preserving process. They also exhibited specimens showing the destructive effects of the Toredon, on unpreserved wood, and the perfect protection afforded by the preserving process. Office of the Company, 338 Montgomery street, S. F.

THE JOHNSTON STILL.—Geo. Johnston exhibited a model of his improved still, showing the principle of its operation; which produces brandy from a first distillation, free from fusel-oil. Also a keg sample of the brandy of the vintage of 1871, which experienced tasters say possesses rare and decidedly fine qualities. Mr. Johnston has patented his still in Europe and is already in receipt of a regular income from its use in England.

NEW SPRING BED.—Amongst the benefactors of mankind may be placed those by whose inventive skill we are enabled to enjoy that greatest of nature's blessings, sound and balmy sleep. Mr. A. T. Sherwood, of Sacramento, is entitled to be classed as one of these benefactors. The elastic bed exhibited by him at the Sacramento State Fair, is guaranteed to be lighter, more durable and cleanly than any other, and what is of no small importance it can be rendered entirely vermin proof. Mr. Sherwood also manufactures a portable bed, adapted to the wants of single men, and miners, and which can be used as an extra for a hotel. There are hospital attachments which can be applied to any of these beds when needed.

In the Art Gallery.

Oscar Kaltschmidt, of San Francisco, D. H. Woods and H. Campion, of Sacramento, and other artists made noticeable displays of oil paintings.

I. H. Taber, of San Francisco, made an admirable show of plain, retouched and colored photographs. His new style of out and in-door combined photographs—his own invention—is an important and pleasing acquisition to the art that renders, with other accomplishments, his gallery attractive and desirable.

Bradley & Rulofson (our best-known photographers in San Francisco) made the handsomest and richest display in their branch—showing large photograph portraits in all styles, of perfect tone and faithful and delicate finish. Their photographs we have hardly seen equalled.

One of the rarest gems was found in the collection of Mrs. H. H. Curtis, a teacher of San José—an animal painting in water colors. Representation—a squirrel with fruit and partly-eaten nut. This picture was accompanied with two very fine pencil drawings by the same artist, one of which was exhibited at the Crystal Palace exhibition, N. Y., and there received the award of a gold medal; also subsequently the same award at the American Institute Fair in that city. If these small creatures had been more fortunately located they would certainly have attracted marked attention.

Selleck & Fisher, San Francisco, exhibited some fine photographs. We observed no Sacramento photograph gallery represented. There were other exhibits of oil paintings and other works of art that we should notice with pleasure if we were enabled to give a full report of this department.

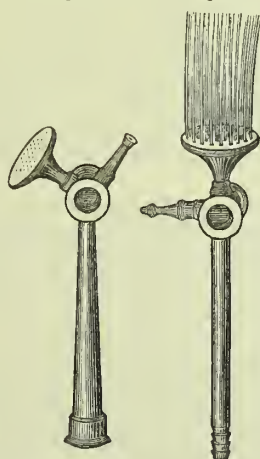
BEEHIVES AND BEES.—J. S. Harbison exhibits his patent hives. Also glass and metallic cases containing bees, and showing the pure honey. Mr. H. has some 2,000 hives of bees, large numbers of which he removes to different parts of the country to secure the best pasturage. Sometimes near the summit of the Sierras, at others in the low country of Santa Cruz county. It has been discovered that the blossom of the Buckeye kills bees—our bee keeper readers will make a note of this.

Many other exhibits of merit deserving favorable mention are unavoidably crowded over until next week.

The "Twin" Hose Nozzle.

The accompanying cuts represent an article the use of which is quite general in England, and which is fast becoming popular in the Eastern States. It is now being introduced on

Fig. I. Fig. II.



the Pacific Slope and in view of the very general use of hose in this section it will doubtless ere long come into general use. The essential features of this nozzle are involved in the combination, on a single stopcock-barrel or cylinder, of a jet and sprinkler in such a manner as that when it is desired the discharge may be through either one or the other and is effected by rotating the barrel upon the plug so that the particular part is in a right line with the hand pipe.

A direct water-way is thus secured with no greater friction than in those of ordinary patterns. The inconvenience of screwing off or on of one jet or sprinkler to get a solid stream or a spray, is entirely avoided. The "Twin" is also a stopcock when turned so that neither the jet or sprinkler is in a right line with the hand pipe, which is the position shown in Fig. 1. Fig. 2 represents the sprinkler open; also the English style of hand-pipe which requires no coupling in order to attach to hose. There being no loose or detached pieces in this nozzle, the common occurrence in ordinary nozzles of losing either jet or sprinkler is avoided; though when necessary, for the purpose of cleaning, these pieces may be unscrewed. Convenient in their method and not more expensive than the common kind, we think their use must become general and do away with old-fashioned devices. The sole manufacturing agent in the United States is S. J. Wheeler, 315 State street, Chicago, and L. Walker, 312 Cal. street, is agent in San Francisco for the Pacific Coast.

Cotton of 1872.

EDITORS PRESS.—Enclosed please find four samples of different varieties of cotton planted and raised this year at Bakersfield, Kern Co., Cal.—as marked—by the California Cotton Growers' and Manufacturers' Association on their plantation at that point. They have 240 acres of these varieties of cotton now in good condition, the picking of which has just been commenced, and which promises to be a large yield. Samples received from Julius Chester, Esq., Manager. Yours, etc., CHAS. L. CAPP. San Francisco, Oct. 2d, 1872.

We have given the samples of cotton a close examination, and believing we know something about the qualities that pertain to that textile, we pronounce the samples unqualifiedly excellent.

The samples from Peeler seed planted on the 1st of May, is simply snow white, of long staple and will compare favorably with the best Georgia Sea Island.

Sample from Dixon seed, planted on the 16th of May, is a splendid cotton, perfectly immaculate in whiteness, and with a strong fibre, but adhering somewhat closely to the seed; would gin, however, without difficulty.

Sample of Golden Prolific, planted May 22d, is a superior cotton, good length of staple, beautifully white, and if yielding as its name would indicate, will prove one of our best varieties.

Sample of Texas seed cotton planted as late as May 25, is also superb. We are almost inclined to give it rank with Peeler, and think perhaps if it had been planted as early as the Peeler would have excelled it. It is perfectly silky in its texture and possesses a peculiar softness of lustre that is certainly remarkable.

Let this cotton, we care not of which sample, be now gathered, free from the dirt which is in other countries so necessarily incident to the recurring rains during the picking season, and before the autumnal frosts have turned it yellow and let it be ginned entirely separate from any that may be partially injured from the causes we have mentioned, and the cotton will grade above middling, and from "good" to "best," and command the highest figure in the market.

It is gratifying to note the success of the California Cotton Growers' Association in their endeavor to make cotton one of our staple productions, and the managers and others who have put their time and money into the experiment of solving the cotton growing question, deserve greater praise than will be likely to be accorded to them. We shall hope to hear further of its success, and invite any one interested in cotton culture to call and examine our samples.

Our Pastoral Mountains.

California with two ranges of mountains the entire length of the State, possesses relatively a vast extent of lands strictly pastoral. From the very summit of the Sierra Nevada, westwardly to the great valleys of Sacramento and San Joaquin, a distance varying from thirty to fifty miles, is spread out with all the diversity of mountain, hill, ridge and valley, one of the most extensive cattle, sheep and goat ranges that can be claimed by any State in the Union, having in immediate juxtaposition a sufficiency of low valley country to maintain the mountain herds in good thrift throughout each succeeding winter, on that which unaided nature alone provides.

In addition to this vast range we have the Coast mountains with more or less of purely pastoral grounds, that can hardly be devoted to a better purpose, and all in close proximity to the warm low valleys of the interior, or, as upon the west, the moist unfrozen belt of country between the Coast Range and the ocean.

During the past summer vast herds of sheep and goats have been pastured upon the Sierra in El Dorado county, by N. Gilmore and others, at an elevation of 9,000 feet above the sea, and never were animals kept in better condition of health and flesh.

With a variety of native grasses and clovers, and cool streams of water in abundance, with a pure clear air, it would seem as though nature had designed these great pastures purposefully to enable us to grow in the fullest perfection the different animals adapted to fattening or dairy purposes, for it is already evident that the change from a low valley life to one upon these mountain lands, alternating as the seasons come and go, are as beneficial to domestic animals as to the human race.



Tree-Top Trouble.

Do you think, little sorrowful lady,
That no one has trouble but you?
When you wish to "be gay as a robin,"
Remember, we robins get blue.

Aren't there blood-thirsty cats to appal us
With fearful and terrible stare?
So a mother-bird never is happy,
Nor free from solicitous care.

Why, the mischievous boys of the village
I think will unsettle my brain,
When they threaten to torture and pillage,
Regardless of protest or pain,

And then—Mr. Robin is careless,
He don't stay at home as he should;
And if I reproach him, he whistles,
And flies to his club in the wood.

The nest, though I love it so dearly,
Holds trouble and turmoil and sin,
For Jack, greedy bird, is the strongest,
And grasps the supply I bring in.

While poor little Dick, thin and hungry,
Feels slighted because he is small,
And Scrawney is always protesting
I give him no dinner at all.

There was Sweetie, who fell in the fountain
Out-looking for me, from the nest;
It seems to me always that Sweetie
Was dearest, and brightest and best.

So you see, little sorrowful lady,
That even the birds of the air
Can not fly from the ills that beset them,
Nor flutter through life without care.

There is sorrow for women, for robins,
In tree-top and wide dwelling too,
But I know of a country that's better
To dwell in the autumn—do you?

Home and Its Queen.

These words, from *Scribner's Monthly*,
are worthy of much consideration:

"There is probably not an unperverted man or woman living, who does not feel that the sweetest consolation and best reward of life are found in the loves and delights of home. There are few who do not feel themselves indebted to the influences that cluster around their cradles for whatever good there may be in their characters and conditions. Home based upon Christian marriage, is so evidently an institution of God, that a man must become profane before he can deny it. Wherever it is planted, there stands a bulwark of the State. Wherever it is pure, and true to the Christian idea, there lives an institution conservative of all the nobler interests of society.

"Of this realm woman is the queen. It takes its cue and hue from her. If she is in the best sense womanly—if she is true and tender, loving and heroic, patient and self-devoted—she consciously or unconsciously organizes and puts in operation a set of influences that do more to mould the destiny of the nation than any man crowned by power or eloquence can possibly effect. The men of the nation are what mothers make them, as a rule; and the voice which those men speak in the expression of their power, is the voice of the woman who bore and bred them. There can be no substitute for this. There is no other possible way in which the women of the nation can organize their influence and power that will tell so beneficially upon society and the State.

"Neither woman nor the nation can afford to have home demoralized, or in any way deteriorated by the loss of influence there. As a nation we rise or fall as the character of our homes, presided over by woman, rises or falls; and the best gauge of our present prosperity is to be found in the measures by which these homes find multiplication on the land. In true marriage, and the struggle after the higher ideal of home life, is to be found the solution of more of the ugly problems that confront the present generation—moral, social, and political—than we have space to enumerate."

GIVE work rather than alms to the poor. The former drives out indolence, the latter industry.

American Women.

The American woman has long been regarded by Europeans as the most beautiful woman in the world. This she is and has been for twenty-five years, without a doubt; and, as the circumstances of her life becomes easier, her labor less severe, and her education better, she will be more beautiful still. America never possessed a more beautiful generation of women than she possesses to-day, and there is no doubt that the style of beauty is changing to a no-type. The characteristic American woman of the present generation is larger than the characteristic American woman of any previous generation. It comes of better food, of better clothing, better sleep, more fresh air, and less hard work to mothers during those periods when their vitality is all demanded for their motherly functions. We venture to say that the remark has been made by observers thousands of times during the past summer, at the various places of resort, that they had never seen so many large women together before. Indisputably they never had.

The same fact of physical improvement is not so apparent among the men, and the cause is not too far off to be found. It need not be alluded to, however, until something has been said about the reasons of the superior beauty of the American woman over those of other Christian nationalities. The typical American woman is not, and never has been, a beer-drinking or a wine-drinking woman; and to this fact mainly we attribute her wealth of personal loveliness. In America it has always been considered vulgar for a woman to be fond of stimulating liquors of any kind, and horribly disgraceful for her to drink them habitually. As a rule all over the country the American woman drinks nothing stronger than the decoctions of the tea-table, and those she is learning to shun. She is raised to maturity without a stimulant, and as this is the singular distinguishing fact in her history, when we compare her with the women of other nations, it is no more than fair to claim that it has much to do with her pre-eminence and physical beauty.—*Scribner.*

Always Neat.

Some folks are very charming at evening parties, but surprise them in the morning, when not looking for company, and the enchantment is gone. There is good sense in the following advice to young ladies:

Your every-day toilet is a part of your character. A girl who looks like a "fury" or a "sloven," in the morning, is not to be trusted, however finely she may look in the evening. No matter how humble your room may be; there are eight things it should contain: a mirror, a washstand, soap, towel, comb, hair-brush, nail-brush, and tooth brush. These are just as essential as your breakfast, before which you should make good use of them. Parents who fail to provide their children with such appliances not only make a great mistake, but commit a sin of omission.

Look tidy in the morning, and after dinner-work is over improve your toilet. Make it a rule of your daily life to "dress-up" for the afternoon. Your dress may not or need not be anything better than calico, but with a ribbon, or some bit of ornament you can have an air of self-respect and satisfaction that invariably comes with being well dressed.

A girl with fine sensibilities cannot help feeling embarrassed and awkward in a ragged and dirty dress, with her hair unkempt, should a stranger or neighbor come in. Moreover your self-respect should demand the decent apparelling of your body. You should make it a point to look as well as you can, even if you know nobody will see you.

DEATH-BED SPEECHES.—How would it do for us to say to-day some of the things we intend to say in our last illness? Honorable bright! are you not saving up several fine, generous, pathetic little speeches to be made on your death-bed; all the scenery set, full company on the stage, grand final tableau? Ten chances to one you'll forget them then; or have a rattling in your throat that will shake them out of shape. Forth with them now like men—"My dear boy, you have been the light and comfort of my life;" "My dear girl, without you I would have been nothing in this world."—*Scribner.*

If we subdue not our passions, they will subdue us.

Hands.

Neatness is the first consideration which makes the hand attractive. No matter how long, bony, or large-jointed and unshaped, if it is clean, and the finger nails properly cared for, a hand can never look disgusting.

A soft, warm, pliable hand has great power of fascination. There is a character in a large hand, many times, far greater than in a tiny one. A hand corresponding in size to the rest of the body is much finer than the little fat, dimpled hands so many are proud of, who possess, and others envy the possession.

It is equally as nonsensical to squeeze the hand into gloves a size too small, as to pinch the feet in tight boots.

A very small nose is considered insignificant, while a large one is said to indicate nobility of character. Why not the same with hands and feet.

If with changes of time the idea should obtain that small noses only were fine, while large ones were something to hide and of which to be ashamed, would not the vanity of humanity attempt to reduce the proportion of that member by lacing or inserting in a close net? It would be equally as sensible as stopping the circulation of the blood in other portions of the body.

A white flexible hand is desirable but not at the sacrifice of duty.

Many a hard, rough hand, has done enough good in the world to look beautiful in the eyes of the appreciative. Girls who will shirk all of the house work, making drudges of their mothers rather than soil their dainty hands, need not expect to be loved by those who know it. The callous places and other signs of labor would be far more to their credit.

The best hands in the world is the honest hands, be it hard or soft, white or brown, smooth or rough, angular or shapely an honest palm that takes the hand of a friend with a warm, hearty grasp as if there were nothing in the heart to conceal, only warmth and kindness toward all. This is the best and most beautiful hand in the world.

IMPORTANCE OF DOMESTIC EDUCATION.—There is not a girl on earth, whether the daughter of prince or pauper, who, if made a perfect mistress of all household duties, and were thrown into a community wholly unknown, would not rise from one station to another, and eventually become the mistress of her own mansion, while multitudes of young women placed in positions of ease, elegance and affluence, but being unfitted to fill them, will as certainly descend from one round of the ladder to another, until at the close of life, they are found where the really competent started from. Mothers of America, if you wish to rid your own and your children's households of the destroying locusts which infect your houses and eat up your substance, take a pride in educating your daughters to be perfect mistresses of every home duty, then if you leave them without a dollar, be assured they will never lack a warm garment, a bounteous meal, or a easy roof, nor fail of the respect of any one who knows them.

TOILING WIFE.—A farmer's wife on a large farm, with six or eight children of all ages, from nineteen to two years of age, has without help a toilsome life of it—a life of hard labor. She is generally the first one up in the morning and to bed the last at night, toiling incessantly from early morn till late in the evening. There is baby to attend, to get to sleep. The mother and wife on a large farm with a large family, most of whom a great portion of the year go to school, has a laborious life of it—much more than the husband and father. No wonder so many of them are broken down in health at forty years of age—literally worn out with toil. What wonderment then that so many of the best of wives are peevish and cross. What they pass through is enough to sour the disposition of an angel.—*Ex.*

ENGAGING MANNERS.—There are a thousand engaging ways, which every person may put on, without running the risk of being deemed either affected or foppish. The sweet smile, the quiet, cordial bow, the earnest movement in addressing a friend, or more especially a stranger, who may be recommended to us, the graceful attention which is captivating when united with self-possession; these will insure us the good regards of all. There is a certain softness of manner which should be cultivated, and which, in either man or woman, adds a charm that is even more irresistible than beauty.

YOUNG FOLKS' COLUMN.

Skiping the Hard Points.

Boys, I want to ask you how you think a conqueror would make out who went through a country he was trying to subdue, and whenever he found a fort hard to take, left it alone. Don't you think the enemy would buzz while there, like bees in a hive, and when he was well into the heart of the country, don't you fancy they would swarm out and harass him terribly?

Just so, I want you to remember, will it be with you, if you skip over the hard places in your lessons, and leave them unlearned, you have left an enemy in the rear that will not fail to harass you and mortify you times without number.

"There was just a little bit of my Latin I hadn't read," said a vexed student to me, "and it was just there the professor had to call upon me at examination. There were just two examples I had passed over, and one of these I was asked to do on the blackboard."

The student who is not thorough is never well at his ease; he cannot forget the skipped problems; and the consciousness of his deficiencies makes him nervous and anxious.

Never laugh at the slow, plodding student; the time will surely come when the laugh will be turned. It takes time to be thorough, but it more than pays. Resolve, when you take up a new study, that you will go through with it like a successful conqueror, taking every strong point.

If the inaccurate scholar's difficulties closed with his school life, it might not be so great a matter for his future career. But he has chained to himself a habit that will be like an iron ball at his heel all the rest of his life. Whatever he does will be lacking somewhere. He has learned to shirk what is hard, and the habit will grow with years. Now, nothing we can get in this life is to be had for nothing. Success is not thrust upon a man. If you want any good you must work for it. The eye that never falters and the nerve that never quails, are the true elements of victory in the mental and moral world, as well as the physical world. Don't skip the hard points.—*School-day Visitor.*

Boys! Take Warning.

A clergyman says: "I one day passed by a blacksmith's shop, in which I saw the son of a lady of my acquaintance smoking a pipe. I went to his mother and told her what I had seen, and she very indignantly told me I must be mistaken. I said, 'I know your son as well as I know you, and if I had not been certain that it was he, I should not have called on you.' She still persisted that I was mistaken; and was evidently annoyed at my interference.

"Some two years afterward she called on me, and begged that I would try and do something for her son, saying, 'He smokes and drinks, and does everything else that is bad, and my heart is almost broken.'

"Some two years ago," I said, 'I told you what I feared, and then something might have been done; but these habits are now confirmed. I will, however, do any thing in my power.' But I found it was in vain. In the course of a few years he blew out his brains, and left his widowed mother inconsolable at his destruction of both body and soul."—*Youth's Temperance Banner.*

ONE DROP OF EVIL.—"I don't see why you won't let me play with Will Hunt," pouted Walter Kirk. "I know he does not always mind his mother, and smokes cigars, and once in a while swears just a little. But I have been brought up better than that; he won't hurt me. I should think you would trust me. I might do him some good.

"Walter," said his mother, "take this glass of pure, clear water, and put just one drop of ink into it."

"O, mother! who would have thought one drop would blacken a whole glass so?"

"Yes, it has changed the color of the whole, has it not? It is a shame to do that. Just put a drop of clear water into it, and restore its purity," said Mrs. Kirk.

"Why, mother, you are laughing at me. One drop, nor a dozen, nor fifty, won't do that."

BOYS, DO YOUR BEST.—If you are running along in a hurry, and tumble over a brickbat and spill your dinner, kick the brickbat right out of the way, pick up your dinner-pail, save your bread and butter, if you can; if not, whistle "Hail Columbia," and run to school. It won't do to be put down by a brickbat. Take hold of a book as a squirrel takes hold of a hickory-nut. Be bound to get the meat out if there is any in it. Because Tom Lazychops wants to be a fool, it is no reason why you should be one. Do your best every time; and when the teacher calls out the classes, you can walk up like a man and tell him to go ahead.

TOMMY was cautioned against eating too much luncheon, because he would spoil his appetite for dinner. But Tommy said he would rather have a good luncheon than a good appetite any time.

DOMESTIC ECONOMY.

What We Can Do With Honey.

Honey is good with bread, and it is very general upon breakfast and tea tables in the country. Town people generally are not so far advanced. Here are a few methods of using it:

PRESERVING GRAPES WITH HONEY.—Mrs. Tupper says: Grapes, plums, and all kinds of crab-apples are especially nice. Jam or "butter" made with honey is delicious, whatever fruit is used. We have preserved grapes in this way for years, as follows: Seven pounds of fruit (in perfect bunches), four pounds of honey, one pint of good cider-vinegar, and spices of any or all kinds, to suit the taste. Boil the honey and vinegar together, with the spice tied in a cloth, pack the grapes closely in a jar, and turn the boiling syrup over them. If it is sealed at once no further care is necessary—it will keep for years. If not sealed the syrup should be turned off the ninth day, re-boiled, and turned again on the fruit.

PRESERVING GRAPES COLD.—Pick grapes from the stem and pack in a jar until it is full. Then turn honey cold over them until they are covered well. Seal up without any heat, and keep in a cool place. After a few months they will be found delicious.

GINGER SNAPS.—One pint of honey, three-fourths pound of butter, two teaspoonfuls of ginger, boil together a few minutes, and when nearly cold put in flour until it is nearly stiff; roll out thinly and bake quickly.

HONEY CAKE.—One cup butter two cups honey, four eggs well beaten, one teaspoonful essence of lemon, half a cup milk, sour, if possible, one teaspoonful soda, flour enough to make it as stiff as can well be stirred; bake at once in a quick oven.

HONEY FRUIT CAKE.—Four eggs, five cups flour, two cups honey, one cup sweet milk, two teaspoonfuls cream of tartar, one spoonful soda, one pound raisins and currants, one-fourth pound citron, one teaspoonful each cloves, cinnamon and nutmeg, bake in large loaf and slow oven. This will be good for months after baking as well as when fresh.

HONEY GINGERBREAD.—One cup of butter, two of honey, one of sour milk, one teaspoonful soda; flour stiff as can be stirred.

False Ideas About Kitchen Work.

"She works in a kitchen!" What a weight of sarcasm burdens the words! Is anything else half as disgraceful? Only the poor, the uneducated, the Irish and the German, are expected to work as cooks. Biddy and Katrina, of course, care less for the money, and they vie with each other as maids of the kitchen.

In a thousand homes they rule the mistress, and prepare the stomachs for the qualms of disease, for the bitter doses that cure. From a thousand homes comes a general cry for better help, or hands to faithfully toil over the dishes and the stove.

Why is the call unheeded? Why are so many needed, and so few who can worthily fill? Is such work noble? Are the workers treated like women, or like slaves? Is there prospect of pay in proportion to skill? Is there any advantage in being a first-class cook?

In the professions men are paid according to their skill, and the amount of labor performed. Why must woman ever drag through her work, paid a nominal price, as little as possible, without any prospect of increase of wages? Is her work useless? Is eating and living of the least account?

And men are treated like human beings in most pursuits. Why must the girl of the kitchen be a servant—a slave? Why make the cooking of food a disgraceful calling? Why not make it noble? Why teach the children that cooking and the kitchen are to be avoided? That they shall seek any other occupation rather than kitchen work.

Ah! there are evils germinating among us, because of the disgrace of the woman's chief work, that will come forth ere long as giants in society; evils from which a race may not easily get free. Shall we fight them with a will? or let them trail along as vipers, striking at the joys of home, at the nobleness of generations, at the virtue and the hope of woman.—*Ex.*

THE PREPARATION OF TEA.—The definite effects sought from tea-drinking over and above the mere comfort given by the hot liquid are produced by two ingredients of the leaf—the alkaloid *theine* and the aromatic matter. The latter is what is chiefly valued by the refined connoisseur of tea; and accordingly he (or she) makes tea by pouring perfectly boiling water on a pretty large allowance of leaf, drinking off the first infusion and rejecting the rest. Made in this manner tea is, no doubt, not only a very pleasant beverage, but also a most useful restorative; but, unfortunately, so far from being cheap, it is a costly beverage, and the poor cannot afford to drink it. The plan which they adopt is that of slow stewing, the tea-pot standing for hours together upon the hob. The result of this kind of cooking is that a very high percentage of *theine* (and also of the astringent substances which are ruinous to fine flavor) is

extracted, and the tea, though poor enough as regards any qualities which a refined taste would value, is, says the *Lancet*, decidedly a potent physiological agent.—*Scribner.*

Tender Beef.

Every one who has gone to market for ten years past, knows the uncertainty of obtaining from the butcher a joint of meat which will prove tender when cooked. The reason has frequently been stated in these pages, to be owing to the management of transportation. Grazing has necessarily given place, near our large cities, to dairying, and the consequence is, our supply of fresh beef comes from the West. Steers are crowded into cars, travel long distances without food and water, are bruised and jammed together—the change from green pastures to railroad cars being the greatest that can be imagined, and the consequence is, the animal system becomes heated, feverish and unhealthy. It is very often killed soon after arrival, and the meat is of course tough and unwholesome.

One of our prominent Philadelphia victualers informs us, he is now in the practice of transferring his stock arriving by rail, to his own pasture fields for two weeks or more before slaughtering. In this time the animal gets fully rested and recuperated; the feverish and excited condition passes off, the blood and juices of the system resume their natural channels, the normal healthy state is reached and there is no complaint of tough beef at the stall. This plan should be adopted by all butchers, and indeed something like it should be enforced by law.—*Practical Farmer.*

TO YOUNG HOUSEKEEPERS.—Be satisfied to commence on a small scale. It is too common for young housekeepers to begin where their mothers ended. Buy all that is necessary to work skillfully with; add to your house all that will make it comfortable. Do not look at richer homes, and covet their costly furniture. If secret dissatisfaction is ready to spring up, go a step further, and visit the homes of the suffering poor; behold dark, cheerless apartments, insufficient clothing, and absence of all comforts and refinements of social life, and then return to your own with a cheerful spirit. You will then be prepared to meet your husband with a grateful heart, and ready to appreciate the toil and self-denial which he has endured in the business worry to surround you with the delights of home, and you will co-operate cheerfully with him in so arranging your expenses that his mind will not be constantly harassed lest his family expenditures may encroach upon public payments.

Be independent; a young housekeeper never needed greater moral courage than she does now to resist the arrogance of fashion. Do not let the A's and B's decide what you shall have, neither let them hold the strings of your purse. You know best what you can and ought to afford. It matters little what people think, provided that you are true to yourself, to right and duty, and keep your expenses within your means.—*Rural New Yorker.*

CAMPOR INJURIOUS TO FURS.—A lady who was a devout believer in the power of camphor scattered the powdered gum thickly over her capes and muffs, and for two or three years triumphantly wore them, though all winter long the disagreeable odor was retained in the fur. But this was not all. Even the first year the hair seemed to have lost a little of its gloss and life, and by the third was too dull, old and worn-looking to be admired. Taking them to a furdresser for renovation, she was dismayed to hear that the gum-camphor had rendered her furs valueless.

Practical Recipes.

VEAL MOLD.—Line a small mold with hard-boiled eggs, cut across so as to show the yolk, and fill it up with small pieces of veal, nicely flavored, jelly or isinglass jelly.

KEEP WORMS FROM DRIED FRUIT.—Place your fruit in a steamer over a pot of boiling water, covered tightly. When thoroughly heated, tie them in a clean linen or cotton bag, and hang them up.

SPICE CAKE.—One cup butter, one of brown sugar, one and one-half of sour milk, one pint molasses, one tablespoon saleratus, three eggs, cinnamon, cloves, allspice, nutmeg, citron, currants, raisins. Stir stiff with flour, bake slow and steady.

BAKED TOMATOES.—Take them when fully ripe, cut off a slice from the stem side, scoop out the pulp of the tomato and mix with it bread crumbs, butter, pepper and salt. Fill the empty shell with the mixture, replace the slices, put them into a shallow pan and bake an hour.

BOSTON PUDDING.—Take six ounces of fine flour, six ounces of fresh suet shred fine, six ounces of raisins stoned, a cup of molasses, a cup of milk. Mix well, put in a basin, tie a cloth over and boil for three or four hours. Serve with sweet liquid sauce.

BURNT BUTTER.—Put two ounces of butter in a frying-pan and set on the fire; when of a dark brown color put in half a teacup of vinegar, a little pepper and salt. This is good for fish, salad or eggs.

BLEACHING FEATHERS.—First clean from greasy matter, then place the feathers in a dilute solution of bichromate of potassa, to

which a little nitric acid has been added. The greenish deposit of chromic sesquioxide which ensues may be removed by weak sulphuric acid, when the feathers will be left perfectly white.

HOW TO MAKE SEIDTLEZ POWDERS.—Seidtlez powders are an excellent corrective for acidity of the stomach, and every farmer can make them for himself. Mix 12 drachms of powdered epsom salts with twelve scruples of powdered carbonate of soda, and divide into six parts, in blue papers. Divide also into six parts, in white papers, four drachms of Tartaric acid, in six powders; to take the powders mix one of each paper in two glasses.

HOME BAKING POWDER.—Bicarbonate of soda, eight ounces; tartaric acid, seven ounces; carbonate of magnesia, six ounces; powdered starch, six ounces. Mix and rub through a fine sieve. These proportions make enough for a large family for some time. As our family is small, I only get half. I also use only two and a half teaspoonfuls where we generally used three.

Southern California.

Many of the ranchos of Southern California possess deep and fertile soils, are well watered and capable of producing anything that soil, climate and culture can raise. It is in San Luis Obispo county, however, that the Banner rancho of Southern California is to be found. It is the Nipoma rancho, owned by the Danas. This rancho is situated about twenty miles from San Luis Obispo, and covers an entire valley, sheltered from the hot winds of the interior by the San Luis range, and from the cold fogs of the sea by the coast range. It is eleven leagues in length, a good day's ride from one end to the other.

The valley ranges from ten to fifteen miles in width, is well watered by a fine stream flowing through its centre, and possesses a soil of black vegetable mould from twelve to twenty feet deep. Being level as a bowling green and clear of timber, the entire rancho is ready for the plow and susceptible of producing a sufficient quantity of cereals to feed a nation. At present, it is devoted exclusively to grazing; bands of sleek cattle, dotting it as far as the eye can reach, revelling during the spring time knee-deep in the wild clover and alfalfa, and during the summer season, feeding leisurely on the hay feed cured and stored by the hand of nature.

Pasturage.

Southern California is famous as a stock range, yet it is a source of astonishment to all strangers that repair hither during the summer season to know upon what the vast flocks and herds they are constantly meeting subsist. There is not a green blade to be seen anywhere, the entire country being enveloped in a winding sheet of dust. They are disposed to ridicule the assertion that the dusty covering of the hills and valleys contains an abundance of provender, and that upon the apparent worthless heaps of dried grass covering many of the plains, the flocks and herds fatten quicker than upon the green shoots of spring.

And so it is. Herders have no care for at least another year. The plentiful rainfall of last winter resulted in an abundance of grass, and heaps of alfalfa hay cover some plains, while clover burs, filled with nutritious seed, has intermingled with the dust covering others, out of which animals paw it with ease.

Farming in Southern California.

Eastern people visiting here express their surprise at the high price of land. That from \$200 to \$500 per acre should be asked for improved lands, to all appearance no better than lands that can be obtained in the Eastern States for \$20 to \$50 per acre, is something they cannot comprehend. And yet the reason why there should be such a difference is plain. For instance there are the corn lands of El Monte and Los Nietos, which yield from 90 to 120 bushels per acre.

This does seem to be an extravagant estimate when compared to the yield of the best corn lands in the Eastern slope of the Rocky Mountains, where thirty and thirty-five bushels per acre is considered a fine crop. Unimproved land adapted to the culture of the orange and the lemon can be obtained at \$30 per acre. One man can efficiently care for ten acre, at a salary of \$40 per month, or \$500 per year. Two-year old trees are now selling in the nurseries at one dollar each. In many of the older orchards in the county, the trees have been planted twenty five feet apart.

It is now conceded that more space is required for the trees, and new orchards are being planted with the trees thirty feet apart, making the total cost of land and stock to be \$800. The total outlay required for the first year aggregates, with an allowance of \$100 for incidental expenses, \$1,400. In at least six years from date of planting the trees will commence bearing, producing a crop sufficiently large to pay current expenses. The total investment up to that date, including cost of water, etc., will have amounted to, say, \$5,000.

Two years later these trees will yield a crop worth, at present prices, ten dollars per tree, or \$500 per acre, thus paying off the entire principal. In the following year, an increase of one-half may be expected in the crop, thus giving the owner the handsome return of \$7,500. This is no imaginary picture. There are innumerable instances in the Los Angeles and San Gabriel valleys, where these estimates have been more than realized. Orchards containing trees from twelve to sixteen years old, return to their

fortunate owners from \$1,000 to \$1,500 per annum.

Semi-Tropical Fruits.

Farmers are, at last, beginning to realize the fact that it is useless to direct their energies altogether to the culture of small grain. They have learned a serious lesson from the results of this year's harvest. In consequence of the abundance of rain during last winter, many of our farmers were induced to sow large tracts in wheat and barley. The former to a great extent failed, being attacked by rust, while an over-abundant crop of the latter so swamped the market that the growers scarcely realized sufficient to pay the expense of raising.

This disastrous result will cause them to direct their attention to the cultivation of semi-tropical fruit trees. The prospective fortunes in store for those who enter into the business of horticulture has induced the planting of at least half a million orange trees throughout the county during the present year. There are other trees besides the orange that give the owner handsome returns.

The olive tree is one of them. It takes kindly to the soil, and requires just about as much attention as the willow. Plants are usually set about forty feet apart, or twenty-five trees to an acre. When five years old it begins to bear. At twelve years it yields a crop worth about \$8 per tree, or \$200 per acre. With the exception of the old olive orchards attached to the various Missions in Southern California, the tree is not extensively cultivated.

Bee Farming.

It is estimated that the total quantity of farming land in this county does not exceed 160,000 acres, one-half consisting of irrigable lands, and the other half of lands capable of producing without irrigation. Nearly one-half of the county has heretofore been considered worthless, in consequence of its mountainous character and the scarcity of water for irrigation. During the last year, however, a new industry has sprung up, which promises to turn these waste lands to profitable account. That industry is bee farming.

The foot-hills at the base of the mountain ranges are covered with a thick growth of sage brush, greasewood and other undergrowth, which, during the spring and summer seasons bear an abundance of flowers, furnishing an inexhaustible supply of feed for the "busy bee." A league of such land, with a small rivulet upon it, is deemed an excellent location for a bee ranch, and everywhere among the foot-hills we find them springing up.

Many of these bee ranches are being stocked with swarms taken from the crevices of the rocks and the trunks of trees growing on the mountain sides, for really the mountains are literally flowing with honey.

To those that understand the business, bee-farming is an exceedingly profitable business. Two men can attend to about one hundred and fifty hives, which can be purchased at the end of the season for \$2 per hive. Besides tripling their numbers, these hives will yield, by careful handling, about 200 lbs. each, for which fifteen cents per pound can be readily obtained from the San Francisco commission houses. The total receipts thus obtained from honey alone, will thus amount to about \$3,000 in an apiary of 150 hives. Besides this, the bee-farmer will derive a revenue of about \$500 from the sale of swarms.

All these mountain lands are owned by Government, many of them open to pre-emption by settlers. There is, perhaps, no enterprise carried on within the country that requires less capital and labor, and surer and better returns to the experienced hand. Like every business that requires skilled labor, those who are inexperienced had better have nothing to do with it, as there are already a sufficient number of instances in the country of failure for the want of a right understanding of it.

According to the Assessor's returns for the present year, the number of hives in the county at the time the assessment roll was made up was 2,363. The season is now at an end, and the bees have ceased swarming, and the number of swarms now existing may be safely estimated at 5,000.—*Cor. Bulletin.*

The business of supplying San Francisco with fish is by no means contemptible. It seems that the number of men employed in catching fish for home consumption as well as for export is from five to six hundred, about one-half of whom are Italians and the rest Americans, Slavonians, Spaniards, Greeks and Portuguese from the Azore Islands. The Americans are mostly engaged in salmon fishing at Rio Vista and above, while on the Sacramento and its tributaries and sloughs below, it is entirely in the hands of the Italians. Of the total number there are distributed in the different fisheries as follows: Salmon catching, 200 men with 80 boats; bay fishing, 250 men with 80 boats; coast and inland fishing, 60 men with 15 boats. There are also a score of boats distributed at various points along the coast, where neighboring towns or communication with the interior offer reward to the fishermen's industry.

The Norfolk, Va., Manufacturing Company have built two canal boats to compete for the New York State prize. Both boats are constructed to hinge together, bow and stern, by a patent process, the latter portion of which will carry the motive power, which consists of a screw propeller and engine of forty-horse power.

[Continued from page 229.]

wooden, \$50; willow \$10; brooms, \$5. Also, a framed diploma for all of the above.

W. D. Freeman, Tomales, chairs; honorable mention.

R. S. Thompson, Napa City, Kimball & Hubbard's patent window extension-screen and mosquito bar; honorable mention.

CLASSES V AND VI.—CHEMICALS, ETC.

W. C. Palmer, S. F., Knowlton's blacking; \$5. Writing fluid; \$2 and framed diploma.

H. C. Kirk & Co., Sac., barrel of glue; honorable mention.

Jesse Healy, agent California Chemical Paint Co., S. F., Averill's chemical paint; \$5 with diploma, and specially recommended its use to the community for its cheapness, beauty and durability.

C. H. Krebs, Sac., three cases copal varnish, from S. F. Pioneer Varnish Works; \$5. Five gallons boiled linseed oil, from Pacific Lead Works; \$10. White lead, from Alta Lead Works; \$5. Five gallons castor oil, from Briggs Bros., Marysville; \$10. Samples of Cal. paint; honorable mention. Glue, from Pioneer Glue Factory; \$5. Turpentine, from Corder's Pioneer Distillery, Marysville; honorable mention.

CLASS VII.—GLASS, CROCKERY, STONEWARE, BRICKS AND TILES, CAL. MANUFACTURE.

N. Clark & Co., Sac., sewer-pipe; \$5 fire-brick, \$3.

Carlton, Newman & Co., S. F., best display of glassware; diploma.

Geo. G. W. Morgan, Sac., samples of stone manufactured by the Union Stone Company of Boston, Mass., under M. Sorrel's patent; diploma. "Committee would especially commend this invention to the favorable consideration of the public for its merits, it being, in our opinion, superior to all other similar inventions."

John Quigley, Alvarado, sack of table-salt; \$3, and diploma for general exhibition of salt.

Mattison & Williamson, Stockton, sample of California marble from Copperopolis, honorable mention.

Fifth Department.

CLASSES I AND II.—AGRICULTURAL PRODUCTS.

Bachman and Newberg, Sac., best sample of hops; \$5.

Frank Hamilton, San Jose, best sample of California wheat; \$10.

John Bidwell, Chico, best sample of Chile wheat; \$10.

J. Stoddard & Bros., Wheatland, best sack of flour; silver medal.

J. Fisher, Brighton, best bushel of yellow corn; \$5.

J. H. Wolfe, Brighton, best bushel of white corn \$5.

E. I. Sparks, Lincoln, best sample of club wheat; \$10.

Wm. Van Wert, Chico, exhibits a variety of wheat (Pride of Butte), which the committee recommends to the attention of the farmers of the State.

CLASS III.—VEGETABLES, ROOTS, ETC.

Robert Williamson, Sac., best half bushel of red potatoes \$5.

P. Hart, Sac., best half bushel white potatoes; \$5.

Peter Burns, Sac., best half bushel any other variety; \$5.

Robert Williamson, Sac., greatest variety of Irish potatoes and half peck of each, \$10; best half bushel sweet potatoes, \$5; best twelve parsnips, \$3; best twelve carrots, \$3; best six long blood beets, \$3; best six turnip beets, \$3; best six sugar beets, \$3; best peck tomatoes, \$3; best six drumhead cabbage, \$3; best six red Dutch cabbage, \$3.

Wm. Bihler, S. F., best six of any other variety; \$3.

J. R., Sac., best three heads of cauliflower, \$3; best three heads of broccoli, \$3.

Robert Williamson, Sac., best six heads of lettuce, \$2.

C. T. Wheeler, Sac., best half peck red onions, \$3.

P. Hart, Sac., best half peck yellow onions; \$3.

Robt. Williamson, Sac., best half peck white onions; \$3.

P. Hart, Sac., best half peck peppers for pickling; \$3.

Robert Williamson, Sac., best twelve roots of salsify, \$3; best six stalks celery, \$3.

J. H. Wolfe, Brighton, best six marrow squashes, \$3.

Robert Williamson, Sac., best six Hubbard squashes, \$3; best six crooknecked squashes, \$3.

Samuel Hury, San Joaquin river, largest pumpkin, \$5.

John H. Wolfe, Brighton, best dozen green sweet corn, \$3; three best mountain sweet watermelons, 2.

John Stularous, Brighton, three best watermelons of other variety, \$3.

John H. Wolfe, Brighton, best three green-flesh muskmelons, \$3; best three yellow-flesh muskmelons, \$3.

R. Williamson, Sac., best six cucumbers, \$2.

C. W. Adams, Sac., best half peck Lima beans in pod, \$3.

Robert Williamson, Sac., best half peck dried white beans, \$2; best half peck kidney bush beans in pod, \$3.

De Bernardi, Sacramento, best half peck pole beans other than Lima; \$2.

E. F. Aiken, Sac., best half peck dried field peas; \$2.

Robert Williamson, Sac., best half peck of dried garden peas; \$3.

W. W. Montgomery, Davisville, best half peck castor beans; \$5.

E. F. Aiken, Sac., greatest variety of dried peas; \$5.

J. R. Johnston, Sac., best half peck gherkin cucumber; \$3.

D. DeBernardi, Sac., best three purple egg-plants, \$5; best table or collection of vegetables, \$30.

J. R. Johnston, Sac., second best table or collection of vegetables, \$20.

Peter Burns, Burns' Slough, six sugar beets grown on red sand without irrigation; special premium recommended.

N. W. Brooks, Sac., two large squashes; honorable mention.

Wm. Bihler, S. F., six large sugar beets; special premium recommended.

J. R. Nickeson, Lincoln, one large water-melon, weighing 58½ pounds; special premium recommended. Three Casawba cantaloupes; honorable mention.

J. R. Johnston, Sac., three stalks of tobacco; special premium recommended.

Samuel Storms, Sac., six ears of popcorn; special premium recommended.

J. H. Wolfe, Brighton, five Mexican custard squashes and six Yankee pie pumpkins; special premium recommended for each.

Dewey & Co., S. F., four varieties of new kind and choice potatoes in jars, grown by C. H. Dwinelle of Oakland; special premium recommended.

A. D. Pryal, Brooklyn, box of new seedling potatoes; special premium recommended.

CLASS IV.

Thomas O'Brien, Sac., best and largest collection of flowering plants in bloom; \$25.

A. Ebel, Sac., best collection of ornamental foliage plants; \$25. Best collection of new and rare plants; \$15.

Thomas O'Brien, Sac., best collection of fuchsias in bloom; \$15. Best collection of cut flowers; \$10.

E. Parsons, Sac., best display of bouquets; \$10. Best collection of Australian plants; \$10.

A. Ebel, Sac., best collection of plants suitable for green house, conservatory and window culture; \$15.

CLASSES V., VI. AND VII.

Mrs. S. M. Hoover, Elk Grove, best and largest variety of jellies; \$20.

Mrs. H. Cronkite, Sac., best quality, but small quantity, of jellies; special premium recommended.

Mrs. J. P. Odbert, Sac., best and largest variety of canned fruits; \$20.

Mrs. S. M. Hoover, Elk Grove, best and largest variety of pickles; \$15. Best brandied peaches; \$5.

S. Cole, Gilroy, best and largest lot of cheese; diploma and \$20. Best cheese one year old and over; \$15. Best cheese made one year; \$10.

Mrs. E. F. Aiken, Sac., best twenty pounds roll butter; \$10. Best brown bread; \$5.

Mrs. J. H. Wolfe, Sac., best domestic rye bread; \$5. Best domestic white bread; \$5.

Clark & Harbison, San Diego, best and largest lot of honey; \$5.

Mrs. N. Clark, Sac., fine display of jellies; special premium recommended.

Mrs. J. P. Odbert, Sac., fine display of jellies; special premium recommended.

Sacramento Valley Beet Sugar Co., best display of sugar; \$20.

Sixth Department.

CLASS I—GREEN FRUITS.

H. S. Hutchinson, Marysville—Best display of apples; \$30.

A. S. Greenlaw, Sacramento—Best twelve varieties of apples; \$15.

Ira S. Bamber, Placerville—Best six varieties of apples; \$10.

Robert Williamson, Sacramento—Best three varieties of apples; \$5.

H. S. Hutchinson, Marysville—Best display of pears; \$30.

Ira S. Bamber, Placerville—Best twelve varieties of pears; \$15.

James Holland, Sacramento—Best six varieties of pears; \$10.

E. Dane, Sonora—Best three varieties of pears; \$5.

Ira S. Bamber, Placerville—Best display of peaches; \$15.

E. Dane, Sonora—Best six varieties of peaches; \$10.

E. F. Aiken, Sacramento—Best one variety of peaches; \$5.

Ira S. Bamber, Placerville—Best display of plums; \$15. Best five varieties of plums; \$10.

E. Dane, Sonora—Best one variety of plums; \$5.

H. S. Hutchinson, Sacramento—Best figs; \$5.

Auguste Abel, Sacramento—Best pomegranate; special premium recommended.

E. Dane, Sonora—Best display of seedling fruits; \$10.

James Crozier, Stockton—Thirty-eight varieties of apples; special premium recommended.

DRIED FRUITS.

Ira S. Bamber, Placerville—Best 25 pounds dried apples; \$20.

E. F. Aiken, Sacramento—Best 25 pounds dried pears; \$20.

E. Dane, Sonora—Best 25 pounds dried peaches; \$20.

E. F. Aiken, Sacramento—Best 25 pounds dried plums; \$20.

E. Dane, Sonora—Best 25 pounds dried nectarines; \$20.

Ira S. Bamber, Placerville—Best 20 pounds dried figs; \$10.

E. F. Aiken, Sacramento—Best exhibit of dried berries; \$10.

James R. Nickeson, Lincoln—Fifty pounds

of apples; special premium recommended.

L. A. Gould, Santa Clara—Twenty varieties of desiccated fruits; special premium recommended.

NUTS.

B. N. Bngbey, Folsom—Samples of Japanese chestnuts; special premium recommended.

Robert Williamson, Sacramento—Samples of almonds; \$5.

Seventh Department—Fine Arts.

G. H. Goddard, San Francisco—Best water-colored landscape; \$10.

Miss H. Millard, San José—For picture of Charbonaere grapes, in water colors (very fine); special premium recommended.

O. C. Schmidt, San Francisco—For water-colored portraits; special premium recommended.

Chas. Prosch, San Francisco—For water colored painting (superior workmanship); diploma.

D. H. Woods, Sacramento—For best exhibition of portrait painting in oil; \$40.

A. Hart, San Francisco—Best specimen of portrait painting in oil; \$20.

Wm. Keith, San Francisco—Best exhibition of landscape paintings in oil; \$20.

D. H. Woods, Sacramento—Best specimens of animal paintings in oil; \$40.

Wm. Keith, San Francisco—Best specimen of fruit painting; \$10.

W. Keith—Best exhibition of paintings; \$50.

Norton Bush, San Francisco—For best collection of tropical landscape paintings in oil; special premium recommended.

A. Hart, San Francisco—For collection of paintings in oil; special premium recommended.

E. P. Heald, San Francisco—Best penmanship; \$5.

C. C. Brown (pupil of Espina)—Best pen drawing and ornamental penmanship; \$5.

SCULPTURE.

De Long, Combs & Co., San José, by J. W. Combs—Two Medallion three-fourth views, taken from a photograph; special premium recommended.

J. C. Devine & Brother, Sacramento—Exhibition of sculpture; \$20. For best exhibition of statuary and busts in plaster; \$20.

Michael Kraker, Sacramento—Display of statuary in marble and bronze; special premium recommended.

J. C. Devine & Brother, Sacramento—Best collection of marble work; \$40.

DESIGNS.

Geo. G. W. Morgan, Sacramento—Designs for canal and narrow-gauge railroad combined; special premium recommended.

Frank P. Lowell, Sacramento—Design for carriage house and stable; diploma.

Miscellaneous Articles.

J. L. McKee, San Francisco—Best patent letter clip, special premium recommended.

Best universal glazing tool; special premium recommended.

Justin Gates and Bro., Sacramento—For soda apparatus; honorable mention.

Fairbanks and Hutchinson, San Francisco—For patent money drawer; honorable mention.

A. D. Oakley, Sacramento—For India rubber stamps; special premium recommended.

For novelty printer; special premium recommended.

For display of stencil goods; honorable mention.

John T. Lollner, Napa City—For mahogany cane; special premium recommended.

For cane made from wood taken from the Kearsarge; special premium recommended.

George Thistleton, San Francisco—Chromo lithograph parlor amusement; special premium recommended.

John A. Nehrbass, Sacramento—For two cases confectionery and confectionery ornaments; special premium recommended.

For landscape in confectionery; special premium recommended.

J. S. Harbison, Sacramento—Apiary of Italian bees, 473 hives; special premium recommended.

E. Eisenberg and Bros., San Francisco—One case cigars of California manufacture from Havana tobacco; silver medal recommended.

Committee deem their enterprise worthy of encouragement.

Wick & Clark, Sacramento—For general assortment of undertakers' goods, coffin-plates, etc.; special premium recommended.

For walnut casket and imitation rosewood child's casket; special premium recommended.

Supple Needle Manufacturing Co., San Francisco—Display of needles for sewing machines; special premium recommended.

J. A. Todd, Sacramento—Roller skates; special premium recommended.

Hartshorn & McPhun, San Francisco—Self-acting shade roller; special premium recommended.

C. C. Baker, Modesto—One fleece wool; special premium recommended.

Bowen Bros., San Francisco—Best display ground spices; diploma. Yeast powder; diploma.

Chas. Green, San Francisco—For axle grease; diploma.

W. C. Palmer, San Francisco—General assortment of Knowlton's writing inks and mucilage; diploma.

E. B. Tenney, Rippon, Labette county, Kansas—For window sash balance; diploma.

Wm. Blake, San Francisco—For renovator and dyes; diploma.

Waterhouse & Lester, Sacramento—For Clark's patent buggy sun and storm shade and protector; honorable mention.

Dr. B. H. Lyons, Honolulu, S. I.—For compound remedy for recent and chronic diseases; honorable mention.

W. C. Gerber, agent for Schreiber and Howell, Sacramento—Six chicory roots. The committee recommend this article to California farmers, as an important article for cultivation.

Dr. W. Henley, San Francisco—Display of Wild Cherry Tonic; framed diploma.

Treadwell & Co., San Francisco—For spark arrester; diploma.

W. H. Keep, Stockton—For portable forges and blowers; diploma.

J. Campbell, Sacramento—Wire mattress; honorable mention.

D. C. Brown, for Peck & Brown, Sacramento—Rock River building paper; diploma.

E. A. Wilcox, Sacramento—Crystalline hair toilet articles; honorable mention.

J. R. Johnson, Sacramento—three stalks of tobacco; meritorious exhibition.

Huntington, Hopkiss & Co., Sacramento—Locomotive head-lights; honorable mention.

San Francisco Wood Preserving Company—Disinfectant and elastic varnish and samples of wood preserved; diploma.

J. C. Gibson, Sacramento—Car brake and switch alarm; diploma. Diagonal marble saw; honorable mention.

Thos. Donnelly, San Francisco—Yeast powders; honorable mention.

D. A. Faulkner, Centerville—Patent punch for punching iron, California invention; diploma.

Warren Wasson, Carson City, Nevada—Bag holder; diploma. Stove-pipe damper; honorable mention.

Benj. Pollard, Dutch Flat—Patent invalid bedstead; diploma.

J. Armstrong, San Francisco—American bottle filler, a California invention; diploma.

Chas. H. Gordon, Mokelumne, Sacramento county—Wood-boring and iron drilling machine; honorable mention.

Miss Jennie Millard, San Francisco—Paints for wax flowers; diploma.

ARTICLES EXHIBITED BY CHILDREN UNDER SIXTEEN YEARS OF AGE.

The committee recommend the Board to consider the age of the children below mentioned, and award them special premiums for their work.

PUPILS OF MRS. CURTIS, SAN JOSE.

Fine pencil drawings, by Emily L. Peel, aged 10 years; Annetta Peel, \$12; H. G. Peel, \$16, and H. H. Curtis.

PUPILS OF MRS. BINGAY, SACRAMENTO.

Fine pencil drawings, by Nellie Wilsey, aged 11; Willie Osborn, 14; Hattie Lewis, 10; F. Massol, 11; Miss McClatchy, 11; Katie Wilsie, 13; Katie Waters, 13; Ella Bailey, 16; Charlie Warren, 12; Katie Allmond, 11; Mary Allmond, 15; J. H. H., 14.

Miss Kate Crocker, Sacramento, oil painting, "Still Life," very fine.

EMBROIDERY, CROCHET AND WAX-WORK.

Miss A. Peel, aged 9 years, San José, Worsted work.

Miss E. A. Peel, 10, embroidery.

Miss L. L. Coons, 13, feather and cone work.

Miss Katie Vandenberg, 12, crotchet work.

Miss Mary Barrett, worsted work.

Miss E. Hartwell, 9, butter monument.

Miss Katie Studarus, 12, silk flowers.

Miss Belle McGuire, 12, wax-work.

Miss N. E. C. Jackson, 13, patchwork quilt.

Miss Lizzie Gillan, 14, tapestry work.

Miss E. Kreutzberger, 15, tapestry work.

Miss C. Deterding, 14, tapestry work.

Miss B. Johnson, 15, variety of jellies.

UNION FOUNDRY—SACRAMENTO.—Messrs Root, Neilson & Co., proprietors of this establishment, have work on hand as follows: A ten-stamp mill for Amador County; contract for the Stanislaus County Court House, a substantial structure now being erected at Modesto.

This with a number of small jobs and miscellaneous work makes business quite lively. A larger amount and variety of "agricultural work" was turned out by them this season than ever before, including Byron Jackson's self-feeding attachment for threshers, and Churchman's horse-powers, both California inventions.

We are pleased to learn that the general machine and foundry business of Sacramento has been quite brisk and steady during the season.

STEAM PLOWING IN CUBA.—A sugar planter in Cuba writes that in November, 1868, he commenced work with one of the Fowler steam-plows, (running with two engines of fourteen-horse power each,) and since then has broken up 2,000 acres of strong clay land intermixed with stones of all sizes, and resting for the most part on a stone bottom, plowing to an average depth of eighteen inches. The plow having been managed by an experienced hand, the breakages have been few and of a trivial character, and the wire rope is still in excellent condition.

The lands of the estate have been doubled in value by steam-plowing, and what was formerly almost an impervious marsh, the effect partly of nature and partly of inefficient cultivation, has been reduced to a porous soil.

THERE are 80,000 less cattle in Maine now than ten years ago, caused by a succession of light hay crops.

Agricultural College of the University of California.

LAYING OF THE CORNER STONE, AT BERKLEY, OCT. 9th.

From six to eight hundred of the earnest citizens of the State were present on this interesting occasion, including the Regents, the Faculty and students of the University. Governor Newton Booth presided. Music was furnished by the 14th Regiment band.

The College of Agriculture is one of the principal buildings designed for the University. Facing the bay and ocean, it is located on the left. The College of Letters, the next in order of construction, will occupy a central position.

The basement of the College of Agriculture commences some three feet below the surface of the ground, and is faced with unfinished granite—complete with the exception of the northeast corner where the ceremonies were had. The next story, just being commenced, is of brick, with corners, casings and a portion of the facings, of iron. The whole is bound together by a careful system of iron bars, introduced in its structure. Its frontage towards the bay is 150 feet, by 50 feet in depth.

The ceremonies of laying the corner stone were plain, brief and sensible. Bishop Kipp made the opening prayer and the benediction. Horatio Stebbins, D. D., gave the address. Gov. Booth led the ceremonies, assisted by David Farquharson, Architect; J. W. Duncan, Superintendent; and A. G. Moulder, Secretary.

The oration was an able, brief, and pleasing one. We think it might appropriately, however, more fully alluded to agricultural education and its immense future importance.

Dr. Stebbins urged that the State should certainly provide for the higher wants of its community—the best means for education. He spoke eloquently of the beautiful site granted the University by the College of California.

What the University has Already Done.

The university has gathered within its walls a faculty of instruction, among whom are men of original, scientific research, imbued with the spirit of ancient and modern letters; and its pupilage sustains a normal relation to the population of the State. President Durant, one of the pioneers of education in the State, will retire from his office with the grateful and honorable regards of all, and with the self-sustaining consciousness of his own breast that he has contributed something to the treasury of indestructible good. His successor, Professor Gilman, of one of the departments of Yale College, a man of honorable repute, from whom the State may expect much, will soon assume the duties of internal government and administration.

Already the University enjoys the fostering care of the State, expressed in that liberal legislation which characterizes free and intelligent peoples. It has attracted private munificence also. A distinguished citizen and member of our Board of Regents, Edward Tompkins, has established a professorship of oriental language and literature, and attached to it the name of the great naturalist Agassiz; thus weaving the double thread of science and letters, fact and imagination, nature and human nature into the fabric of our common learning. I know not which most to admire, the liberality of his endowment, the moral delicacy with which it was made, or the wise and timely foresight which establishes here in this new and ever-widening experience of civilization, a medium for the study and interpretation of those languages which were first spoken at the cradle of humanity, and are still spoken by more than one-third of the human race.

Mr. Tompkins, we greet you with the cheer and gratitude and hope of the occasion!

Its Purpose.

It is the ultimate purpose of the University to furnish a complete course of human study, and to supply, also, the partial of technique studies which are limited by special vocation and practical life. There are two views of education which, while they cannot be definitely distinguished, cannot be completely blended and made to unite in one perception. One theory makes science the instrument of the mind. One trains the mind; the other practices the artisan. One makes its disciple lawyer, doctor or farmer; the other makes him free lenizen of the realm of intellectual and moral natures! Which of these theories shall be pursued depends not solely on the studies of the University, but on the spirit of the student and his teachers. According to ability, inclination intellectual sympathy and enthusiasm, the student will be educated as a machine or as a man. Young men, students of the University, the occasion is yours! Happy generation to whom his light has come! Enough for you, indeed, from this hour of ceremony you shall know that knowledge is not education. Neither is it string of facts, or the practice of an art, but principles which inspire the mind and kindle the imagination!

Allow me to salute you on this fair morning of this propitious day!

Its Broad Liberality.

The University is open to the young women

of the State on the same terms as to the young men. A discrimination unfavorable to the education of women is the remnant of a cloistered age. It is contrary to the ideas and practice of our system of public instruction, and in opposition to the best experience. The presumptions are against it. The elective system of studies, made necessary by the vast increase of the subjects of study; instruction by lectures, so important a part of a University course; the great advantages, without increased expense, which center in an established community of learning, all justify and encourage the claim which our daughters make for the best education our institutions afford.

In the meantime the instincts of social order and law have developed a State—a State whose great products are gold, wheat, wine and wool, and whose finer industries yet undeveloped, are to exceed all present accomplishment, and all present belief. Her schools, her charities, her institutions of religion, her laws, the expression of that which is noblest in man or formed in the intelligence, rectitude and love of the people.

Deposited Under the Stone.

A heremetic sealed, copper box, was deposited in a cavity beneath the corner stone, containing a parchment-scroll, upon which are inscribed the names of the Regents of the University of California, and of the officers of the Board, the names of the ex-Regents; of the names of the officers, Professors, and Instructors of the University, of the Architect, Builder and Superintendent of Construction, copies of the S. F., and Oakland daily papers, the PACIFIC RURAL PRESS and the MINING AND SCIENTIFIC PRESS, of the Oct. 5th, 1872.

A sample of wheat grown in Sierra valley at the estimated height of 6,000 feet above the sea; coins and a photograph by Prof. Joseph Le Conte; and other appropriate articles.

A plain collation, with fruits, wine and lemonade, was provided in the basement of the building, and partaken of by a majority present. All seemed blessed with an "out-door" appetite.

The most gratifying feature of the occasion to us was the earnestness of good purpose which seemed to beam in the very faces of the Regents present and the goodly collection of leading and real intelligence loving people.

OAKLAND FARMING, HORTICULTURAL AND INDUSTRIAL CLUB.—The next meeting takes place by adjournment on Monday evening, Oct. 14th. Dr. E. S. Carr, the President, will lecture, with experiments, upon a timely subject. Discussion is invited, verbally and by correspondence, on the planting of nut trees in California—their profits, etc.

FROM FAR AWAY.—We have just received from Wm. H. Wetmore, Secretary of Southern Colorado Agricultural and Industrial Association, a Complimentary Ticket to the Fair, commencing Oct. 9th. We cannot possibly get there in time.

ON FILE.—G. C. P., Vallejo; M. A., Peabody; F. M. S., Santa Barbara.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Oct. 10.

FLOUR.—The interior and local demand is active, with a moderate inquiry for export. We quote prices as follows:

Superfine, \$4.00@4.50; extra, in sacks, of 196 lbs. \$5.25@5.50; Oregon brands, \$4.75 @ \$5.25 in sacks of 196 lbs.

WHEAT.—The market has not been very active since our last review; owing to the scarcity of vessels exporters are not anxious to buy, and buying in the interior has almost stopped. Sales aggregate 50,000 sacks fair to choice, at \$1.57½ @ \$1.62½. The range for shipping grades is \$1.55@1.60; and choice milling, \$1.55@1.60 per 100 pounds.

The latest Liverpool market quotations come through at 13s. 2d. per cental.

BARLEY.—The market is dull and weak. Bay, \$1.20@1.27½; Coast, 110@117½ per 100 pounds.

OATS.—Market is rather dull. Ordinary to choice, \$1.50 to \$1.85 per 100 lbs.

CORN.—Yellow, \$1.62½@1.65 per 100 lbs.; White, \$1.65@1.70.

CORNMEAL.—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$1.75@2.00 per 100 lbs.

RYE.—Is quiet at \$1.75@1.85 per 100 lbs.

STRAW.—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN.—Price is now \$20 per ton from the mill.

MIDDINGS.—For feed, are selling at \$25.00 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been free during the week. Quotable at close at \$9@17.00 ordinary to choice.

POTATOES.—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from \$1.50 to \$1.80. Carolina, 75c. per 100 lbs.

ONIONS.—Quotable at \$1.12½ per 100 lbs.

WOOL.—The market continues dull. Sales of 250,000 lbs. Fall at current rates. Spring is neglected and nominal. Fall, 12@15c. for burry, and 16@18c. for clear; 19@20c. for choice.

TALLOW.—Good quality of Cal. 8@8½c.

SEEDS.—Flax 3c.; Canary, 4½c. Mustard, 1@3c. per lb.

PROVISIONS.—Following are jobbing quotations: California Bacon 13@14c per lb.; Eastern do. 12@13c for clear and 14@15c for sugar-cured Breakfast; Cal. Hams 14½@15½; Eastern do. 20@22c; California Smoked Beef, 12½@13c. per lb.

BEANS.—The following are jobbing rates: Pea \$2.75; Small White \$2.75; Small Butter, \$2.75; large \$3.00. Bayo, \$3.00@3.25; Pink, \$2.75@3.00 per ctl.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8 Pecan, 20c per lb.; Hickory, 12c; Brazil, 15c. Chili Walnuts, 15c.; French Almonds, 25 @ 30c.; Princess Almonds, 35@40c.; Cocoanuts, \$10.00 per 100.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 8@8½c per lb. do. 2d quality 6@7½c per lb. do. 3d do. 4½@6c.

VEAL.—Quotable at 7@12½c.

LAMB.—Out of market.

MUTTON.—Quiet at 6½@7c. per lb.

PORK.—Undressed grain-fed is quotable at 6@6½c. dressed, grain-fed, 8@9c. per lb.

POULTRY.—Live Turkeys, 20@22c. per lb.; Hens \$9.00@9.50; Roosters, \$6.00@7.00 per dozen; Spring Chickens, \$4.50@5.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 per dozen.

WILD GAME.—Quail, \$1.75@2.00; Hare, \$3.50@4.00; Rabbits, \$1.50@2.00; Larks, Doves, Plover and Curlew, 50c.@1.00; Mallard Ducks, \$4.50@5.00; Teal, \$2.75@3.00; English Snipe, \$3.00, small, \$1.50; Venison, 8@10c. per lb.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 40@55c., per lb. Inferior and ordinary roll is plentiful, but dull at 35@40c.; choice 50@55c. New firkin is quotable at 25@30c.; pickled, 32½@37½c.; Eastern firkin 18@27½c.

CHEESE.—New California, 10@15c; Eastern at 14@17c. per lb.

Eggs.—California fresh, have advanced to 50c. @52½c.; Oregon, 40c.@42½c.; Eastern, 27½@32½c. per doz.

LARD.—California 12@13. Eastern in cases 13@13½c.; do in tcs. 11½@12c.; in kegs, 12@12½c. per lb.

HIDES.—Sales for the week embrace 970 Cal. dry at 17@18c., and 1,350 salted at 8@9.

FRUIT MARKET.

Lah's Oranges, M	— @ —	Hungarian Prunes, 6	@ 8
Limes, M	15 @ 20	Quinces, bx	1 50 @ 2 50
Au'n Lemons, M	— @ 6	Pomegranates, b	— @ 4
Sicily do, bx	15 @ 16	Plums, M	6 @ 8
Bananas, 3 bunches	20 @ 24	Plums, Common	3 @ 4
Pineapples, doz	10 @ 12	Figs, M	— @ 10
Apples, Bell, bx	25 @ 30	Crab Apples, lb	— @ —
King, do	15 @ 20	Straw'r's, b	— @ 10
R. L. Greening	75 @ 100	Blackberries, b	— @ 10
Northern Spy	100 @ 125	Raspberries, b	— @ 10
Sevator	125 @ 150	Cantaloupes, 100	@ 1 50
Spitzenberg	150 @ 175	Waterm'l's	100 @ 10 00
Pears, Bartlett, bx	50 @ 75	Grapes, Mission	1 1/2 @ 2
Seckels do	75 @ 100	Casselas	2 1/2 @ 3
Dutchess do	100 @ 125	Blk Malvoisie	4 @ 5
Fall Eater	125 @ 150	Rose of Peru	4 @ 5
Beaure (Claer)	200 @ 250	Black Prince	4 @ 5
Beaure Hrdyl	50 @ 75	Muscot of Al'r	4 @ 6
Peaches, Comm	5 @ 10	Flame Tokay	5 @ 6
Apricots, M	— @ —	Black Morocco	8 @ 10
Nectarines, bx	— @ —	Wine Grapes	14 @ 1 1/2
German Prunes, 6	@ 8		

DRIED FRUIT.

Apples, M	7 @ 8	Pitted, do	18 @ 20
Pears, M	9 @ 10	Raisins, M	5 @ 15
Peaches, M	8 @ 9	Black Figs, M	6 @ 8
Apricots, M	— @ —	White, do	15 @ 20
Plums, M	6 @ 8		

VEGETABLES.

Cabbage, M	1/2 @ 3/4	Cucumbers, M	10 @ 15
Brussels, M	1/2 @ 3/4	Tomatoes, river bx	50 @ 60
Rubarb, M	1/2 @ 3/4	Tomato's, hay, bx	50 @ 60
Green Peas	2 1/2 @ 3	Sprng Beans, M	2 @ 3
Sweet Peas	— @ —	Lima Beans	3 1/2 @ 4
Green Corn doz	12 @ 18	Egg Plants	1 1/2 @ 2
Marrowfat Squash	per 7 00 @ 8 00	Peppers	1 1/2 @ 2
Artichokes, M	4 @ —	Okra	3 @ 4

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BAGS AND BAGGING.—English Standard Wheat bags, hand sewed, 15½@16c; Flour sacks 9@9½c. for qrs. and 13½@15½c. for hlfs. Standard Gunnies are jobbing at 18½c; Wool 70@75c; Barley sacks 17½@18½; Hessians, 40-inch goods, 11@12c. per yard.

BUILDING AND FENCING MATERIALS.—The demand for Redwood lumber is light and supplies are heavy; export trade is light owing to scarcity of tonnage and high freights. A large cargo arrived this week which was sold considerably below the rates established by the Association. Dealers pay for cargoes of Oregon as follows: Rough \$16@18; do. surfaced at \$28@30; Spruce \$17@18.

Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$35@45.

COFFEE.—Costa Rica 20½c; Guatemala 18c. Java 23c; Manilla, 18½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 12½.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod new, in bundles at 6½c; Salmon in bbls. \$5.00@6.00, hf do. \$3.50@4.00; Case Salmon, \$3.00 for 2½-b. cans, \$2.50 for 2-b. cans, and \$2.00 for 1-b. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.00@2.25; Mess, \$2.50; Extra mess, \$3.00.

San Francisco Retail Market Rates.

THURSDAY NOON, Oct. 10, 1872.

MISCELLANEOUS.			
Butter, Cal fr. b	60 @ 65	Flour, qrs.	9 @ 9 1/2
do Oregon, b	— @ —	do Hlf.	13 @ 13 1/2
Honey, M	20 @ 30	Potato G'y Bags	18 @ —
Cheese, M	20 @ 25	Second-hand do	12 @ 18
Swiss Cheese, b	50 @ —	Deer Skins, M	15 @ 22
Eggs, per doz	45 @ 65	Sheep skins, wlon	50 @ 75
Lard, M	18 @ 20	Sheep skins, plain	1 50 @ 5 50
Sugar, cr. 7 1/2 b	100 @ —	Goat skins, each	25 @ 50
Brown, do	9 @ 10	Dry Cal. Hides	17 @ 18
Beef, do	12 @ —	Salted do	8 @ 9
Sugar, Map. b	20 @ —	Dry Mex. Hides	17 1/2 @ —
Plums, dried, M	15 @ 30	Salted do	9 @ —
Peaches, dried, M	12 1/2 @ —	Codfish, dry, b	10 @ 12 1/2
Wool Sacks, new	70 @ —	Live Oak Wood	@ 10 00
Wheat-sks, 22x36	15 @ 16 1/2	Tallow, M	8 @ 8 1/2

PRODUCE, ETC.			
Flour, ex, M	50 @ 55	Barley, cwt.	1 50 @ 1 65
Superfine, do	4 1/2 @ —	Beans, cwt.	4 00 @ 5 00
Corn Meal, 100 b	3 00 @ 3 50	Dry Lima Beans	4 @ 5
Wheat, M	100 bbl. 60 @ 65	Hay, M	17 00 @ 25 00
Oats, M	100 bbl. 1 50 @ 1 80	Potatoes, M	1 75 @ 2 00

FRUITS, VEGETABLES, ETC.			
Apricots, M	— @ —	Celery, doz	75 @ 1 00
Pine Apples, M	— @ —	Cucumbers, M	8 @ 15
Bananas, M	— @ —	Tomatoes, M	5 @ 25
Cantaloupes, M	15 @ 37 1/2	Cress, M doz bun	20 @ 25
Watermelons	25 @ 37 1/2	Dried Herbs, b	25 @ 50
Cal. Walnuts, M	20 @ —	Garlics	8 @ 10
Cranberries, M	100 @ —	Green Peas, M	5 @ 6
Strawberries, M	1 @ 150	Green Corn, doz	25 @ 37 1/2
Raspberries, M	1 @ 25	Peas, doz	37 1/2 @ 50
Cranberries, O, M	1 @ 25	Mushrooms, M	60 @ 75
Gooseberries, M	— @ —	Horseradish, M	20 @ —
Cherries, M	— @ —	Okra, dried, M	50 @ 4
Oranges, M	50 @ 75	Pumpkins, M	3 @ 4
Lemons, M	50 @ 75	Parsnips, doz	37 1/2 @ 50
Limes, per 100	2 50 @ 3 50	Parsley	25 @ 25
Figs, fresh, M	10 @ 15	Pickles, M gal	50 @ 100
Asparagus, wb	50 @ —	Rhubarb, M	6 @ 8
Artichokes, doz	50 @ —	Radishes, doz	2 @ 25
Brussels sprouts	5 @ 25	Summer Squash	3 @ —
Beet, M	25 @ —	Marrows, M	2 @ 25
Potatoes, New M	2 @ 2 1/2	Hubbard, do	4 @ 4
Potatoes, sweet, M	4 @ —	Dry Lima, hlf	6 @ 8
Broccoli, M doz	50 @ 70	Spinage, M hskt	25 @ 50
Cauliflower, M	1 00 @ 1 50	Salsify, M bunch	12 @ 25
Cabbage, M	10 @ 15	Turairs, M doz	25 @ —
Carrots, M	15 @ 25		

Carrots, per doz.		15	@	25	POULTRY, GAME, FISH, MEATS, ETC.	
Chickens, apiece	75	@	1	00	Choice D'field	— @ 25
Turkeys, ½ lb.	25	@	30		Whittaker's	— @ 25
Ducks, wild, ½ p	50	@	1	25	Johnson's Or.	— @ 25
Tame, do.	1 00	@	25		Flounder, ½ lb.	— @ 30
Teal, per doz.	2 50	@	—		Salmon, ½ lb.	12½ @ 15
Geese, wild, per pair	10	@	100		Smoked, new, ½	12½ @ 15
Tame, pair	3 00	@	40		Pickled, ½ lb.	8 @ 10
Hens, each	75	@	25		Rock Cod, ½ lb.	8 @ 10
Snipe, per doz.	—	@	—		Perch, s water, b	8 @ 12
English, do	—	@	—		Fresh water, b	— @ 10
Quails, per doz.	2 50	@	—		Lake Big Trout	37½ @ 50
Pigeons, dom, doz	30	@	50		Smelt, large	— @ 10
Wild, do	2 00	@	—		Small do.	8 @ 10
Hares, each	37½	@	50		Silver Smelts . . .	15 @ 10
Rabbits, tame, ½	25	@	75		Solcs, M	57½ @ 10
Wild, do, per dz l	15	@	20		Herring, fresh . .	20 @ 25
Beef, tend, ½ lb.	18	@	20		Sm kd, per 100 . .	— @ 100
Corned, ½ lb.	8	@	10		Starling, M	25 @ 30
Smoked, ½ lb.	15	@	—		Terrapin, per doz	— @ 4 00
Pork, rib, etc, ½ lb	10	@	15		Mackerel, p, ea	15 @ 25
Chops, do	15	@	—		Fresh, do	— @ 10
Veal, ½ lb.	15	@	20		Sea Bass, ½ lb.	12½ @ 10
Cutlet, do.	20	@	25		Halibut	40 @ 50
Mutton chops, ½	12½	@	15		Starling, M	4 @ 5
Leg, ½ lb.	12½	@	15		Oysters, ½ lb.	100 @ 1 25
Lamb, ½ lb.	12	@	20		Cheep, per doz.	50 @ 2 00
Tongues, beef, ea	75	@	—		Turbot.	30 @ 35
Tongues, pig, ea	18	@	12½		Garbs per doz. . .	100 @ 30
Bacon, Cal., ½ lb	18	@	20		Soft Shell.	— @ 30
Oregon, do	18	@	20		Crabs, 100	10 @ 10
Pigs, 16 lb	16	@	18		Prawns.	50 @ 75
Hams, Cross s o	—	@	25		Sardines.	8 @ 10
* Per lb. † Per dozen.					† Per gallon.	

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Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent, payable annually. Apply at the office of the Company, No. 542, corner Market and Montgomery streets, over the Hibernal Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim. 12v3-tf

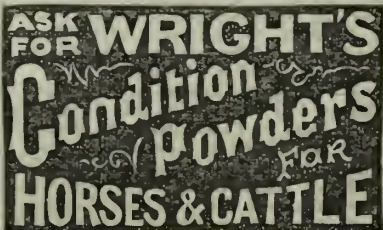
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If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

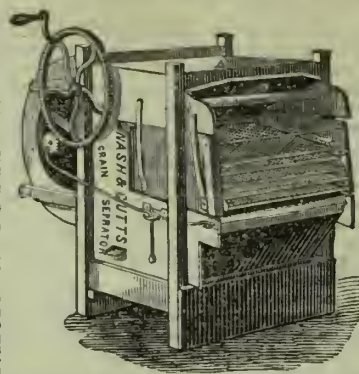
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N. B.—All the Nash & Cutts Steam Separators are fully warranted. 3v4-15t**Something New for the Kitchen.****THE**
Aerating Egg Beater.

Various devices have been presented to the public for heating eggs, but nothing, we think, equal to the one herein shown. This, in fact, is the only aerating device ever made, and is very properly called the "Aerating Egg Beater." This Beater, as will be seen by reference to the engraving, is simply a tin can with a cone bottom and a cone dasher, the lower portion of the dasher being perforated with very small holes, as shown. Under this arrangement the upper portion, when forced down, fills with air which is forced through the egg, thereby finely dividing and thoroughly aerating the mass. It beats one egg as well as half a dozen. For further particulars address

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Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

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As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

HUCKS & LAMBERTInvite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.
3v24-cowr**GOOD CABLE SCREW WIRE****Boots and Shoes****ARE SELLING FROM MAINE TO CALIFORNIA.****Petersen's Patent Bee-Hive.**

This HIVE is a California invention, simple in its construction, and being made entirely of wood, is cheap enough for the amateur or professional bee keeper. Among the paramount objects secured by this Hive are the facility it affords of examining at all times the stores of the bees, and the taking away of any surplus, or supplying whatever may be wanting. Also the presence and state of health of the queen bee; in fact, of the whole hive. It enables the keeper to interfere in all sorts of emergencies; increasing the number of bees by artificially creating young swarms; and what is of especial importance to the progress of bee science, can be thoroughly examined with reference to the behavior and habits of the different bees, queens, drones and workers, although there is no glass used in its construction.

Persons familiar with the habits of bees know that one of their most necessary and frequent employments is the expulsion of the over-heated and foul air from the hive. To do this, the bees station themselves at or near the opening in the hive, turning their heads inwards, take hold with their feet and move their wings with such rapidity as to cause a considerable current of air, frequently causing a draft strong enough to be perceptible felt outside the hive. The improvements in this hive consist in providing it with suitable openings both above and below, by means of which the necessary ventilation can be secured and regulated. One Hive has a gable roof, and at intervals in the upper edge of the side walls saw cuts or kerfs are provided which will be sufficiently wide to afford a passage for the air. A strip is secured between the projecting eaves and side of the hive so as to leave a triangular space extending from end to end of the hive, and thus providing a passage for the air. By stopping up the ends of this passage the ventilation is shut off. Near the bottom of the hive is a false bottom, the side edges of which are also provided with saw cuts or kerfs. At short intervals and in the lower edge of the sides of the hives other kerfs are cut so as to break joints with the first mentioned. The frames are made in the usual manner, except that the upper corners are rounded and project slightly, so that they will fit into a groove in the upper part of the hive and be suspended there, and they can be turned slightly so as to come out easily. There is sufficient space over them to admit the hand so as to remove them when necessary. A flat piece of wood covering two frames is laid over the tops so as to prevent the bees from building above. When these loose pieces are taken out, the frames may be removed. There is a door at each end of the hive which may be opened so as to get at the honey from either end. A portion of the hive may be partitioned off, when convenient, by a piece of board which fits into it. The other hive is similar in construction, the only difference being the flat roof, making it cheaper.

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642 Mission Street, above New Montgomery, San Francisco.
23v3-6m**M. WALTHALL and S. T. NYE**

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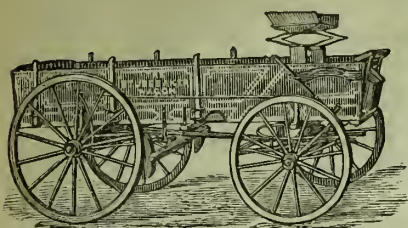
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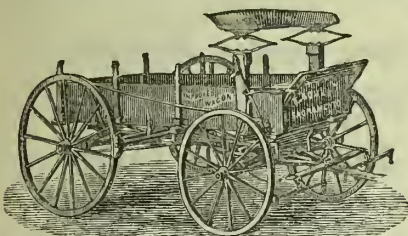
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AND EXCELLENT STYLE,
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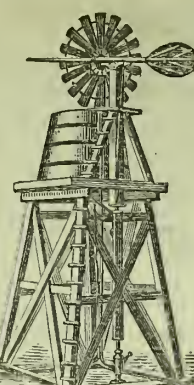
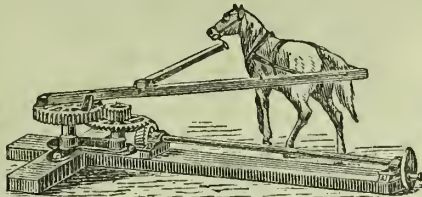
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Economy.

Is now the favorite of this State, and sells three to one of any other make.

N. B.—A few Windmills have heretofore been made by parties in this city, and advertised under the
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Is giving complete satisfaction wherever it is used. It
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FULL, no matter how often they may vary in size. It
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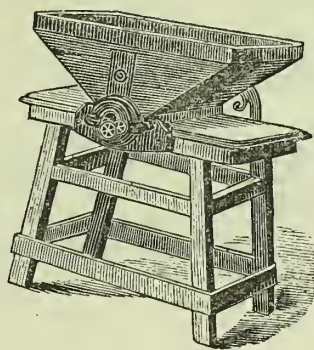
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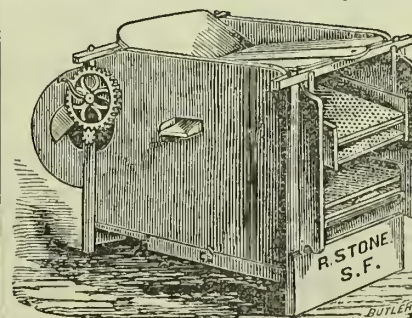
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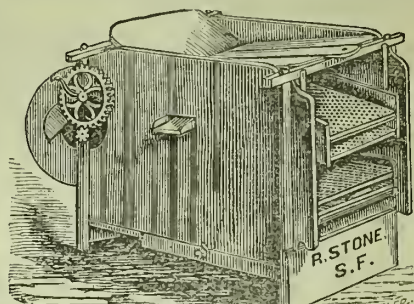
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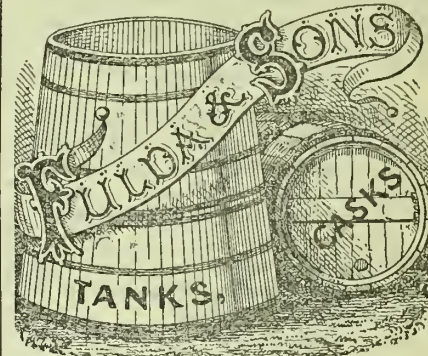
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Redwood Water Tanks,

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2 hoop 2 1/2 x 3-16.
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x 3-16.
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3 hoops 3 x 3-16.

PRICE, - - - From 1 1/2 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any
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ALL WINE TANKS made of SPLIT lumber 2 1/2
inch thick, steamed and thoroughly seasoned, from 2c.
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Manhole and with our newly invented appliance for
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REDWOOD CASKS (split lumber) with oak middle
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WIESTER & CO.,

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EVERY farmer in California should be a reader of the PACIFIC RURAL PRESS. It is an agricultural paper of great excellence. The subscription price is \$4 a year, but we have made arrangements with the publishers whereby we can furnish the RURAL PRESS and the Flag together for \$6 a year.—Herald and Flag.

PERSONAL.—We last night received a pleasant call from L. P. McCarty, the traveling correspondent of the San Francisco Mining and Scientific Press. Mr. McCarty has just made the tour of White Pine, Schell Creek, Robinson, Pioche and other districts bordering on the Utah line. While here, some weeks ago, he wrote to our paper a very exhaustive account of our district and its resources. The Mining and Scientific Press makes the mining interest of the country a speciality, and it has already attained a very large circulation. It is the most complete and reliable exponent of that particular branch of industry published on the Pacific Coast. No miner or business man should be without it. Mr. McCarty will remain with us until Saturday morning, and we bespeak for him the favorable commendation of all with whom he may come in contact.—Eureka Sentinel, Aug. 15th.



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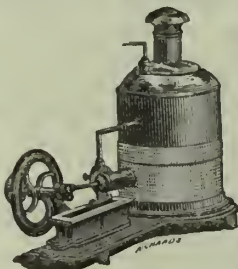
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PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, OCTOBER 19, 1872.

[Number 16.]

No Fixed Rule or Opinion.

Though we have been growing wheat in California for 20 years or more, and experimenting with nearly as many varieties, our farmers are not yet agreed upon the best variety for general cultivation, but continue to grow several of them and each man has his reason for his preference.

Doubtless much depends upon soil, for it would hardly be supposed that the same variety would be found equally good on all the soils presented in the vast area of alluvium, plain and hill lands of the State, yet it would seem that two farmers side by side upon the same quality of land might agree as to which of two varieties was really the best for general culture.

At a recent discussion of the Farmers' Club at Contra Costa this subject came up, and though there seemed to be the largest number in favor of the "Sonora" variety, there were some that no argument could move from their belief that the "Club" or "Chile" wheat was the best.

There is even a greater difference of opinion in regard to the quantity of wheat that should be sown to the acre; and it would seem that in this, there might be more of an agreement among farmers than there is, but at the same discussion alluded to, Mr. Cary said his neighbor had sown forty pounds, and it yielded 65 bushels to the acre. He believed in heavy seeding. Mr. Blair thought that one grain of wheat, for every foot square, enough. Mr. Plumley had sown 52 pounds; thought it about right. Mr. Walton had sown 40 pounds and it was too much; he thought 30 enough.

Mr. Weber had sown 60 early and 70 later; thought it right. Mr. Dean had sown 45 and 60; thought it too much, 30 enough. Mr. Dumont farmed since '54, most of the time around the bay; there he had sown as high as 120 pounds of wheat, but here he had put on about 70; did not think he would put on that much this year.

We are inclined to think this great discrepancy of opinion arises from a neglect to make carefully conducted experiments. If upon the same field a part was seeded with 30 pounds and another with 60 pounds, and carefully note the result, that would denote the proper quantity for that kind of land, in the condition it was in, and the season of the year when sown; but if early sown, as in October or November, or late, as in March, the quantity found best, might be quite different. Let more careful experiments be instituted.

CASTOR BEANS.—We know of parties in the southern counties of the State who are intending to go largely into the culture of the castor bean another year. For the information of such we clip from an exchange the following: "Yuba and Sutter have been extensive castor-bean growing counties for several years past, but the crop failing to be as remunerative as was anticipated, many farmers abandoned the growing. While the castor-bean fever was at its zenith, John Briggs, an enterprising fruit-grower, erected on his ranch, near Yuba City, a hydraulic mill of considerable capacity, and last season manufactured thousands of gallons of very fine oil, but the price of the article being low, the enterprise proved unremunerative."

RAISIN GRAPE.—A grape grower who is sure he's right, says: "The very best grape for raisins is probably the White Muscat of Alexandria." The raisin business is one of the most promising industries on this coast.

Complete Farm House and Stable.

We give in the accompanying illustration the elevation and ground plan of a not very extensive but well arranged farm house that in very many localities would be an embellishment to the landscape and farm and giving to the

Description.

No. 1, verandah, 8 feet wide extending across the whole front. No. 2, main hall 11 feet wide and 24 feet long. No. 3, Parlor 16 feet square. No. 4, living room 16 ft. by 20 feet and finished with a closet No. 9, under the front stairs. Crossing a small passage way No. 8, where



COMPLETE FARM HOUSE.

latter that kind of adornment which speaks of an easy competence and general thrift of the possessor, and much of that happy home comfort that should, long before life's weary years are numbered, fall to the lot of the families of the hardy tillers of the soil.

It might be desired of us, that we would give

there is a door leading to the yard and we reach the kitchen, No. 5, measuring 16 by 18 feet and containing a large oven and fire-place.

No. 6 is a large store-room, 8 by 9 feet, opening directly into the kitchen. No. 7, bed-room, 15 by 16 feet. No. 10 is another entry, 3 feet wide, leading to the yard. Here are stairs



GROUND PLAN.

an approximate cost of such an establishment, but so much depends upon locality, price of materials and transportation in our widely varied conditions of country, that to attempt an estimate that would apply to all places would be futile. The way would be to show the plan to an architect, tell him where you want the buildings to stand and you can easily arrive at about the probable cost,

also leading to the chambers and cellar. No. 11 is a scullery or wash-room, 8 feet square, with a chimney in the corner.

No. 12 is a tool-room and shop, 8 by 13 feet. No. 13, pantry, fitted up with sink and shelves. No. 14 is a dairy-room, 6 by 13 feet. From the work-shop a door opens into the wood-house, No. 15; this is 13 by 16 feet, and connects with the open carriage-shed, No.

16, which is thirteen by twenty-four feet.

The second floor contains six bed rooms, besides bathing room and closets. The attic may be left unfinished and used for storage.

Plan of Barn.

No. 17, passage leading to water-closet and to the covered portion of the pig-sty, No. 18; No. 19 is the yard connected. No. 20, hencoop 9x18 feet, fitted up with two rows of nests and openings upon the pen and stable-manure yard, No. 21.

No. 22 contains stables for three horses with feeding trough in front. No. 23 is a carriage shed and harness room 18 feet square. At No. 24 in the yard is a pump with horse trough attached.

The Cotton Fields of California.

The successes of earnest men during the last and present year, would seem to indicate that we have a large area in Stanislaus, Merced, Fresno, Tulare and Kern counties well adapted to cotton growing. We are every week making mention of superior samples sent us from two or more of the counties named; and still they come.

The Buckley Bros. in Merced county probably have the largest field of cotton in the State—250 acres. We do not speak of it as a large field of cotton, where cotton has long been a staple product; but here, where the business is but an experiment, and has always been considered an uncertain one, it may be mentioned as a large field.

One of the brothers called a few days since and we learn from him that they are daily expecting from the East a gin of 60 saws, capable of ginning 8 bales in 24 hours of from 400 to 450 pounds to the bale. The gin with a Duane Press, the latter made in San Francisco, will be set up, with one of Hoadley's 10-horse power steam engines, at Hopetown, Merced County.

The ginning commences with the picking of the cotton. Sixty Chinamen are employed at present, but after the first frost the force will be doubled. They pick from 80 to 85 pounds of cotton each, per day; are paid \$25 dollars a month and they board themselves.

The brothers connect the culture of hops with that of cotton; the picking of their 18 acres having closed just in time to commence on the cotton, making no break in the season of employment. Their hops have yielded 1,500 pounds per acre kiln dried.

The variety of cotton the present year is with them mostly the Dixon, and will yield 400 pounds or over per acre.

HONEY BEES are found widely distributed over the face of the earth. Prof. Kilau found them even at the most northerly promontory of Norway. In Greenland they are able to lay up stores for nine months of winter. In Switzerland the Pastor of Rauda has an apiary 4,160 feet above the sea. They occur in Asia and in a part of Africa. On the coast of Asia Minor apiaries are common and the Smyrna honey is highly prized. The bee was imported to America in 1675. The first mention of an apiary in the United States was that of George Pelton, of Virginia, in 1816. The *Melipona (Melipona scutellavis)* of Brazil is a honey bee with no sting, but with a sharp bite.

CATERPILLARS.—The ants are the greatest foes of the caterpillars. A farmer, whose crops were in danger of destruction from these pests, brought a sack-full of ants from the woods and dumped them in the field where the worms were at work. The next day not a caterpillar was to be seen.—*German Paper.*

CORRESPONDENCE.

Our Grain Interests.

EDITORS RURAL PRESS:—The question of most importance at present appears to be, how and by what means are our farmers to correct the evils from which they are suffering, and which for years have prevented their enjoying the benefits of their labor. The discussions upon grain hauling in the several county Clubs, by the State Farmers' Union, and press generally, prove that California farmers are waking from their Rip Van Winkle slumbers to a realization of their condition. I propose through your columns to offer a few practical suggestions bearing upon the point, which may benefit those who have not had the same experience. Our farmers are in the same condition as those living in the grain-producing districts of the Mississippi Valley, prior to the adoption by them of the system now advocated. The absolute necessity of a concert of action on the part of those desirous of effecting a change and securing the attendant benefits, is greater here, than it was where competition between buyers, carriers, and middle men, prevented the concentration of these interests in few hands, nothing but defeat in fact can result, without a united and persistent effort on the part of all interested; the object to be obtained is worthy of a trial, and should stimulate each and every sufferer with a determination of no longer submitting to conditions that weigh down all efforts of securing an independence or even a livelihood.

That our producers themselves are in fault for so long and tamely submitting to the taxation levied upon them is indisputable. Were they without intelligence, or ignorant of the manner of doing business where it has been systemized, an excuse could be offered.

As a class, however, they rank first in point of general knowledge, acquired by an experience resulting from their cosmopolitan character.

The Remedy.

My first suggestion, that every grain grower provide himself with means for his own storage; cheap granaries where, when the grain is threshed, it can be kept securely until he wishes to sell or obtain cash advances on it, when it can be drawn in tight wagon boxes, or sacked in seamless cotton bags (a set lasting for years) and taken to a railroad station, or landing, where it is received by an agent, (if sacked they are at once emptied and returned), who receipts therefor, holding or forwarding as directed.

Suggestion second. That all railroad stations, embarcaderos and landings which are the centres for large grain deliveries, elevators be built, capable of meeting the wants of the districts tributary; in them grain can be aggregated to any extent and safely held, free from the attacks of rats and mice and loss in a hundred and one ways resulting from sacking. With the system of rivers, inlets, bays and railroads of California, all tending to a common centre, where it is necessary for placing grain on the market and for exportation in large ships, there is no difficulty in providing the necessary room for storing in bulk all the grain the State is capable of producing.

The benefits of this manner of storing grain, I will at present simply touch upon. We will first consider the economy; the producer is not compelled to furnish sacks which cost him this year fully one tenth of what he receives for his grain, an outlay that the farmers will have paid this season exceeding two millions of dollars, for which they receive no return.

Second.—The security against losses in the amounts received and those delivered; the warehouse receipts being given for a specified number of cents or bushels, and delivering the same number when called upon, providing against no contingency except loss by fire (which can be covered by insurance).

Third.—The establishment after the harvest of each year of a standard which will regulate the grading of the several samples according to quality, condition, etc., at the time of receiving and storing. The grading is done by an authorized inspector, who may receive his appointment from the Governor, or a recognized board of trade having authority; the standard which is to govern the inspectors, is established by competent persons, is always to be seen at the produce exchange rooms, as well as at the several elevators, warehouses and offices of those desiring them for reference, etc., as graded, the grain going into store is put with like quality. The receipt given specifying the quantity and quality, at once determines the value recognized by buyers and sellers, leaving no chance for misunderstanding or dispute, as is often the case in selling by sample. It will be readily understood how business is simplified by a system of this kind, and how easily done compared to what it is at present with us.

A Precedent.

Not many years since the people of the North Western States were similarly situated with those of California, had been rendered almost bankrupt by pursuing the same course that we

are following. The elevator system has brought about a wondrous change in their affairs. This revolution was not effected without a hard struggle. The whole steamboat, barge, warehouse, truck and bag interests had to be overcome, as well as that of the commission merchant—who controlled by advances—to say nothing of combating the prejudices of time honored custom. Nevertheless, success, accompanied by prosperity has crowned their efforts. A thorough understanding of the *modus operandi* of business, as conducted under the system advocated, would satisfy our farmers of the necessity for its adoption, before they can expect to realize the benefits to which they are entitled by their labor, or they can occupy the independent position of their brother farmers at the East. Yours, G. C. PEARSON.

Vallejo, Oct. 8th, 1872.

Santa Barbara County.

EDS. PRESS:—My opportunities for a thorough examination of other portions of the Coast Range have been limited, therefore it is impossible to speak positively as to the character of the geological formation of other portions; but Santa Barbara County appears to me to offer one of the most interesting fields for geological research that has ever come under my observation. Spurs, like the range of which Point Conception is the termination, if one could obtain a birds-eye view of them, must appear like the small furrow compared to the master furrow, for the sandstone slabs are inclined at an angle of 30° to 60°, and attain an altitude of nearly 4,000 feet in some places in this county.

On the trail from Las Cruces through San Julian to the Purissima one passes through gorges that lay bare a variety of formations embracing most of the Mammalian Ages. The impression appears so general that sulphuretted hydrogen in some shape is quite important as a curative agent, and nearly every one calls attention to springs if they show any indications of mineral impregnation. It becomes natural to observe any peculiarity of the water; furthermore, after a sniff at the hot springs near town, any unusual aroma was attributed to springs, therefore our disappointment may be imagined when following our nose up a cañon in search of water, that appeared to be strongly impregnated, we found only carcasses of dead animals in the stream.

Grand Sheep Ranch.

The great sheep ranch of Hollister & Dibble extending from five miles east of the Gaviota Pass to the mouth of the Sta. Ynez River, a distance of thirty miles in length and in width varying from one to ten miles. In fact the survey looks on paper more like the saw of a saw fish with its sharp angles taking in the water of the gulches, ravines and cañons and leaving out the spurs of the hilly portions that are undesirable, thus enabling them to control as much land as they own without buying it.

Wool Values.

These sheep herds shear at one place a larger clip of wool than is shorn at any other known locality. The sheep being unusually good for so large flock, (60,000) averaging seven pounds each, the spring clip, or over 400,000 pounds of wool.

Now see what a difference in result, if this wool could be made to be worth as much as some of the finer wools that are produced from small flocks; instead of an average of 20 cents per pound, as is at present being realized. It is quite possible to have discriminating purchasers pay fifty cents for the finer grades. Eleven cents per pound, (late quotation) for wools, shows a rather demoralized condition of the wool market.

Another Large Ranch.

The ranch reaching from San Julian to the mouth of the Sta. Ynez is called "Lom Poco," say 12 miles in length and three in width, or 24,000 acres, a little bit out of the farm of these shepherds, for which they have been offered \$300,000, but declined it.

It would make comfortable homes for several thousand people, as the soil is unsurpassed, and the climate good. In standing upon an eminence overlooking the plain to the northward and westward from the old "Hacienda," have since learned that what was taken for simply the Hacienda, is in fact the original Mission of Purissima, a stretch of monte or woodland, ten miles long and one or two wide is visible interspersed with open parks and lagoons.

This beautiful vista was rendered yet more sylvan in its appearance by some deer that bounded out of a copse, and continued their gambols in plain view, while we gazed, reminding us forcibly of the halcyon days of the past and of the "happy hunting grounds."

The ruined buildings, the yet well preserved acequia, winding for miles along the edge of the plain, the old pear trees in the garden, gives one a touch of sadness that the peaceful Mission days of the Old Padres are no more, and that everything must now give way before the worship of the God of Gold! F. M. A.

Stanislaus Temperature and Rainfall.

EDITORS PRESS:—The following table gives the result of observations on temperature and rain on the "sand plains" of Stanislaus for nine months of the current year:

1872.	Average Temperature.			Highest Temp.	Lowest Temp.	Rain. Inches.
	A.M.	P.M.	M.O.			
January...	40.20	52.30	46.15	61	27	2.38
February...	44.68	59.11	49.69	67	34	2.42
March.....	46.16	63.60	50.40	70	38	1.45
April.....	48.21	66.40	50.80	77	36	0.87
May.....	56.45	73.39	58.65	84	40	0.00
June.....	64.57	86.86	65.25	90	52	0.18
July.....	68.23	92.48	71.15	104	61	0.00
August.....	69.68	91.72	71.55	110	59	0.04
September	63.59	88.23	69.57	101	43	sprinkl

Our summer and one month of autumn have passed, and it is seen in each of our four warmest months, the highest temperature observed was over 100. This extreme temperature, however, continued for only a few days each month.

In the main, our summer weather has been quite cool and pleasant. We have had unusually early indications of considerable surplus moisture in the air. This is shown by a heavy shower on the 30th of August, which extended generally throughout the State; by a light sprinkle September 17th; and by uncommonly heavy dews, and cloudy weather throughout August and September.

These indications, coupled with the facts of heavy rains in Arizona and other localities within the last two months, and confirmed by the growing belief that there is a remarkable

Periodical Succession of Seasons

In California, leaves scarcely a doubt on any reasoning mind, that we are to be favored with more rain the coming winter than we had the past.

Indeed, it confirms the prevailing belief that the winter of '72 and '73 is likely to be marked by our heaviest rains and freshets.

In passing, let us call attention to the fact, that the spring rains of the past year were light and not well distributed. By a careful examination of Dr. Logan's Rain-Table for Sacramento, this will be found true of each year which has immediately followed our driest seasons. But during the remaining wet years of each period, it will be observed that the Spring rains have been abundant and well distributed. Hence, reasoning from cause to effect, and from the usual regularity of the

Laws of Nature.

We may safely expect, that the Spring rains of the next three or four seasons will be so plentiful and well distributed as to bring us the most bountiful harvest.

Such a result promises us several seasons in succession of the highest degree of prosperity for every branch of industry in California, provided that the farmer is protected in his rights, and is so secured against the system of robbery of which he has been made a victim the past season, that he may secure the legitimate profits of his risk and labor in the culture of our soil. In vain will Providence favor us with abundant rains and good seasons, the farming interests of California, wonderful as is their promise, must

Languish and Die.

Unless the farmer is properly protected against the shipping fraud between San Francisco and Liverpool, which robs him of four hundred dollars of his hard earnings on every thousand bushels of wheat that he sells; against the sack ring which exacts twenty cents for each two-bushel sack in which he ships his grain; against the disposition of laborers to demand from three to four dollars a day for the common work of the harvest field; and against our ruinous rates of interest. Protect us against these wrongs, and what business is more profitable and pleasant than farming in our State; what man in the wide world would be more independent and comfortable than the California farmer. J. W. A. W.

Turlock, Oct. 9th, 1872.

Beautiful Santa Barbara.

EDITORS RURAL PRESS:—Referring to a communication of Sept. 23th, from Santa Barbara county, Mr. Williams' sheep rancho of two leagues was mentioned. In this vicinity, on the south of the road, from Las Cruces to Santa Ynez, the scenery deserves something more than the passing notice given at the time; and is among the most strikingly beautiful regions ever visited. The lofty crags in places take the shapes of turret, tower, castle, and buttress. Some complete, others in ruin, and all hang with the mantle of moss and ivy. Some appear as half buried in falling debris, in which the dark-green of live oak finds sustenance and over all hangs such an air of enchantment that one never wearies of feasting the delighted vision. F. M. A.

Wine—Its Baneful Effects.

EDITORS PRESS:—Your very valuable and interesting paper is read and appreciated far beyond the confines of the Golden State.

The welfare of California and the inhabitants thereof is very dear to my heart, and to all who exert their influence toward the mental, moral, or physical improvement of the country I give my warmest gratitude and sympathy.

I like the stand you take in regard to the wasteful system of cultivation practiced by the farmers of California, and your earnest endeavor to promote their interests in every way.

But, in such numbers of your paper as I have seen, I have found no mention of the immense production of wine and its effect upon the population of the State.

For the very reason that I love that fair land so dearly, I wish to see her stand in a high rank among her sister States, and that she can never do while two-thirds of the male population indulge in the habitual use of such fiery stimulants as are made and drunk there.

Effect on National Prosperity.

The history of the world proves that no country, where drinkers of alcoholic liquors are the rule and temperate men the exception, has ever taken a high rank in any respect.

Perhaps you doubt this. I should have done so once; but a long residence in California and several years sojourn in other parts of the Union has convinced me that in many things that constitute true prosperity, the State of my adoption is sadly wanting.

Circulating, as your paper does, among thousands of families, your influence must be very great, and if you have the true interests of the community at heart, and will take a decided stand in this matter, you will earn the gratitude of all true men.

Notwithstanding my strictures, believe me your sincere well-wisher, M. A.

Our correspondent does not give us his name, nor does he so much as name the place of his abode. We do not often notice such communications; we like to have men willing to subscribe to their opinions; yet we give the letter a place in the RURAL, not because the discussion of wine or whisky-drinking is strictly agricultural, but because we are willing that those who look upon wine production as a great evil should be heard.

We are not the apologists of wine or whisky making under any circumstances. We do not advocate the drinking or the manufacture of brandy from the grape. But what we do endeavor to instruct our farmers in, is the culture of wheat and barley, and hops, by the most scientific modes possible, that the largest yield at the least cost may be the result.

We then endeavor to find for the farmer the best market the world offers for his barley and wheat, and hops; but we never insist as one of the terms of sale that neither lager or whisky shall be made from them.

If we advocate the planting of vineyards and the growing of grapes, the profits of which have enriched peoples and countries in all ages, it is not because we approve of wine-making or wine-drinking, for we do not.

The grape-grower sells his grapes where he finds his best market, and the purchaser can make raisins, or wine, or brandy from them, as he pleases, or he may feed them to his pigs; as the grain buyer makes from his barley or wheat either whisky or bread as he pleases, or feeds the same to his animals.

We are the advocates of temperance; but we do not see why we may not advocate the growing of wheat and barley, and grapes—strictly agricultural crops—and such as in all ages have been sources of wealth and prosperity to the nations, even though the excess over what is needed for bread or raisins be converted to other uses.

APPARATUS FOR EXCAVATING BENEATH THE SURFACE OF WATER.—The completion of the great well—fifty feet in diameter—in Central Park, New York, presented an uncommon mechanical problem, and showed, by its solution, the advantages of scientific education. It became necessary to dig the well twelve feet below the source of the water supply. The question presented was to do this in a rapid and economical manner. The New York *Price Current* describes the process adopted:

The apparatus consisted of a strong iron cylinder, three and one-third feet high, and one and a third in diameter, made air-tight in its sides and top, but entirely open at the bottom; the edge at the bottom being made thin and sharp. The top was provided with two valves which could readily be opened or shut; also with a strong wooden stem six inches square and eight feet long, the whole attached to a proper hoisting apparatus. When this cylinder was lowered into the water, the valves were forced open and the air escaped; then by working the wooden stem back and forth, the cylinder settled of its own weight and filled with sand, when the valves were closed and the upward pressure of the water kept the sand from falling out as the load was raised to near the surface and there deposited on a platform, from which it was afterward removed by ordinary appliances. By this apparatus five cubic feet of sand were easily taken from the bottom of the well every two minutes.

SERICULTURE.

Silk Culture.

Hindrance to its Success in California.

It takes about 280 to 300 cocoons of the French annuals (450 to the smaller Syrian annuals or the Japanese Trivoltines) to weigh a pound, and it takes 2,800 good cocoons for 10 pounds, at an average, to make a pound of reeled silk that is equal to the French or Italian. A pound of reeled silk, of good fair quality, will bring about \$3.50; deduct from that \$2, to \$2.50 for reeling, and it will be found that a pound of cocoons cannot, at the very highest prices, be worth over 55 to 60 cents; and I doubt very much, if there was here a filature establishment where cocoons could find a home market, whether the price would be over fifty cents for good unperforated cocoons. The San Francisco Silk Manufacturing Company promised, a year ago, to buy all the cocoons raised on the whole Pacific coast, at a fair market price, but they do not buy any now, and so there is here no home market for our cocoons at all.

As cocoons are small, soft balls, and cannot bear pressing which would indent them and make them unfit for reeling, and as they will get chafed by transportation, if not carefully packed—and again, as they are very liable to draw moisture if closely confined for any length of time, when the inside chrysalis or grub will decay and spoil the whole package—they cannot, on that account, well be sent to any distant foreign market, to say nothing about the large bulk they would make. Cocoons must be reeled in the country where they are raised, as is the case in all silk-producing countries, and the quality and the price of the silk depends greatly on the expertness of the reeler.

Silk Values.

Raw silk (silk as it comes from the reel or is drawn from the cocoons by the help of the reel) from China, the inner provinces of Bengal, or from Turkey, is, in the English market, worth from \$4.50 to \$6, according to the fineness and evenness of the thread. The Italian and French raw silk is worth from \$8 to \$10; the difference in the price is caused by the more or less perfect reeling process. Reeling silk well, so that it is equal to the French and Italian silk, is a very nice art, and can only be learned from some one who is himself thoroughly acquainted with the process. It requires, then, practical experience and perseverance to become a good, expert reeler. It is wrong to tell people *any one* with the help of a little, cheap machine, can reel well.

In France a good, expert and experienced reeler (and the silk is mostly reeled by women), who reel about a pound of silk per day of the better quality, earns 50 sous; in upper Italy about 45 cents; in Naples 40 cents; but such a person would, for her skill and time, ask, in California, at least \$2 to \$2.50 per day, could such a one be found here at all. Boys and girls from 12 to fifteen years of age, get in France and Italy, for gathering mulberry leaves, 10 to 15 cents; and in Germany wages are only a trifle higher. In California a boy of that age would not hesitate to ask a man's full wages; even a Chinaman from the first of June to the end of August can hardly be got for less than \$1.25 and board, per day.

The Eastern States, in the years from 1834 to 1838, vied in bestowing high premiums on the planting of mulberry trees, on the rearing of silkworms, on the reeling of silk and sewing silk, and it seemed as though the Atlantic States would become one vast silk-producing country. But as the State premiums ceased by limitation, so the whole silk-raising business fell gradually off till now it is of but little account.

It is undeniable that the climate of California gives us many advantages over silk-producing districts of Europe. But wages are here so high that we cannot be a silk-raising people like the French or the Italians until the population becomes much more dense, more compact than at present, or some very radical changes in the hire of labor take place.—*Cal. Agriculturalist*.

THE SILK INTEREST.—It is stated that Silk Works are to be erected soon, at some suitable point in this State, for which the needed machinery will be imported from the Eastern States and Europe. The mills, when completed will have cost \$1,000,000. Broad silks, velvets and ribbons, in every variety of pattern and design, will be woven. The general agent of the enterprise is a gentleman of well-known energy, who has been engaged in other industrial and manufacturing ventures on this coast. Details of the projected movement will soon be given.—*Chronicle*.

The Silk Crop of 1872.

We would like to hear from the silk growers in different parts of the State, as regards this year's success in silk growing. So many have declared our climate superior to any other for the growth of the silkworm that we are anxiously awaiting satisfactory results.

We already hear that in France the crop of cocoons is greatly superior, in quantity and quality, to that of last year; that in Italy it is a full average; that in Connecticut, Ohio, and

New Jersey, the worms were this year, as they invariably are, entirely healthy and the silk of superior quality.

Now in France, Germany, and our own Atlantic States, they have recurring showers of rain all through the feeding season, that not only wash the leaves of the mulberry of all dust and atmospheric infusoria, but give to the leaves a consistency not acquired in an atmosphere like ours which possesses little else than a rapidly drying quality, that serves to harden and make crisp the food of silkworms before they have time to consume it.

That the feeding of silkworms can be made a success, among the lower mountains of our State, we have not a doubt, so far as the health of the worms is concerned, and a fair quality of silk result; but when we hear of any profit resulting from it as an established industry, at all equal to the same amount of land devoted to, and labor bestowed upon raisin, almond or prune culture, in which no such delicate animal life as that of the silkworm must be cared for, then will we be glad to record the fact, and endorse our climate as the best in the world for silk growing.

MISCELLANEOUS.

Climatic Changes on the Earth.

At the last meeting of the California Academy of Sciences Professor Geo. Davidsohn, President of the Academy, read an interesting paper entitled "Suggestive of a Cosmical Cause for the Great Climatic Changes upon the Earth." The paper had previously been submitted to Professor Agassiz who considered it a new idea and worthy of promulgation. It read as follows:

Disliking theories and hypothesis, I must characterize as a suggestion what I have to state upon this subject. So far as I am aware, geologists have failed to indicate any reasonable or rational cause for the sub-tropical fossil flora and fauna found within the Arctic circle, and for the great ice sheet—the universal glacier—which doubtless covered nearly the whole land from the poles toward the tropics at a comparatively recent period. To mention is to condemn the extravagant hypothesis of the changing of the direction of the earth's axis, as it involves changes necessarily of greater amount than the motion of a boy's top. Partial upheavals and great changes of the surface of the earth are insufficient to account for the phenomena.

The paleontologist has roughly indicated by his zones of fossil flora, and fossil fauna, that the pole of the earth has not changed its direction, and the astronomer utterly rejects such a change. My suggestion is that we must look to a cosmical cause for these phenomena, and that cause is in the material or materials burning upon the surface of the sun.

The spectroscope has made known to us the connection between sudden outbursts of storms upon the sun's surface, and the exhibition of magnetic phenomena. This instrument has revealed to us a sun wherein a sudden outburst of luminous hydrogen, has increased the brilliancy of a star from the ninth to the second magnitude, and its comparative slow return to its former condition.

It appears to me that herein we strike the key-note of the causes at work to solve our problem of short or long periods of varying climate upon the earth. If the above phenomenon is possible in one sun, it is possible in every one of the millions of millions of suns around us, and of course in ours. That such an eruption of burning hydrogen affected the planets revolving around that sun we cannot for one instant doubt. To our instruments it was an exhibition of force lasting but a few months, and its effect upon probable planets around that sun we can never know. Doubtless all new stars that have suddenly appeared with great brilliancy were the exhibitions of similar forces. If such forces are possible for short periods, they are possible, and to my mind, more probable for comparatively long periods.

In our sun the forces are evolved in irregular and also in moderately regular periods or cycles; and must have an influence upon the general climate of the earth and of the other planets. Even in this year of exceptional heat over the earth, we have the result of the spectroscope revealing an unusual development of incandescent magnesium over the sun's surface. If these forces of the sun exhibit themselves in short and long periods, we can comprehend how periods of almost universal flood, of earthquake and volcanic action, of a climate to develop sub-tropical fauna and flora, even within the Arctic circle; if a great ice sheet spreading from each pole over the land toward and even embracing the equator, may be not only probable, but place the two latter in full accord with the astronomical dictum that no violent change of the direction of the earth's axis is admissible. The spectroscope is the present means of gathering observations to

test my suggestions, or to develop a law underlying these changes; and as we observe the exhibitions of the forces upon the surface of our sun, and note the effects upon the earth, we can also watch the changes upon Mars and the other near planets. But we cannot hope to determine the law of connection within a short time, unless some wonderful event happened in our sun similar to the sudden outburst of luminous hydrogen in the star in the Northern Crown, to show us in an hour the effect that such great cosmical changes have upon the earth and other planets of our system; or unless other instrumental means, far beyond the capacity of the spectroscope, be devised to show minute connections between changes on the sun's surface and limited periods of earth phenomena, such as years of great heat, and earthquake and volcanic activity, perhaps even years of pestilence, a long cycle of years may be required to demonstrate whether a law lies at the base of my suggestions.

Like the observers who make their measures to determine the gradual elevation or subsidence of continental shores, we may not learn the result, but we can aggregate observations for discussion by the next generation.

Boring for Science.

It seems that the bore hole which is to be put down in England, is not so much for the sake of discovering coal as to ascertain what the lower formations really are. The project is due to Mr. Willett, and he was incited to the proposal by thinking of some fitting method of greeting the British Association on its visit to Brighton. The happy thought struck him that scientific men could not be better met than by a scientific work. Upon inquiry he found that that not one single experiment for purely scientific purposes in the Southeast of England had ever been made. He therefore considered himself fortunate in having hit upon a problem yet unsolved. He pronounced the purpose of the work to be "To ascertain (by actual experiment of a boring) the nature and thickness of the geological strata lying immediately beneath the lowest series of the Wealden formation in Kent and Sussex (known as the Ashburnham beds). Thereby to put an end to the difference of opinion among scientific men on the subject, who may otherwise continue to form adverse speculations for another century. Subordinately, to ascertain whether carboniferous strata (as in Belgium and the Boulonnais district in France) extend across the channel in this direction. To endeavor to reach Paleozoic rocks, if such exist within 2,000 feet of the surface, and to ascertain the temperatures of the rocks (successively reached), by the methods and instruments recommended by the British Association Committee on Subterranean Temperatures." The bore hole will be nine inches in diameter, and the estimates of the depth to be sunk are max. 1,350 feet; min. 730 feet. The site is at the Councilors Wood, in the county of Sussex.—*Eng. and Min. Jour.*

Has Our Climate Changed.

Under the above heading a writer in the *Popular Science Monthly* gives conclusive arguments in the negative. From the averages of observations made at Boston, New York, Philadelphia and Charleston it would seem that, so far from changing, the averages of each decade for the last one hundred years have been strikingly near equivalence. We constantly meet with statements in the press of the country made by *pseudo-savants* to the effect that our climate is becoming more extreme and the rainfall less. So frequent have been these assertions that most intelligent persons whose means of arriving at the figures in the case are limited, have had no doubt of the truth of these assertions. Yet, if the data cited by this writer are correct, there would seem to be no shadow of basis in the truth of either assertion. What a study of the meteorological variations of the climate extending over several hundred years would show there is no knowing, but it is fair to suppose that there has been no great change. That there are cycles of climatic phenomena is undoubted, but their recurrence is marked by no great change in the averages, such as should lead us to believe that our climate is becoming more extreme. As far as imperfect observations go, it would seem that there have been no considerable changes in the climate of any country within the last thousand years.

TO CUT AND BORE INDIA RUBBER STOPPERS.—Dip the knife, or cork borer, in solution of caustic potash or soda. The strength is of very little consequence, but it should not be weaker than the ordinary reagent solution. Alcohol is generally recommended, and it works well until it evaporates, which is generally long before the cork is cut or bored through, and more has to be applied; water acts just as well as alcohol, and lasts longer. When, however, a tolerably sharp knife is moistened with soda lye, it goes through India rubber quite as easily as through common cork; and the same may be said of a cork borer, of whatever size. I have frequently bored inch holes in large caoutchouc stoppers, perfectly smooth and cylindrical, by this method. In order to finish the hole without the usual contraction of its diameter, the stopper should be held firmly against a flat surface of common cork till the borer passes into the latter.—*W. Donkin, in Chemical News*.

A TRUE AND REAL SCIENTIST.—The illustrious chemist, Scheele, of Sweden, lived and died an humble apothecary, in the little town of Koping. Although he died at the age of forty-three, his career as an investigator is unequalled in brilliancy, especially considering the fact that he had only the simplest apparatus and vessels that he could contrive and make for himself. He examined the question of changing water into earth, discovered oxygen and nitrogen in the air, chlorine, manganese, barytes, tungsten, molybdenum, prussic acid, hydrofluoric acid, glycerine, and citric, tartaric, oxalic, malic, tannic, uric, and lactic acids.

When the King of Sweden visited Paris, Lavoisier and all the learned men inquired about Scheele, but the King had never heard of him. He wrote home at once and ordered his ministers to look him up. The only Scheele who could be found was a clerk in one of the government offices, so he was knighted and pensioned. But when the king returned the real Scheele was found, and offered every inducement to take up his residence in Stockholm, but he preferred his shop in Koping, and lived and died in his little laboratory. *Prof. Chandler*.

HIGH PUMPING.—We are informed of some tall pumping at Triumph, Penn., where the water has to be lifted from the Alleghany river to the summit of Triumph Hill, a vertical height of six hundred and eighty-five feet, or more than twice as high as Trinity church steeple. The horizontal distance is two and three-quarter miles. The pressure per square inch in the water cylinders of the steam pumps is seven hundred pounds. Three pumps are used, each lifting two hundred thousand gallons every twenty-four hours. This water is designed for supplying the boilers of the steam engines used at the oil wells in the vicinity. The steam pumps have a piston stroke of eighteen inches; the diameters of the steam and water cylinders are respectively twenty inches, and six and one half inches. The pressure above mentioned in the water cylinder is notable as closely approaching that ordinarily employed in the cylinders of hydraulic presses.—*Am. Artisan*.

THE GREENLAND METEORITES.—Professor Nordenskjöld has communicated to the Geological Society a paper on the remarkable masses of meteoric iron from Greenland, discovered in 1870 at Ovivak, and brought home last year by the Swedish expedition under Baron von Otter. They are the chief masses of an enormous meteoric fall which probably occurred during the miocene period, and extended over an area of two hundred English miles, embracing not only that region occupied by the Greenland basalt, but a country composed of granite-gneiss.

Within an area of at most fifty square meters were found sixteen meteorites, the weights of which, in Swedish pounds, are as follows: 50,000, 20,000, 9,000, 336, 230, 200, 191, 150, 150, 100, 56, 42, 15, 8, and 6. The three largest have the following diameters respectively: 2 by 1.7 meters, 1.3 by 1.27 meters, and 1.15 by 0.85 meters. Nearly 100 pounds of lenticular shaped fragments of iron, from three to four inches in thickness, were also taken out of the basaltic dyke close to them. All the masses contain nickel and carbon.

A NEW THEODOLITE.—An engineer of Syria, Haddan by name, has constructed a theodolite on a new system. With this instrument angles are said to be measured with hitherto unattainable accuracy. The telescope is made to revolve with great regularity around a vertical axis, making a revolution in a certain accurately determined time. The angle is measured by the time occupied by the telescope in making this angle. Where the greatest accuracy is requisite, the telescope revolves once in twelve hours. Evidently Mr. Haddan takes heed of the proverb that "haste makes waste."

HIGHTS IN COLORADO.—From Prof. Thomas' list of elevations we find that Colorado has six mountains with summits over 14,000 feet above the level of the sea. These six are:

Mount Howard.....	14 270 feet.
Pike's Peak.....	14 216 "
Gray's Peak.....	14 145 "
Mount Lincoln.....	14 123 "
Mount Yale.....	14 078 "
Long's Peak.....	14 056 "

Colorado might be said to be a "high old place," if people were in the habit of using such slang phrases.

THE SIGNAL BUREAU AND STORMS.—The great storm that swept over the lakes on the 28th and 29th of September afforded another proof of the utility of the signal bureau. Its approach was announced in the morning "Probabilities" of the 28th, and on the afternoon of that date the danger became so apparent that cautionary signals were ordered out at Buffalo, Chicago, Cleveland, Detroit, Grand Haven, Milwaukee, Toledo, Oswego and Rochester hours before the storm reached either of these places.

THE AVAILABILITY OF CORN COBS AS A SOURCE OF SUPPLY FOR POTASH, has been suggested. It is estimated that nearly 52,000 tons of carbonate or potassa may be annually obtained from this source, to say nothing of a considerable quantity of chloride of potassium.

FARMERS IN COUNCIL

San Jose Farmers Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The Club met on Saturday, October 12, President Casey, presiding. W. W. Kennedy, was elected Secretary, pro. tem.

The question adopted for discussion at the next meeting is: "Resolved, That it is for the best interests of the farming community, that the Government should grant Goat Island to the Central Pacific Railroad Company."

By request the Secretary read the Constitution of the California Farmers' Union.

Mr. Garrigus hardly knew what to say—he believed in the united action of all Farmers' Clubs on important questions, but then he don't like to associate with such men as form the State Agricultural Society. They are a horse-racing, gambling, drinking and wine growing set of men; that he preferred keeping away from their influence, which is contaminating; and then he is sorry that Mr. Hoag is elected Secretary. He fears to have such men have anything to do with it. They will work and manipulate the organization to their own interests, and to say the least of it, they are not in sympathy with the farming community. On motion the matter was laid over for another week.

The Club next proceeded to discuss the following: "Resolved, That every enactment framed by the Legislature should be submitted to the people for ratification before it becomes a law?"

Mr. Burgland said, formerly the laws were made by a favored few—the people having no say, and we have inherited the same system in a milder form; we claim the right to elect our law-makers, but when elected they are as despotic as formerly, making what laws they please without consulting the people, which is all wrong.

Mr. Hobson thought submitting to the people too complex. We should select the best men to make our laws, then they will be ahead of anything the great mass could do acting as a whole.

Mr. Dubois thinks we have got into a subject beyond our depth. Our judges and learned men can hardly tell what a law is till it goes before the Supreme Court. A man broke into his house a short time ago and stole his goods, and hid them under a bridge, and he arrested the man in the act of trying to get them from under the bridge; the man was let go through some defect in the law. If our law-makers can't do better we want a change, set somebody else at it—set a Chinaman at it, anything for an improvement.

Mr. Garrigus said two men stole some wheat from him several years ago—almost enough to make grand larceny. The first man he had arrested wanted to compromise, offered him a fine yoke of oxen. The Judge advised him to settle, but he would not because it was contrary to law. The trial went on and the thief was fined \$12. He afterwards caught the other man and took him before another Justice in the same town, who fined him \$400. So we see the law was good enough, all it needed was a good man to execute it. What we want now is to see that we elect good men to make and execute the law.

Mr. J. F. Holloway said that whenever any advance or improvement is proposed, there is some one to cry out "O, the trouble is too great." Let anyone go to Sacramento and take a good look at

The Legislature

Himself, and his opinion of that body will be greatly lowered. He will find they are of no more than ordinary intelligence, and perhaps not of average integrity. There are far too many laws made. If they had to be submitted to the people it would thin them out, and make the law-makers more careful what they do. He did not believe a man should be compelled to go into Court against his will, but should have the right to demand an arbitration. We should have a Referee law.

Mr. Dubois thinks that the people are at fault; when a Judge is elected he has to look out for re-election, and if he rigidly and justly enforces the laws, he will lose votes and that won't do. The moral sentiments of the masses won't admit of the laws being rigidly enforced.

Mr. Haskell thinks that the representative system is the best, for our law-makers are a little ahead of the general average both in intelligence and in integrity, but thinks we better let such questions alone and stick to the subject of farming.

Mr. York considers the question quite appropriate. We don't think enough on the subject to be able to express ourselves clearly. It would be well to study the laws of nature and follow them more closely.

God's Laws

Are few and simple but rigidly enforced. Government is too complex and costs too much. We don't think enough; we are too apt to turn the care of our bodies over to the doctors, and neglect the study and practice of the laws of hygiene, and we turn our souls over to the care of priests instead of learning to do right, and on the same principle we turn the government and law making power over to the politicians. A people to maintain their liberties must study all such things for themselves. Government

should be simplified and the amount of laws cut down, made more in accordance with natural laws—God's laws.

Mr. Cadwell considers it clear that something is out of fix, judging from the actions of the late Legislatures. They spent their time in making local laws for every little town in the State, instead of enacting and simplifying our general laws—the work that they should confine themselves to, and leave each place to make its own local arrangements. It is oppressive to make special laws binding on localities, and we should not stand it.

Dr. Lucky thinks that if the people fail so badly in selecting their law-makers, they would be as likely to fail in making laws. Perhaps it might be well to require all enactments to pass two Legislatures before becoming laws, and all local laws should be left to local bodies, boards of Supervisors, etc. The great trouble is that the people, as well as the law-makers, consider that they must blindly follow their party—and almost everything is considered as a party measure, the only question being asked is, how will it affect our party at the next election?

Halloway, Jr., thinks that legislative bodies have become so corrupt that the people should have the power to repudiate their doings by vote.

Mr. Hobson thinks the people could be so manipulated as to get them to vote for anything, even the "Santa Clara Avenue" bill. The great trouble is that good men think they must not dabble in politics, and tricksters have it all their own way. The laws could not be studied sufficiently for the people to vote intelligently on them.

Mr. J. F. Holloway don't like to hear the people abused or called any hard names, for it is to the votes of the people that we owe what little liberty we have, and if we would leave more to the vote of the people we would not be so nearly oppressed to death. Adjourned.

Santa Cruz Farmers' Club.

Second Annual Exhibition.

The Second annual exhibition of the Santa Cruz Farmers' Club was opened on Thursday evening last and closed on Saturday evening. The large hall recently occupied as a skating rink, was tastily fitted up for the occasion, and well filled with the products of the farm, vineyard and shop. The ladies also contributed liberally of their handiwork, and by their presence and the interest they manifested contributed largely to the success of the enterprise.

Notwithstanding the fullness of the exhibition, we were somewhat surprised that most of the large manufacturing establishments in this important manufacturing center failed to put in an appearance. Not a roll of leather of any kind was to be seen, no powder, not a ream of paper or specimen of lumber, but a single sack of flour and only one specimen of a few pounds of lime, were exhibited. Although the exhibition was got up under the auspices of the Farmers' Club, it was open to all—whether farmers, manufacturers or traders. The exhibition, on the whole, however, was highly creditable. With the exercise of a proper interest, Santa Cruz might, and another year doubtless will, excel any other agricultural town on the Pacific coast, except Sacramento, in the exhibition of its agricultural and other resources.

The Literary Exercises

Connected with the exhibition consisted of an address on Friday evening, by W. B. Ewer, of the RURAL PRESS, on "Intelligent Agriculture," one at 2 P. M., on Saturday, by H. N. Bolander, State School Superintendent, on "Practical Education," and another on Saturday evening by Prof. Ezra S. Carr, of the State University, on "The Importance of a More Thorough System of Agriculture in California."

The hall was well filled each evening, and especially so during the day time on Saturday, and the exhibition was a financial as well as a general success. No premiums were offered, hence it could not be called a competitive exhibition. It was a sort of general love feast, in which everybody was on good terms with themselves and with everybody else. The officers and members of the club were everywhere and at all times present to attend to the slightest wants which might become apparent, and everything went off most pleasantly and harmoniously.

Near the entrance of the hall was displayed a very appropriate device, beautifully arranged with various seeds, and from the surface of which might be read "Santa Cruz Farmers' Club." This tasteful piece of work was wrought and presented to the club by Mrs. Hanaon Poland.

The Floral Display,

Was very fine. Mr. B. Cahoon contributed an elegant central floral pyramid, made up of flowers and evergreens, which reached from the floor to the ceiling. Mrs. A. R. Messerve also made a fine and tastily arranged floral display. The hall throughout, in fact, was trimmed and ornamented with evergreens and flowers, which were interwrought and entwined with the products of the farm, the vineyard, the shop and

all the various descriptions of fancy work and works of art, with which the room was filled.

The Products of the Vineyard

Occupied a very conspicuous and important position. Mr. G. M. Jarvis, from his vineyard at Vine Hill, on the southwestern slope of the Santa Cruz Mountains, exhibited seven varieties of table grapes and as many more of wine grapes; also samples of wine made from each of the latter.

Mr. D. L. Feeley, whose vineyard is located just beyond that of Mr. Jarvis, on the Santa Clara slope, also made a fine exhibition of both table and wine grapes, with samples of wines from the latter.

Say Brothers made a very full exhibition from their vineyard at Vine Hill. We noticed upon their table 17 different varieties.

Mr. Joseph Francis made a fine exhibition of Mission grapes from his vineyard, directly upon the Coast, about one mile from town, thus demonstrating the possibility of growing grapes almost or quite within reach of the salt spray from the ocean.

Mr. R. Barns also exhibited several varieties. There are some important peculiarities connected with the growing of grapes at each of the vineyards which we have noticed, of which we shall speak more fully after having visited and made a personal examination of the same, which we propose to do the coming week.

The Exhibition of Apples, Pears, Etc.,

Though excellent in quality, was hardly up to what might have been expected in quantity and variety. Mr. J. Doyle exhibited Summer Queens and Alexandria; John Mattison and Rev. J. H. Storey, Gloria Mundi, etc.; L. Polard, bell-flowers; H. Winkle, of Sequel, Frederick Boren, H. M. Blackburn, Mrs. A. Baldwin, R. W. Wicklin, U. W. Thompson and Mr. — Humphrey also made exhibitions, greater or less in variety and quantity.

We noticed but one exhibition of figs, and that by Mrs. H. Gushee. W. F. Cooper and U. W. Thompson exhibited plums; Mr. Hunter some wild plums, and Mrs. Williams, English walnuts.

Among the Vegetables

We noticed a squash, shown by W. H. Mason, weighing 133 lbs., and one by George Dyer, 137½ lbs. Yellow Dent corn, in the stalk, was shown by Mr. Staples, 13½ ft. high; the same was also shown by B. Cahoon, George Dyer and John Morgan, of about the same height. D. Cooke showed a drum-head cabbage, weighing 37 lbs., also flat turnips, 7 lbs. Onions were shown by Joseph Sylvia, weighing 3 lbs. each. We noticed but two small lots of sweet potatoes, and no Irish. Some very large beets were exhibited, weight not stated.

Miscellany.

The only butter exhibited was 5 rolls by Joseph Francis. Dr. C. L. Anderson contributed a very fine collection of entomological specimens. A fine case of millinery goods by Misses Healy and a case of china and glassware by G. Bowman. Three styles of washing machines were shown—the "Wonder," by J. S. Ord; the Solary Washer, by G. Bowman and a machine by W. A. Wood. Several parlor organs were exhibited by A. J. Hind & Co., and a knitting machine by Mrs. Von Volkenberg. The usual variety of sewing machines were also at work. John Warner exhibited a set of harness, saddle, blankets, etc., O. A. Longley some very fine samples of graining.

The Stock,

Of which their should have been a full exhibition, was confined to a full-blooded Durham bull, 18 months old, from the Howard stock of San Mateo; also one graded Alderney heifer, exhibited by J. S. Matteson. One cow and calf shown by Mr. Pierce; one mare 3 years old, shown by T. Pilkington; one sorrel colt 4 months, sired by the celebrated trotting horse "Index," shown by a Fletcher; one sorrel colt, 3 years old by J. Ruffin and a Cashmere goat, by Frederick Swanton.

The Show of Poultry

Consisted of some Bantams, exhibited by Joseph Flint and a trio of splendid dark Brahmas shown by J. H. Binney.

San Joaquin Farmers' Club.

The Club should have met to-day, Saturday Oct. 12th, but only one or two members were present and no quorum could be obtained, although quite a number of members are in town, and on the streets. If the farmers expect to reap any benefit at all from the club, they must take more interest in its meetings than they have done of late. In other counties the good results arising from the meeting of the farmers and the discussion of matters relating to their interests is being felt and appreciated by the farming community. The farmers comprise the largest, wealthiest and most intelligent portion of our population, upon whose efforts the prosperity of the State devolves, and it is singular that they of all other classes fail to keep up an organization when there is hardly another class or trade but have healthy and beneficial leagues or organizations for mutual benefit or protection. We hope that the farmers in this vicinity will hereafter look more to their interest and not let the club languish for want of support. The farmers are now complaining of the abuse and oppressions they suffer from the hands of capitalists, railroads, and other transporting companies; angrily the farmers cannot cope against the weakest of their oppressors, but combined and by acting in unison and harmony, they can rule not only their own affairs but the destinies of the State.—*Republican*.

AGRICULTURAL NOTES.

CONTRA COSTA.

Gazette, Oct. 12: FINE FRUIT SAMPLES.—Dr. Strentzel has forwarded this week, one fine assortment of the "Alhambra" orchard and vineyard fruits for the approaching Pomological Exhibition at Philadelphia, and another lot for the Exhibition in the city of Belfast, Ireland.

THE FARMERS' UNION.—However much or little reason there may be in the current complaints that farmers are the victims of ring combinations to depress the produce market and control tonnage, there is every motive to induce farmers to unite in a cooperative effort for mutual aid and protection; and if the recently organized State Farmers' Union is efficiently supported there can be no doubt that it will accomplish much in bettering the situation of the agricultural classes of this State. The Union has a Board of Directors upon which are some of the most intelligent, discreet and responsible citizens, and they are not likely to be content to remain the mere figure-heads of an organization if they are actively encouraged to undertake plans for furnishing farmers of the State with cheaper and better facilities for conducting their operations and disposing of their produce. Representing the organized farming and small land-holding interests of the State, this Board will correspond with capitalists and produce factors abroad, and be able to obtain information of the condition of crops, markets, tonnage supplies, and even obtain money advances for crop requirements, at the lowest rates of interest current abroad, upon such securities as they will be able to offer. Without the earnest co-operation and support of the farming interest at large, however, this Board of Directors can accomplish nothing beneficial; and they propose shortly to issue an address for information of the farming classes, and asking their co-operation with the objects of the Union.

KERN.

Courier, Oct. 12: The Cotton Growers' Association announce that they intend to extend all the encouragement in their power to those of our farmers who are disposed to engage in the culture of cotton. They will furnish seed to all who desire it, and the use of their gin, free of charge, to all who have no facilities of their own for preparing their cotton for market. Their ginhouse will be erected near the Kern River Flouring mill, and the gin will run by water power. They are satisfied, from their own experiments, that cotton can be grown as successfully here as in the most favored of the cotton States, and they hope farmers, in laying out their programmes for the coming year, will bear in mind the superior pecuniary results of a cotton crop over one of wheat or any other of the ordinary articles of farm product.

MARIN.

Journal, October 12: SAN RAFAEL.—How "beautiful for situation" is this little spot. Leaving the dust and smoke and winds of the city, the sea is rough and choppy until you make the lee of Angel Island, when a summer quiet and balm prevail. Passing Raccoon straits you get a sniff of Boreas' breath, pure as the air of mid ocean; and thence are sheltered by the main land, a delightful sail, till the boat swings gracefully around and makes fast at her berth at Point St. Quentin. This is about forty-five minutes from the foot of Vallejo street, San Francisco, and the traveler has a sort of quiet consciousness that each of those minutes has been a pleasant one and has perceptibly increased the comfort of his surroundings.

San Rafael is built in a charming little nook formed by the convergence of high lands on three sides, the front outlook commanding a beautiful sea view. High hills rise abruptly behind the town, and on either side, sheltering it from the elements, and seeming to invite people of wealth and refinement to come here and build their homes. Elegant residences occupy the gentle slopes below the sharper elevations, while here and there on either side of the town, ornamented gables, or turrets, or chimneys, jut out from sequestered depressions and reveal the homes of families of taste and culture whose heads carry on business at the metropolis, and all of whom will perhaps spend three or four of the winter months there. We shall often recur to this and kindred themes in these columns hereafter.

MONTEREY.

Argus, Oct. 12: HOPS.—Thursday last we noticed a wagon passing by our office to the landing heavily laden with hops. Upon inquiry, we found they were from the famous hop yards of Mr. Jas. Houston, near Natividad. Mr. Houston's hops always command the best price in the market, and he is very successful in their cultivation.

No one desiring to settle in this valley, can possibly do better than to locate in Castorville, as she offers inducement to the immigrant that no other town in the country can truthfully present. Her prospects for the future are growing brighter every day, and property a year hence cannot fail of being worth double what it is now; and we feel assured that whoever casts his lot in our midst will find he has made a profitable investment. From her position she is pre-eminently the queen of the Salinas Plains. The lands surrounding the town on every side are the best portions of the Salinas Valley, and admirably suited both for crop-raising and dairy purposes. Wood of the best quality and in abundance is easy of ac-

cess, and sells at reasonable prices. The water is excellent and obtainable at not over a depth of fifteen feet. The climate is pure healthy and very equable. The railroad and excellent landing remove from the farmers of this section all danger of having to pay heavy freight bills on their grain hereafter, by creating a competition that will undoubtedly be lasting.

PLACER.

Herald, Oct. 12: AGRICULTURE IN PLACER.—Aside from the admirable farming district in the western part of this county, it is gratifying to notice that in the last few years thousands of acres of the foothills have been reduced to remunerative cultivation. From the time you begin to ascend the rolling hills at the western base of the Sierras, for some miles toward the summit, orchards, vineyards, gardens and hay-fields, all in thriving condition, now greet the eye on all sides. A few years ago the vine and fruit culture in the mountains, was comparatively an experiment. The experiment proved a success to such an extent as to leave no doubt but what the foothills of the Sierra Nevada mountains, on the western slope, are as well adapted to the cultivation of vines and fruit trees as are the hills and valleys of the far famed Italy or Southern France. This year the yield of berries, cherries, vegetables, and indeed all kinds of fruits, in Placer county has been immense, and a ready and profitable market has been found for all her products in this line; indeed, the demand, especially for early fruits, has rather exceeded the supply. The grape crop, which is just now being gathered and manufactured into wine or shipped below, is also abundant, and in quality is probably not surpassed in the world.

SAN BERNARDINO.

Guardian, Oct. 5: WATER.—The principal hindrance to settlement in this valley is the want of water for irrigation. There is no end to rich land, which none care to buy or take up, because of inability of obtaining for it this necessary element. Now, to any one that has examined it, it is clearly evident more than enough water pours from the mountains into the San Bernardino Valley than would abundantly irrigate the whole region between the Lytle creek mesa and the Yucaipa divide, and between Agua Mansa and the foot of the mountains on the north. What, then, should be done for settling up and utilizing this extensive waste of idle lands? The answer is ready: Economise the water that goes to waste.

SANTA CLARA COUNTY.

Gilroy Advocate, Oct. 12: WHEAT.—Immense quantities of wheat are daily arriving in Gilroy. Alex. Hay & Co.'s mill and the railroad depot filled almost to overflowing, while the cars daily transport hundreds of tons to San Francisco.

CALIFORNIA COTTON.—Mr. A. W. Hubbard, of this city, brought to our office, one day this week, a specimen of California cotton, grown on Mr. Chesterfield's ranch, near Bakerfield, in Kern county, whither he has been on official business, that for fineness of quality equals that grown on the South Sea Islands—so we were informed by a Southern gentleman conversant with every kind of cotton. The prospects are fair for cotton growing to become a very important interest in California. The *Merced Tribune* of October says: "The cotton crop of Merced the present year bids fair to be large, taking into consideration the number of acres seeded. Competent judges estimate the yield at not less than 500 bales, or 500,000 pounds.

SONOMA.

R. R. Flag, Oct. 10: FIRE IN THE WOODS.—A fire has been raging near Joy's Mill, near Freestone, for several days past, destroying immense quantities of timber, fencing and other property. Wiley Frazier, of Bodega, informs us that on last Saturday night Joy's Mill was in danger and a number of men were compelled to fight fire all night to save the property. Some days since the fire burned over Mrs. Finley's ranch, two miles from Freestone, consuming fences and other property. At last accounts the fire was still raging.

ANGORA GOATS.—Charles Alexander bought two thoroughbred Angora goats at the State Fair and last week brought them to his ranch in Alexander Valley. He already had a large flock of graded goats, and these two additions, for which he paid \$200 each, will still further improve the quality and value of his flock.

FINE SHEEP.—Fine grades of cattle, sheep and horses are now attracting the attention of farmers, and Mendocino county proposes to keep pace with the balance of the State. One day last week, Hon. Robt. McFarvey, of Ukiah, passed up with a full-blooded Merino buck, for which he paid in San Francisco upwards of \$200.

Flag, Oct. 10: WOOL GROWERS' FAILURE.—We learn from persons who were present at the Wool Growers' Meeting held at Cloverdale last Thursday, that they failed to agree upon a plan of operations and hence adjourned *sine die* without effecting a permanent organization. Several speakers asserted it to be a well-known fact that the wool produced in Sonoma, Mendocino and Lake counties, is of a finer fiber and better grade than is raised in any other part of the State. Among those present we note the names of Willis Faught, Wm. Hill, E. Dennan, Thos. Schlosser, H. Stanley, F. McElarney, Wm. Ford, M. Sullivan, H. Mechem, Willis Caldwell, T. Mann, H. Caldwell, C. Bratt, E. Duncan and W. English. We learn that the wool growers in the lower portion of the county propose to organize and establish their headquarters at Petaluma.

YUBA.

Appeal, Oct. 10: WHEAT OVERLAND.—Marcus & Co., who have an order to forward by railroad to Boston one thousand tons of wheat, made their first shipment yesterday of fifty tons. The arrangement with the Railroad Company is that five cars shall go forward daily from the Marysville station. Eleven loaded cars were sent over from Yuba City yesterday, and there are five cars at the station this morning for to-day's shipment. This movement seems to be in opposition to Friedlander's ship monopoly, and will prove advantageous to farmers in this vicinity.

A BIG CASK.—There is an immense barrel, hoghead or cask, or whatever it may be called, at the railroad depot for the Johnston Distillery, which was manufactured at Sacramento. It is too large to be conveyed on a truck to the distillery, and a railroad car will be required for the purpose. The wooden vessel is made of redwood, and its staves are three inches in thickness. Its capacity is 3,500 gallons, and it cost \$175.

THE PRICE.—Castor beans are selling at \$4.50 per 100 pounds. The crops in this vicinity are being gathered, and go to San Francisco to find a market.

October 12th: WHEAT.—A lot of wheat, best quality, sold yesterday at \$1.42½ per 100 lb.

FINE FOWLS.—Supervisor DeCray received yesterday from the East a pair of Sumatra chickens, which he proposes to transport to-day to the balmy air of Camptonville. They are beautiful fowls, and will attract much attention to all who have foreign fowls on the brain.

DRIED FRUIT.—Warren Briggs shipped yesterday to San Francisco four tons of dried fruit. Mr. Briggs informs us that he has been troubled much to find hands for the conduct of this branch of his trade. Chinamen could be had but he preferred white labor. White hands, if sober and industrious, accomplish twice the amount of work. But the latter are too often found to be addicted to drink, and difficult to keep any length of time in the orchard.

Farm Items.

While paying his subscription for the *PACIFIC RURAL PRESS* in advance, at our office, we obtained the following information from Mr. G. W. Sperry, whose farm is not far from Stockton. His wheat yield for 1872 amounted to some sixty thousand bushels. He intends to store for better prices about 700 tons. We think enough farmers will do likewise, so that soon there will be ships enough to take wheat to Liverpool at something like reasonable prices. Mr. Sperry has raised 160 acres of Norway oats, of which he speaks favorably of the yield. The heads were out about 5 inches when they were caught by several days of blighting north winds, and for weeks they seemed to be stunned. Afterwards they started and grew to 12 inches making a good yield. Some heads were 20 inches in length. When the growth of the heads was ready to cut, the first (or stunted) growth now so ripened as to fall upon the ground, and Mr. S. considers it fully sufficient seed for another crop, and will cultivate it in accordingly. Mr. Sperry has sufficient faith in drilling wheat to make a fair test of it the coming season. Speaking of plowing in the straw, he says it appears never to rot in his sandy soil, and that the ashes resulting from burning seems to be their dernier resort. In answer to our query, if one summer fallowing would not rot the straw turned in during previous seasons, he thought it might. As to his deep plowing, it works well if the ground is afterwards sufficiently rolled or packed down; otherwise it is a failure. He prefers stamping down the ground with stock. By allowing stock to feed for several weeks on a field of rye during a dry season the yield was more favorable when compared with an adjoining field. A strip of wheat harrowed when five inches high showed marked lines of superior growth. It gave a heavier harvest than the grain on each side. He treats his volunteer grain to a good harrowing when it is four to six inches high. We expect a report on Mr. Sperry's experience in drilling wheat.

BARRENNESS OF TWINS AMONG CATTLE.—A gentleman writes to a German paper concerning his experience as to the barrenness of twin calves of different genders. In one case the twins were from an excellent mother. The female was barren, and after killing was found to have incomplete sexual organs. The male also was useless for breeding, although it is commonly supposed that in such cases the female alone is unfruitful.

THANKSGIVING.—President Grant, by official proclamation, fixes Thursday, November 28th, as a day of thanksgiving throughout the United States.

Chemical Manures.

We have received from Henry Carey Baird, industrial publisher, 406 Walnut street Philadelphia, through A. L. Bancroft, of this city, a book of 116 pages, entitled: *The School of Chemical Manures*; or elementary principles in the use of fertilizing agents. From the French of Mr George Ville, by A. A. Fesquet, chemist and engineer.

This is an excellent work, treating upon the nature and fertility of soils and their sterility, and the application and use of chemical manures, alone and in connection with farm-yard manures, with illustrations showing the effects of single and combined manures upon the growth of wheat, both straw and grain, and clearly demonstrating the vast gain to be derived from their adoption and use, not only in the production of grain but other farm crops.

The price of the publication is \$1.25, sent by mail free of postage.

THE BEET SUGARIES.—One at Alvarado the other at Sacramento, are both turning out sugar in large quantities and of superior quality. The success of the enterprise is established beyond question. The per cent. of profit upon the investment must depend much upon the original cost of land, buildings and machinery. At Alvarado we learn the cost of land was very nearly \$200 per acre; at Sacramento \$30 per acre.

Farming and Half Farming.

We have known people ambitious to make money, who would spare no labors to increase their income, and when they had secured it, would spend it to no purpose—waste it; get rid of it they scarcely knew how—and have nothing to show for it. They were good to make money, but could not keep or use it well. The only good they could get of their money, was the doubtful good of having it pass through their hands. There are many people of this stamp; they can get business and do it; can earn great wages; drive and push through any amount of toil; make long and close calculations; talk largely and well enough about business, but cannot increase their own capital. Their purse will not hold money—it leaks; it seems like the fabled pit, without a bottom; or, like the miller's dam, whether it rained much or little, would hold no water; or, most likely, they have no purse. Their money burns their pockets and hands; they have it spent before it is got, or plans on hand for its disposal.

Much like this class of people are many farmers—they can raise good crops but cannot make them pay; they neglect their fences, and the cattle break in just before harvest, or if they get a good crop they have no place to secure it; fine fields of hay and grain are gathered, but there are no barns and granaries to keep them; the fruit trees yield well, but there are no means for preserving the fruit, and it goes to waste; the root crops are good, but the frost and winter destroy them, because they cannot bear everything; the farming implements rot more than they wear, because the rain and sun are ever pelting and scorching them; the cows give good milk, but the want of dairying appliances makes the milk of but little value; the pigs are in the corn-crib; the sheep are in the garden; the kitchen has no wood, but lives from hand to mouth; the house has no cellar; the water is far away. Everything works the hard way; there is much done, but little saved. When spring comes everything is gone; seeds of all kinds must be bought; the rotten utensils replaced by new; the broken down fences made over; the peeled and browsed fruit trees replaced by new and young ones; and a world of labor spent to get the farm into working order. So it goes year after year; and all the difficulty lies in want of order and taste in the style of farming.

No man of order or taste will see gates hanging on one hinge, fences reeling, everything looking like old chaos or young ruin; men of taste will husband well their farms, and men of real farming skill will have arrangements for making the most of all they get, for saving or marketing, that nothing be lost. It is the farmers' losses that keep them back, and the most of their losses are by their own negligence or want of skill. There is much half-farming; they waste a great deal of labor and time. The art of keeping everything in order lies in having a place for everything and putting everything in its place when used; in making repairs when needed; in always putting odd moments of time, rainy days, etc., to making improvements, arranging conveniences, and in getting ready for the season's active labor. Let all half farmers mend their ways as fast as possible, so will they mend their fortunes and their temporal interests.—*Utica Weekly Herald*.

HARD ON THE FARMERS.—A. H. Todd & Co., grain dealers, corner of Davis and Sacramento streets, were unable to stand the pressure of "steamer day" yesterday, and have declared themselves insolvent. Liabilities about \$32,000, assets about \$3,000. Their creditors are chiefly farmers who consign their grain and other produce to them to sell. We are informed that several other cases of insolvency have been caused by yesterday's collections.—*Republican*.

INSURANCE AGAINST MARRIAGE.—The climax of novelty in the insurance business has been reached in Austria, where a company recently proposed to insure people against getting married. At least, that was about the effect of the arrangement, which was, in other words, that the company would pay a certain sum to the policy-holder whenever he took to himself a wife. Upon a little reflection, it does not seem that there is anything absurd in this plan. A man can make provisions by which he will be compensated for the destruction of his property by fire, or the loss of a limb by accident, and by which his family will be compensated for his removal by death. Why, then, should he not be able to provide against another very common California contingency?

But it would be interesting to know how the tariff of rates was calculated, though it is probable that the charge was adjusted, by some mysterious process, to the age, personal appearance and susceptibility of the policy-holder. It would be gratifying to report the success of the Austrian experiment, but the facts will not permit it. There were numerous policies issued and the business seemed to be in a thriving condition, when the officers of the company all got married at once and absorbed the assets, leaving the outsiders to be preyed upon by handsome females without any hope of pecuniary consolation.—*Ex*.

A Home-made Wind Mill.

Here is a plan for making a home-made wind mill, which we find in an exchange, credited to J. Corwin, N. J.:

Farmers and others can, in many cases, construct a wind-mill themselves, for a tithe of the cost of the patented plans, that for certain purposes, would suit them better, because easily kept in repair. Here is the suggestion of a plan of which it may be said that it can be constructed (for churning, stock pumping, &c.,) for five dollars, beside the material that the farmer can find on his farm and his own labor, excepting also the sails which properly belong to the maintenance. Of course to obtain such a result the simplest possible plan must be devised and all "improvements" rigidly ruled out.

It consists of an upright post supporting an upright shaft, having a hub on top carrying three horizontal arms, to each of which are hinged light rectangular frames covered with heavy muslin or light canvas, regulated to swing in one direction only, from horizontal to perpendicular. The sails are carried with the wind, at right angles to it, and return edgewise against the wind. The post may lean two feet at the top, so as to shorten the connection of the upper box with it. The lower bearing may be in a post set in even with the ground, under the upper bearing. The pulley, four feet in diameter, secured near the bottom of the shaft, may have a smooth true groove for rope band burnt into its circumference by a "stone" bar, its one end resting in a hole in the post, the other in the hand, the section in contact with the wheel being red hot. A mill on this plan can, at moderate cost, be constructed for milling.

Census of Bees.

The *Massachusetts Ploughman* has been writing up bee statistics, and gives them thus:

"Uncle Sam has bees enough to give us all a sting! There are two million bee hives in the United States. Every hive yields on an average a little over twenty-two pounds of honey. The average price at which honey is sold is twenty-five cents a pound. So that, after paying for their own board, our bees present us with a revenue of over \$8,800,000. To reckon it another way, they make a clear gift of over a pound of pure honey to every man, woman and child in the vast domain of the United States. In 1860, over twenty-three and one-third million pounds of wax were made and given to us by these industrious workers. The keeping of bees is one of the most profitable investments that our people can make of their money. The profits arising from the sale of surplus honey average from fifty to two hundred per cent. of the capital invested."

TRAINING A YOUNG HORSE.—In teaching a young horse how to drive well, do not hurry to see how fast he can trot. Keep each pace clear and distinct from the other; that is, in walking make him walk and do not allow him to trot. While trotting be equally careful that he keeps at a steady pace, and do not allow him to slack into a walk. The reins, while driving, should be kept snug; and when pushed to the top of his speed, keep him well in hand, that he may learn to bear well upon the bit, so that when going at a high rate of speed he can be held at his pace; but do not allow him to pull to hard, for it is not only unpleasant, but it makes it often difficult to manage him.—*Ex*.

THE degree to which the ruthless and careless slaughter of the bison on the western plains is carried, is indicated by the fact that in the single month of May there were killed 25,000 bison south of the Kansas Pacific railroad, for the sake of their hides alone, which are worth but two dollars each.

EVERY parent is like a looking-glass for his children to dress themselves by. Therefore parents should take care to keep the glass bright and clear, and not dull and spotted, as their good example is a rich inheritance for the rising generation.

Bargion's Improved Hub and Axle.

A patent has recently been procured through this agency by Peter Bargion, which fills a want long felt, and which will most probably be generally adopted. It is an improvement in the manner of securing boxes in the hubs of wheels, and is more especially applicable to the cast-iron wheels used in gang and other plows, and reaping and mowing machines and all other agricultural machinery. There is also a device for preventing sand from working into the box and cutting it out.

In the hub of a wheel, such as is used in agricultural implements, a hole is bored out large enough to make a square channel at one side of the bore entirely through the hub. At about the middle of the bore is a short channel at right angles to the other channel and communicating with it. The box has a projecting flange or rim at one end, and also a lug projecting from it at a proper distance from the flanged end, to be turned into the short channel in the manner of forming a bayonet lock after the box has been slipped into the bore of the hub, the lug passing in through the long channel. A flange is also recessed opposite the long channel, and a wooden or other key confines the box in place, and prevents it from shifting.

On the axle a flange is made at the proper distance from the end of the journal to fit against the inner end of the box. This flange is large enough to fit in the recessed end of the box, and has its outer corner beveled off so as to exclude any sand or dirt which would otherwise get into the box. In order the better to protect the outer end of the box from dirt and sand a nut is employed, having a large beveled flange or head, which screws upon the outer end of the journal. By this means both ends are protected so that dirt and sand can not get in.

The object of this construction of the hub and providing it with a box is to save the wheel when the box is worn out, as all that it will be necessary to do will be to get a new box and the wheel will be ready for use again. At present in using agricultural implements the wheels have to be bushed repeatedly with Babbitt metal, occasioning loss of time and great inconvenience. By using this device the necessity of this will be entirely obviated, for as soon as the box wears out a new one can be procured. The box as above described is merely a cylindrical sleeve with channel, and it may be made by any blacksmith, though they will most probably be easily procured at trifling expense. This invention is also applicable to axles of wagons, etc., and with light hubs may be also used on buggies and carriages. Those desiring further particulars on the subject can address, Alex. Weed, 443 California St., S. F.

NOVELTY IN CULTIVATION.—Mr. Henry Wilson, who resides in Santa Rosa, in Sonoma County, has this year planted thirty-four acres of corn which will average fifty bushels to the acre. It was sowed on the 20th of April, since which time no rain has fallen upon it, nor has it been irrigated. The *Democrat* says that surprise is excited at this success, from the novel manner in which the ground was cultivated. The land was first broken up in January with a gang-plow, six inches deep. It was plowed again February with the same plow, eight or nine inches deep. When the corn was six inches high a hoe-cultivator was run through it to cut up some pea-vines which had sprung up among it. After that it was entirely undisturbed until maturity. Mr. Wilson's theory is that land should be thoroughly prepared previous to planting—after that let it be, except to kill weeds, which is the reverse of the practice in the East. From his experience and observation, it is injurious to stir the land in Sonoma County for any crop after the rains are over.—*Call*.

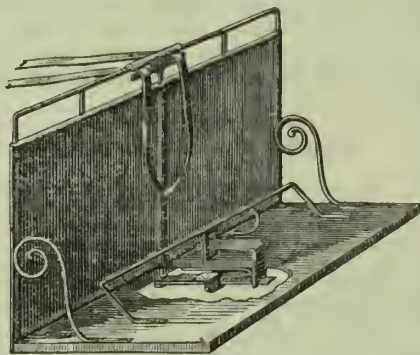
KEEPING FRUIT IN OUR ROOMS.—We should be chary of keeping ripe fruit in our sitting rooms, and especially beware of laying it about a sick chamber for any length of time. The complaint which some people make about a faint sensation in the presence of fruit is not fanciful—for two continental chemists have shown that from the moment of plucking apples, cherries, currants, and other fruits, they are subject to incessant transformation. At first they absorb oxygen, thus robbing the surrounding air of its vital element. Then they evolve carbonic acid, and this in far greater volume than the purer gas is absorbed, so that we have poison given us in the place of pure air, with compound interest. Temperature affects the rate of changes, warmth accelerating it.—*Good Health*.

THE NEW LINE OF STEAMERS TO CHINA.—The New York *Shipping List* states that three of the four steamers designed for the British line between Hongkong, Yokohama and San Francisco have been completed, and the enterprise is to be inaugurated about the first of January by the departure of the pioneer steamer from Hongkong. It is stated that the vessel will take the northern route, thus shortening the distance 500 miles, and reducing the passage from San Francisco to Yokohama to sixteen days, instead of the present schedule of twenty-two days by the Pacific Mail line. It is believed that Macdonald & Co. are to be the resident agents in this city.

Improved Rein-Holder.

The accompanying illustration represents an attachment for buggies, carriages and other vehicles, for the purpose of holding the reins when the driver desires to leave the horse and buggy standing. It also serves to hold the reins and relieve the driver on a plain level road and with a gentle horse. The cut shows that portion of the bottom of a buggy or other vehicle which is in front of the driver's seat, and also the dashboard with the iron rod which forms a part of it and passes across above the leather.

An inverted concave metal plate fits down upon this rod or wire at its middle. A wire or rod is secured to the middle of the inner side or edge of the inverted concave plate and passes down along the vertical rod which forms the middle support of the dashboard and passes beneath the floor into a box beneath the buggy bottom. This rod passes down inside the leather and is therefore concealed from view. A lever is hung upon a pivot at its middle, inside of the box, upon one end of which the lower end of the rod passing down inside of the leather on the dashboard rests. A foot-lever stands above the bottom of the buggy, and



VILE'S PATENT REIN-HOLDER.

passes down through the floor where it is connected to the opposite end of the lever-rod, so that by pressing down upon the foot-lever the rod and the horizontal concave plate are raised. A spring serves to give a reverse tension to the lever and thus hold the concave plate firmly down upon the rod on top of the dashboard.

In order to secure the reins when it is desired to leave the horse and buggy standing still for a time, the driver has simply to press his foot upon his foot lever and thus lift the concave plate. The reins can then be slipped between the rod on top of the dashboard and the concave plate, when by removing the pressure from the foot-lever, the plate will be drawn down by the spring so as to bind the reins between it and the rod. This device is very neat, simple and convenient. When the reins are not beneath the concave plate it will fit down upon the rod upon which it rests so snugly that its presence would hardly be noticed, while it is completely out of the way. It is easily operated and will hold the reins with a firm grip, as the edges of the concave plate will serve as a clamp to bind them firmly in place.

By the use of this device many accidents will be prevented for it often occurs that when the reins are placed carelessly over the dashboard or between its edge and the whip as it stands in its socket, that one or both of them fall to the ground, especially if the reins are rather short. People will be negligent, of course, in this as in other cases, and the ingenuity of the inventor is frequently called into requisition to devise means to take the place of forethought or prudence in human beings; so while some simple contrivance like this one is in existence it should be universally adopted so as to forestall negligence and its results. The reins are in no danger of falling under the horses' heels when fastened in this manner and the chances of a runaway are much lessened. The device was patented through the SCIENTIFIC PRESS Patent Agency by E. C. E. Vile, of Santa Clara, Santa Clara County, who may be addressed at that place by those desiring further information.

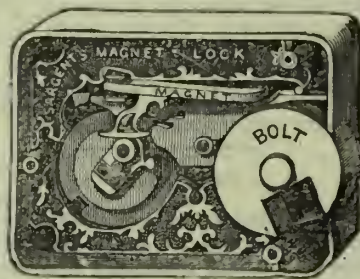
THE MESQUITE GUM of Western Texas is almost identical with gum arabic, and during the past year has become an article of export, some 12,000 pounds having been gathered in Bexar county, and as much more between that and the coast. This gum exudes from the stems and branches of the mesquite, a mimosa, several species of which grow in Texas, New Mexico, and Arizona.

Sargent & Greenleaf's Magnetic Lock.

The accompanying cut represents one of Sargent & Greenleaf's patent magnetic locks which are now used on Tilton & McFarland's and Diebold & McKenzie's safes. It consists of four Combination Wheels, all revolving on one stud. Each of these wheels has a single slot or notch in its edge, and when these are all brought into line the bolt may be thrown.

Over these wheels is a lever or dog, which, when they are all set right, falls into the slots, and releases the bolt. The lever does not rest its full weight on the wheels, nor is it brought to the wheels by a spring or cam, as in most other locks, but most of the weight is held off of them by means of a powerful magnet. Every time the knob is turned round, the magnet is separated from the lever, which, if the slots are all set tight, then drops into them; thus releasing the bolt. The operation of the magnet in this manner shuts off entirely the use of the Micrometer, an instrument sometimes applied to picking locks. In the Magnetic Lock the lever (or dog) is nearly (not quite) sustained by the attraction of the magnet, and never comes in full contact with them and the knob outside at the same time, except when in position to unlock. The arbors in these Locks do not pull out, or shove in, while operating the lock, nor is there any "dead hold" to which force can be applied to wrench off the knob when the Lock is in the locked position.

The Magnet Locks have taper shafts tapering



towards the inside, which are made in two parts, having a connection five-eighths of an inch in from the outside face of the safe door. The outside part is made of soft metal, while the remainder of the shaft is of hardened steel, so that in case of violence to pull out the arbor, it would yield at its point of connection, thus leaving the main part of the shaft, which cannot be driven in, beyond the reach of the burglar's tools. The two pin holes, indicated in the spindle, at the point of connection with the knob, are a means of protection against a "lock up," in case the knob is wrenched off by any means; in which case the latter can again be attached by inserting two pins at these points, when the lock will operate upon the numbers to which it is set.

This company also manufacture several other classes of locks. The drawer lock is a very neat and effective one and cannot easily be picked. These locks are now used by the United States Treasury Department. One kind is made so that the key cannot be withdrawn unless it is locked, thus providing against carelessness. The agent on this coast is James Stott, No. 1002 Market street in this city.

EARTHQUAKE DISTURBANCES.—At the last meeting of the California Academy of Sciences, Professor Geo. Davidson of the United States Coast Survey, called the attention of the Academy to the earthquake-waves which recently occurred, and which were felt at Honolulu, Astoria, San Francisco and San Diego. The first disturbance occurred on the 24th of August and continued three days. They were first felt on this coast at Astoria, then here, and then at San Diego. At Astoria the waves have to come over the bar and up the river to reach the gauge; at San Diego the waves pass through an extremely narrow entrance. At the Sandwich Islands the times of wave intervals were nearly the same as in San Francisco. They were felt there 2 3/4 hours before they were felt in San Francisco, allowing for difference in longitude; and four hours before they manifested themselves in San Diego. The height and interval of waves was illustrated by a diagram with notes taken by the observer at Fort Point. In August, 1872, the disturbance of the curve by earthquake-gauge was 1-12. First indication in San Diego sheets were at 6 1/2 p. m., August 23d, and lasted to 7 1/2 a. m. on the 27th of same month; very faint towards the end. The indications at Astoria began at 4 p. m., Aug 23d, with less intensity than at San Diego, and much less than at San Francisco. At Honolulu the disturbance was at 12:25 p. m., August 23d. Earthquake-waves were also felt here on the 16th and 17 of September. The time between the wave crests places the locality of the disturbance causing them, at great distance from here.

Professor Davidson had made a careful calculation from the above mentioned data and determines that the immediate locality of the disturbance was in the vicinity of the island of Yesso, or one of the most southern of the Kurile islands. The last steamer from Japan brought no news concerning any terrestrial disturbance there, but the Professor was confident it was there.

Irrigation.

In comparison with what was done in bygone days, and what is now being done in other countries, we are only just beginning to irrigate; and we need to take lessons from our forefathers or from the dwellers in other lands, unless we would remain far behind.

In an article recently contributed to a southern exchange, Professor Whitner, of Florida, after referring to the practice of irrigation in Egypt, and to various scriptural allusions showing that it was also practised by the Israelites, says that from reliable profane writers we learn that this branch of agriculture was practised by Romans before the Christian era. Virgil refers to it in his celebrated work on husbandry, the *Georgics*, and the Celestials claim to have been familiar with it before the flood.

Even the aborigines of the new world were not ignorant of this art. The skill and cultivation of the Aztecs, as displayed in their wondrously-beautiful and luxuriant gardens, their immense reservoirs and extensive aqueducts, are noticed by Prescott and other historiographers of the Spanish conquest. These relics of a long-past age—found in every warm country—are enduring monuments of a progressive civilization, compared with which desolate fields and crumbling cities, the sad mementoes of military renown, as are the patient and useful animals of domestic economy to the prowling beasts of prey, whose only province is to destroy.

Canals in Italy.

In modern times the system of irrigation is perhaps more extensively and scientifically employed in Italy than in any other country. Hydraulic engineering as a science is taught in one of the universities at Turin, having especial reference to the cheapest and most effectual mode of applying water to agriculture.

We are informed that the great canal of the Ticino was constructed in the twelfth century, and for more than six hundred years has carried a volume of water equal to 1,800 cubic feet per second. This large mass of water is conducted through the country by thousands of different channels, fertilizing and stimulating the soil to such a remarkable degree as to render the region through which it passes one of the most productive and densely populated in the world. The new Agricultural Report contains a lengthy description of the Cavour Canal, in the same country, which has recently been constructed to utilize the main stream of the Po River. This great work was constructed under contract with the Italian government, by an association of English capitalists. The association was bound to raise a capital of \$16,000,000—\$10,680,000 for construction; \$4,060,000 for payment of crown canals on the affluents of the Po; and the remainder \$1,260,000 for the extinction of private rights to irrigating waters.

Some idea of the magnitude of the work may be gathered from the following particulars:

Their Magnitude.

The canal commences near Chivasso, on the left bank of the Po, where a temporary dam—soon to be replaced by a permanent and substantial weir—raises the water eight feet. The entire length of the canal is fifty-three and one-third miles, sloping at least one foot in four thousand throughout the whole course, and in some parts one in two thousand. At its head it is one hundred and thirty-one feet wide and six and one-tenth feet deep. Six miles below it narrows to sixty feet, and deepens to eleven and fifteen tenths feet.

At the thirty-ninth mile the section changes to forty feet in width by 10.5 in depth. Its velocity varies from 4.2 to 4.9 feet per second. It crosses the Dora Baltea through an aqueduct 635 feet long, supported upon nine arches 52.5 feet span. Several other streams are crossed either by aqueducts or siphons. The company owns 405 miles of previously-constructed canals, and is negotiating for the purchase of several other canals. It supplies several of these canals at different points along its line.

The Ganges Canal of India.

This canal discharges 8,000 cubic feet of water per second. It is 1,000 miles long, and, besides the vast benefit experienced in the improved sanitary condition of the country, more than 11,000,000 of acres of barren and worthless lands have been reclaimed and reduced to successful cultivation; and the enterprise, although costing the large sum of £1,500,000, is said to yield, after deducting all expenses, an annual interest of twenty-two and a half per cent. on the money invested.

The magnitude of these works shows the importance which is attached to irrigation in the countries in which they have been constructed. Irrigating canals there may claim to rank beside railways, and doubtless do as much to promote the prosperity of the people.

It is only possible that such works as those to which we have referred can be constructed by coöperative effort. But for this, large bodies of fine agricultural land must have remained valueless, and so it must be in all countries requiring irrigation. Hence—if for nothing else—the great value of the Colony System, which is becoming so extensively developed.—*Out West*.

A VEIN OF COAL has been struck at Vancouver Island that is equal in quality to the anthracite coal of Queen Charlotte Island.

USEFUL INFORMATION.

Oyster Babies.

An observer of the oyster says he is not as stupid as he looks. He can keep his mouth shut, and thereby defy all our arts to wile a secret from him. When spitting time with the oyster comes, it is ssid to be sick or milky. This appearance is due to the accumulation of the spat, which is, in the earlier stages of its development, of a creamy consistence of color. When the spat is matre, it assumes the appearance of the scraping of a slate-pencil; the parent oyster then opens its shell, and a kind of mistiness is observable in the surrounding water.

This is caused by the myriads of young oysters scattered in every direction. No sooner are these tiny creatures free from their mother than they assume the most active state of life and motion, dancing and gyrating up and down in concentric columns, as midgits play in the evening sunbeams. Under the lens of a microscope you will see how exquisitely these little fellows are fashioned.

A pair of tiny shells, the counterpart of those of the mature oyster, enclose the yet rudimentary organs, while affixed to the mantle is a kind of tiny coronet, composed of minute, hair-like appendages (cilia). The violent and ceaseless vibration of these living paddles serves to row the infant oyster rapidly from the place.

Should it become the destiny of one of these fragile beings to become a steady, well-behaved oyster, it finally settles itself on some suitable resting-place, to which it makes itself fast—no one ever clearly knows how—by the under valve or shell. The bristle-like oars of cilia, no longer of any utility, disappear, and now a permanent fixture, the baby oyster begins to grow.

At about a fortnight old it is not much bigger than a fair-sized pin's head, and at three months about that of a split pea. Having attained a year's growth under favorable conditions, the young oyster will become as big as an ordinary halfpenny; while at four years' growth they are considered marketable.

Antiquity of Fermented Liquids.

It is highly creditable to the ingenuity of our ancestors, that the peculiar property of fermented liquids, in virtue of which they "make glad the heart of man," seems to have been known in the remotest periods of which we have any record. All savages take to alcoholic fluids as if they were to the manor born. Our Vedic forefathers intoxicated themselves with the juice of the "soma;" Noah, by a not unnatural reaction against a superfluity of water, appears to have taken the earliest practicable opportunity of qualifying that which he was obliged to drink; and the ghosts of the ancient Egyptians were solaced by pictures of banquet in which the wine-cup passes round, graven on the walls of their tombs. A knowledge of the process of fermentation therefore, was in all probability possessed by the prehistoric population of the globe; and it must have become a matter of great interest even to the primeval wine-bibbers to study the methods by which fermented liquids could be surely manufactured. No doubt, therefore, it was soon discovered that the most certain, as well as the most expeditious, way of making a sweet juice ferment was to add to it a little of the scum, or lees, of another fermenting juice. And it can hardly be questioned that this singular excitation of fermentation in one fluid, by a sort of infection, or inoculation, of a little ferment taken from some other fluid, together with the strange swelling, foaming, and hissing of the fermented substance, must have always attracted attention from the more thoughtful. Nevertheless, the commencement of the scientific analysis of the phenomena dates from a period not earlier than the first half of the seventeenth century.—*Popular Science Monthly*.

HYDROSCOPY—WHAT IS IT?—A Frenchman by the name of Paramelle has been devoting himself to the scientific study of subterranean waters, the kind of ground where they are to be found, their flowing, the physical laws that govern their abundance or scarcity, and their depth. The science is now said to be complete, and it has been christened "hydroscopy," or subterranean hydrology. Its applications are definite, and among them we must place in the first rank the discovery of springs and well sites. Within easy access of every village, almost of every house, and generally at a little depth below the surface of the soil there exists streams of water. By a simple digging (indicated after a thorough survey of the place, and not by the aid of the divining rods, which have made so many dupes), one can channel out the hidden streams, and make them flow to the surface; or else a well can be dug which will furnish an abundant supply of water. Paramelle has already, it is stated, discovered 9,500 springs in France, and his disciples have been equally successful.

Do Fishes Think?

It is a novel question, but not beneath the consideration of a philosopher. It is a common way of disposing of difficult problems in regard to manifestations of intelligence in animals which are departures from the ordinary routine of their acts, to call them extraordinary deviations from their natural instincts.

The monkey that smoked at the Zoological Gardens last season for the pleasure of it, and dogs which are met on Broadway carrying home a basket of provisions, threading their way through crowds of busy hums, all perform acts above the law of simple instinct, which makes no progress, but repeats the same thing in each succeeding generation.

The first associated a sensation of pleasure from charging a pipe with tobacco, and the latter has in mind the approbation of their masters in faithfully delivering the marketing to the cook.

If there is no reasoning here, what is it? And next, how are such mental phenomena to be explained?

Fishes have a peculiarly nice sense of smell, and their ears are curiously constructed with reference to appreciating the slightest concussions at a very considerable distance. When waves dash against rocks or a belligerent contest is raging between aquatic enemies, they appear to have exact knowledge of what is transpiring, through their delicate acoustic organs.

Fishes also receive impulses from the air, even slight as may be the force of aerial undulations on the denser mediums on which they float. It is positively certain they may be taught to gather for feeding at the ring of a bell. That is a demonstration.

If, when they hear the bell they rush to the spot where the food is given them, it is an indication of memory? A particular sound is associated with the idea of satisfying hunger; can there be memory without reflecting?

What property of mind is it by which they are instructed, so that by repetition a certain amount of actual knowledge is acquired, in that they do not think?

The Human Ear.

Professor Tyndall concluded one of his recent lectures by giving a minute description of the human ear. He explained how the external orifice of the ear is closed at the bottom by a circular tympanic membrane, behind which is a cavity known as the drum; the drum is separated from the brain by two orifices, the one round, the other oval. These orifices are closed by fine membranes. Across the cavity of the drum stretches a series of four little bones, one of which acts as a hammer and another as an anvil. Behind the bony partition, which is pierced by the two orifices already mentioned, is the extraordinary organ called the labyrinth, filled with water; this organ is between the partition and the brain, and over its living membrane the terminal fibers of the auditory nerve are distributed. There is an apparatus inside the labyrinth admirably adapted to respond to these vibrations of the water, which correspond to the rates of vibration of certain "bristles," of which the said apparatus consists. Finally, there is in the labyrinth a wonderful organ, discovered by the Marchese Corti, which is to all appearance, a musical instrument, with its cords so stretched as to accept vibrations of different periods, and transmit them to nerve filaments which traverse the organ. Within the ears of men, and without their knowledge or contrivance, this lute of three thousand strings has existed for ages, accepting the music of the outer world and rendering it fit for reception by the brain. Each musical tremor which falls upon this organ selects from its tensioned fibers the one appropriate to its own pitch, and throws the fiber into unisonant vibration. And thus, no matter how complicated the motion of the external air may be, these microscopic strings can analyze it and reveal the constituents of which it is composed; at least such are the present views of those authorities who best understand the apparatus which transmits sonorous vibrations to the auditory nerve.—*London Paper*.

"WHAT IS A HOGGET?"—It is an English term applied to sheep, and, like many other similar terms, does not seem to have any very definite meaning. Webster, quoting from the American agricultural writer Skinner, says, "A hogget is a sheep two years old." As we understand the matter, however, the general meaning of the term as used by English farmers is a sheep, male or female, from the time it ceases to be a lamb until it is shorn for the first time. After it is shorn, it is a "shearing" or "shearling;" when shorn the second time, it is a "two-shear" sheep, and when shorn the third time, a "three-shear" ram, ewe, or wether, as the case may be. A "hogget," then, is a lamb, without regard to sex, from five to fifteen months old, or until it is sheared. After that, it ceases to be a hogget and becomes a shearling. For the sake of distinction it is, we believe, proper to say ewe hogget, wether hogget, etc.

SOLDERING LEAD.—Plumbers' solder is an alloy of 1 part lead and ¼ part tin; apply with an ordinary soldering iron, the joint having been first scraped clean and rubbed with tallow or resin.

GOOD HEALTH.

The Influence of School-Life on Sight.

Dr. Liebreich, ophthalmic surgeon and lecturer at St. Thomas's Hospital, London, has been making investigations on this subject in English schools, and finds almost everywhere arrangements more or less injurious to the organ of sight. An article in the *American Artisan* gives an abstract of Dr. Liebreich's remarks, from which we select the following:

The changes in the functions of the visual organ developed under the influence of school-life are three in number:

1. Decrease of the range of vision.
2. Decrease of the acuteness of vision.
3. Decrease of the endurance of vision.

Decrease of the range of vision, or short-sightedness, is developed almost exclusively during school-life. It is true that short-sightedness is often hereditary, but this must not be thought to mean that the children of short-sighted parents are born with this defect. They have only the predisposition to become short-sighted, and this predisposition is developed during school-life, more or less, according to circumstances.

Decrease of acuteness of vision is generally the result of positive diseases of the eye, which may exceptionally be induced at school. This defect is, however, often produced in one eye by unsuitable arrangements for work, which disturb the common action of the two eyes, and weakens the eye which is excluded from use.

Decrease of endurance is a very frequent affection, and arises principally from two causes. The first is a congenital condition called *hypermetropia*, which can be corrected by convex glasses, and which can not therefore be laid at the door of school-life. The second is a disturbance in the harmonious action of the muscles of the eye—a defect which is difficult to cure, and which is generally caused by unsuitable arrangements for work.

These three anomalies all arise from the same circumstances, viz.: insufficient or ill-arranged light, or a wrong position during work.

Insufficient or ill-arranged light obliges us to lessen the distance between the eye and the book while reading or writing. We must do the same if the desks or seats are not in the right position or of the right shape and size. When the eye looks at a very near object, the accommodating apparatus and the muscles which turn the eye, so that the axes converge toward the same object, are brought into a condition of a greater tension; and this is the principle cause of short-sightedness and its increase. If the muscles of the eye are not strong enough to resist such tension for any length of time, one of the eyes is left to itself; and while one is directed to the object, the other deviates outwardly, receives false images, and its vision becomes indistinct. Or, perhaps, the muscles resist these difficulties for a time, become weary, and thus is produced the diminution of endurance.

In order to prevent these evils, the light should be sufficiently strong, and fall on the table from the left-hand side; and, as far as possible, from above. The students should sit straight, and not have the book nearer to the eye than ten inches at the least. Besides this, the book should be raised 20° for writing and about 40° for reading. The proper light is most easily obtained if the class-room is of an oblong shape; the windows being in one of the long sides, and the desks arranged parallel to the short walls, so that the light falls from the left side. The desk of the master should be placed near the short wall toward which the scholars look.

Tea, Coffee, Cocoa, and Alcohol.

We extract from the *British Medical Journal* the conclusions of a French physician, Dr. Angel Marvaud, who has been experimenting on the physiological and therapeutical effects of coffee, tea, cocoa, maté or guarana (Paraguay tea), and alcohol, which he classes together as aliments of economy, or anti-waste foods. He considers their influence on nutrition from two points of view as stimulants to the nervous system, as anti-waste foods or anti-assimilators. Alcohol acts directly on the sensory apparatus of the spinal cord, and indirectly on the motor apparatus. Cocoa acts directly on the motor apparatus, which it excites in the same manner as strychnine. Coffee, tea and maté act principally on the brain. Alcohol and cocoa excite the exercise of the muscles; coffee, tea, and maté, the exercise of thought. Further, by lessening the waste of the tissues, counteracting organic oxidation, and diminishing loss by means of the secretions, they all act as aliments of economy. In this way is explained their action in stimulating to work in the evening, in partly supplying the want of solid food, and in moderating vital combustion. Hence arises their increasing consumption, and their more general use as articles of daily régime; hence, too, their utility in alimentation, and their important place in hygiene. The abuse of these aliments has, it is true, two principal inconveniences. In the first place, the excitement of the nervous system which they cause is liable to be followed by fatigue, weakness, and even inertia. In the second place, by their interference with and reduction of the processes—indispensably necessary to life—of combination, transmutation, and decomposition,

they may cause arrest, suspension, or even complete suppression of the nutritive changes in the cellular elements, and may produce as results, torpor, atony, fatty degeneration, and necrobiosis of the tissues. Thus are explained alcoholism, coffeeism, theinism, and cocoaism.

Mental Vigor in Old Age.

Of a celebrated writer, whose age is sixty-seven, it is said: "He now lives in retirement, having given up all labors, literary and otherwise." How often is this record made of men whose powers are unimpaired and whose labors, if continued, might bless the world to the end of time.

It is said of Arnauld, the Jansenist, that he wished his friend Nicole to assist him in a new work. Nicole replied: "We are now old; is it not time to rest?" "Rest," exclaimed Arnauld, "have we not all eternity to rest in?"

Dr. Samuel Miller says: "There is no doubt that the premature dotage of many distinguished men has arisen from their ceasing, in advanced life, to exert their faculties under the impression that they were too old to engage in any new enterprise."

When John Adams was 90 years of age he was asked how he kept the vigor of his faculties up to that great age. He replied "By constantly employing them; the mind of an old man is like an old horse; if you would get any work out of it you must work it all the time."

We may have many remarkable instances of earnest and successful workers after they have passed into the period known as old age.

Ecclesiastical history tells the story of Cassiodorus, who, at the age of 70 retired to monastery and devoted the remaining twenty years of his life to literature and religion; and of Epiphanius, who became an author at 64 and wrote several large works before his death.

Between the ages of 58 and 67 Baxter wrote forty works; after the age of 66 some of his most valuable works were written.

"The only remarkable thing," says Hanna Moore, "which belonged to me as an authoress, was that I had written eleven books after the age of sixty."

Says Lord Brougham, at the conclusion of his autobiography: "If any statements have been feebly and inaccurately rendered, it may be remembered that I began this attempt after I was eighty-three years of age, with enfeebled health, failing memory, and but slight materials by me to assist it."

Plato died at the age of eighty-one, it is said, with pen in hand; and an account is given of another who wrote a history of his time at the age of one hundred and fifteen.

CUNDURANGO AND SARSAPARILLA.—The Philadelphia *Medical Times* remarks that "It was not the curing of cancer, but it was the obtaining of a profit of somewhere about 1,900 per cent. (\$38 per pound on an article costing not \$2 per pound), that animated the advocates of cundurango. The bubble has, however, been pricked; and we presume that Messrs. Bliss & Keene, more in sorrow than in anger, watch the fading glories of their great specific. They are making a feeble stand, or some one is trying to do so for them, on its anti-syphilitic powers; this will perhaps work off the stock they have on hand, but it will hardly do more."

One point of curious dissimilarity may be noticed between the medical history of this article and that of its analogue, sarsaparilla: namely, the comparatively short time required for the explosion of the claims of the former. The explanation is undoubtedly to be found in the free and constant reports of the results of experiment all over the world, which modern means of communication alone could render possible. Sarsaparilla held its own in country neighborhoods, retired towns, and remote places, long after it had been tried and found wanting at the great centres of medical science. Cundurango is known as a stupendous failure wherever it is known at all."

SPRAINS AND BRUISES.—These injuries are sometimes very distressing and their consequences very serious. The dense ligaments and synovial membranes of the joints swell, and sometimes inflame, as the result of local injuries, and the pain is often extreme. But simple water is all the treatment necessary in any case. It should however, be of a temperature adapted to the circumstances, the purpose being to unload the congested vessel of the injured parts as much as possible. If the parts are hot and painful, apply cold water or cold wet cloths, frequently renewed, until the heat becomes normal. If there is pain or tenderness without increased heat apply fomentations until the pain is relieved. All the after dosing required in either case is a wet cloth covered with a dry one, and worn until all tenderness is gone. This simple treatment will do all that any medication can do, and is better than all the liniments and lotions, plasters and poultices that were ever invented.—*Science of Health*.

COLD IN THE THROAT.—This disease is manifest in fowls by a noise, as if some substance had stuck in the throat—phlegm is present in the throat. The following remedy is highly recommended: A tablespoonful of water containing two drops of the tincture of aconite, given two or three times a day, and plenty of fresh water to drink.

FROST-BITTEN LIMBS.—Should be immediately bathed in cold water, and rubbed until heat is restored. Avoid warming numbed hands and feet at the fire.



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Saturday, October 19, 1872.

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"Scattering Seeds!"

We herewith offer, till further notice, to send this PACIFIC RURAL PRESS FREE for the term of THREE MONTHS (12 Nos.) to any one address which any new yearly subscriber may designate. Every old subscriber, upon renewing his subscriptions may send us the name of any neighbor or friend in any part of the U. S.—who does not already receive the Press—and a copy of the paper shall be sent for ONE MONTH free. Making this paper, in this manner, known to those likely to subscribe, we believe will more rapidly extend our list. We know there are thousands who would subscribe at once if fully acquainted with the benefits to be derived from our columns.

A WONDERFUL INSTRUMENT.—At the recent State Fair, the exhibit of the Dictator and Little Giant Hydraulic Joint Apparatus, attracted the attention of old and young; we instance, that of a little fellow who very naturally asked his father—fathers are supposed to know every thing—thence of it. Taking a square look at the instrument, he replied: "It's a hot-water gun used for the protection of the decks of ships of war, by turning a stream of boiling hot water in any direction upon any unwelcome boarders."

CALIFORNIA PIONEERS.—We acknowledge, with thanks, the receipt of a pamphlet from John Q. Adams, Esq., originating from the recurrence of the Anniversary of the Corporate Society of California Pioneers, it being their twenty-second. It contains the Oration of the donor on the occasion, and a Poem by Hon. Chas. H. Chamberlain.

WE HAVE a letter from a Gardener of 25 years experience, who wants a situation, in charge of hot and green house, laying out and the care of grounds, flower and vegetable gardens, growing and packing fruit, etc. He writes a good letter. Can any one inform us of a situation for him.

ON FILE.—Grains of Science (engraving in progress). Young Husbands, by Mary H.

Wheat Prices for Fifteen and a Half Years.

We present on page 253 the prices of wheat from the date when California practically became a wheat-growing State. It has taken the labor of many weeks in compilation, and is, we believe, the first of the kind published in the State. Taken in connection with the other tables and the editorial published a few weeks since, it will furnish a complete review of the wheat trade for the time before mentioned. By glancing at the table, it will be observed that we have had

Six Periods of Elevation and Five of Depression in the wheat market since the beginning of 1857. The first period of elevation was in 1857, when wheat was up to \$4.87½ in February. The next was in 1858, when it went up to \$6.75, in February also. The third was in 1862, when it reached \$2.93 in January of that year. The fourth was in 1865, when it went up to \$5.30 in February. In March, 1867, it reached \$3.12½, and in May, 1871, it was \$3.15. It will be thus seen that all these extreme prices, save one, were reached in the first three months of the year, when the harvest supplies had been well nigh exhausted, and in years when the crop was more or less affected by drought and other casualties.

The Lowest Prices

Quoted have occurred in October and November of 1860, when distilling wheat was quoted at \$1 in October and in November 1863, when it went down to \$1, in September 1866 when it was only \$1.25, in September 1869, when it fell again to \$1, and in July 1872 when it was \$1.43. The period of lowest prices have thus been nearly always the last quarter of the year, in September, October, and November, for during the present year also it has continued to fall till the same months. The periods of greatest fluctuation in the price of wheat have thus been ones of nearly three years, suggesting climatic changes of the same character.

The Course of the Market

During the whole period under review has been as follows—upwards in 1857 and the beginning of 1858, declining steadily during the Fall of the latter year and through 1859 and 1860, recovering itself in 1861, declining again in 1862 and 1863, rising suddenly in 1864, and holding firm till the new crop of 1865; then falling as suddenly, and remaining depressed till 1867, rising in 1868, falling in the latter part of that year, and in 1869 and 1870, rising again in 1871 and falling in 1872. Taking year by year, the highest prices have nearly always been obtained in the first three months of the year, and the lowest in the months of September, October and November; but this order of things has been sometimes changed; in 1864 the lowest prices were at the beginning of the year but they continued to rise till its close; in 1857 they were highest in April, May and June, and rose to the end of the year, and in 1872 there were two rates of highest prices, one in April, May and June, and the other towards the end of the year. Throughout the whole series, March has been the month in which most frequently high prices occurred, and September those in which low ones occurred.

The Conclusion,

To be naturally drawn from the table is that prices this year ought now to rise, and they probably would were it not for the great harvest yield, and the keeping back by some farmers of their wheat crop. So that it is almost impossible to predicate with certainty the future course of the market. It is, however, safe to say that there will be no marked rise.

Wheat in Drills.

Will not some few of our wheat growers who are able to put in their thousands of acres annually, devote a few acres to the simple experiment of drilling in the seed at a distance of 20 or 24 inches, room enough to admit a horse and cultivator between the rows, and give to the wheat thus drilled a spring culture with a cultivator that shall destroy the weeds and mellow the soil; going over a part of the field once, and a part of it twice and make careful note of growth and yield.

If it is found that the yield is positively doubled by this method of culture, then can we raise the same amount of wheat on half the land we are now devoting to that crop and at a great saving of expense. Spring culture of wheat by hand hoeing is practiced extensively in most of the countries of Europe, and we believe the same practice here, performed with horse power and proper cultivators, can be introduced with profit.

Freight Rings.

It is perhaps unfriendly to charge upon the owners of railroad and steamboat lines throughout the length and breadth of our country anything like a grand system of extortion by which the agricultural products of the country are made second in interest to that of their transportation to the world's markets; and yet it would appear to be so. Combinations of capitalists' "rings" buy up entire trunk lines of railroads with all their tributaries, and then put up the price of freights until the cost of getting the grains to a market eats up the entire profit and much of the actual cost of production; and yet it costs no more to transport a bushel of grain this year than last.

We had supposed that California was almost the only State in the Union suffering from these ruinous freight charges; we had supposed that throughout the northwestern States competing lines of railroads, lake and river transportation would act as a check upon unreasonable extortion in freights; but we learn that it is not entirely so, for the *Chicago Tribune* puts in the following protest against this:

Upward Tendency in Freights.

"It is becoming a serious question what is to be done with the grain products of the country. During the last sixty days, there has been a general advance in the rates of freights all over the country, and the effect is crushing upon those who produce the lower priced varieties of grain. This advance has not effected the wheat growers so much, because there is comparatively very little wheat going forward. This is, however, accidental. As an illustration, let us give some figures.

The cost of moving corn from a point 100 miles distant from Chicago, by the way of the lakes and Erie Canal, including the intermediate charges to New York, is 41½¢. This does not include any charge or profit in that city. The price of corn in New York is 65¢. Allowing 3¢. per bushel to cover profits and expenses in New York, there is left to the producer just 21¢. per bushel for his corn.

In oats the case is even worse. It costs to deliver oats from a point like distant from Chicago, in the boat at New York 31¢. per bushel. Oats are selling in New York at 40¢@44¢. If 2¢. per bushel be allowed for expenses and profits in New York, there is left to the producer 6¢. to 10¢. per bushel for his oats at the place of growth.

Of course, there is a limit beyond which wheat, corn and oats cannot be transported, except at a cost equalling or exceeding the value of the article. The rate of freights on oats has almost reached that point now. They may be still further advanced until they prohibit the transportation of corn, and even of wheat.

The present freight charges to New York are nearly double the average rates of last year, and the advance in freights is of necessity taken from the price of the grain in the hands of the producer. The rise in domestic freights is in sympathy with the advance in ocean freights, but the oppression upon the producer is none the less severe. It consumes their product. It is no longer a case of sending one bushel to pay the freight of another; that operation no longer pays. The producer, if freights go any higher, or the price of grain should fall in Liverpool, will have to send some money along, in addition to the corn, to pay the freight on the latter."

A Change Necessary.

We are getting to be strongly of the opinion that in just one thing, three or more of the monarchical governments of Europe are in advance of us. The governments own the railroad and telegraph lines, and transmit freight and telegrams at rates just sufficient to keep their respective lines in good order and pay expenses. Then the agriculturist gets the full market value of his products without suffering extortion from freight "ring" combinations. But as we can never live under such a government, and as our own is powerless to bring about such an order of things, the only redress we can obtain is to cut loose from the politicians of the country and take its political management into our own hands through the medium of Farmers' Clubs.

As it now is, railroad kings and capitalists, "ring" in upon politicians, and they in turn "ring" in upon the hard working yeomanry of the country, who allow themselves to be wrung out of their hard earned profits, merely because they will support this or the other political party gotten up and controlled by the same "rings" that perpetrate the extortions under which we are suffering.

DOUBLE EAGLES.—In further answer to "Subscriber," in relation to Double Eagles, we remark: The Act authorizing the coinage was that of March 3rd, 1849; their coinage followed immediately after, in 1849, at the Philadelphia mint. Their first coinage in California was in 1854.

Seed Time Approaching.

With most soils that admit of plowing at any season of the year, the plow is already at work. A large area of land having carried but one crop of wheat will be "dry seeded," for volunteer. For our numerous Eastern readers we remark that, "dry seeding," is the seeding of land either from the grain shelled out in the process of harvesting called volunteering, or by seeding anew, and plowing or harrowing in the same, while the land is yet dry, and with no expectation of growth till the recurrence of autumn or winter rains.

It simply enables us to put in thousands of acres at small cost that could not be done were we obliged to wait till the rains come. It is usually done with gangs of small plows or cultivators. We remark that many hundreds of acres of volunteer in different sections of the State are already "dry seeded" and thousands of acres of new fallow ground are being thus prepared ready for the rains.

We cannot too urgently press upon the attention of farmers the importance of sowing only the very best seed their money can procure. The different Fairs throughout the State have given farmers the opportunity of seeing the advantages of seeding and breeding from the best; and no one should fail to profit by it.

Those having superior seed of the most approved varieties of grains should lose no time in making the fact known by judicious advertising, in a paper that will reach the class of men who alone are or can be profited by it.

Tulare Valley.

This section of country embracing a large part of Tulare and Kern Counties, and watered by numerous streams flowing westwardly and northwardly into Tulare Lake, has been to a great extent almost a *terra incognita* to all but the drover and stock grower, from the first settlement of the State till quite recently. Now, however, as the railroad is being pushed into the very heart of Tulare County, we find the grain-grower plying his vocation, establishing homes with all the adjuncts of civilization at so rapid a pace that we can hardly keep up with the real condition of progress.

Visalia, its principal town of importance, is one of those interior places that without any connection with the outside world to promote its commerce and business, except the four-wheeled "Prairie Schooner," of the great Western plains, has nevertheless been a place of steady and healthy growth, and is destined always to be one of importance to that section of the State, although the main trunk of the present railroad passes a few miles to the westward.

It is the dispensing point of business and trade with the mines of the interior and is surrounded with one of the best agricultural districts in the whole State. It is better adapted to a system of comparatively inexpensive irrigation than any other of equal extent within our knowledge. The climate is all that can be desired for successful grain growing, whilst for cotton, oranges, olives and raisins, the principal part of Kern and Tulare Valleys is not surpassed even by the more southern counties of Los Angeles and San Bernardino.

The rapid completion of the railroad is giving new impetus to business and lands that have heretofore been looked upon as nearly valueless on account of their remoteness, are now being sought and located with a rapidity highly encouraging even to the immediate future. And yet it doubtless still offers better inducements to the settler than perhaps any other section of the State at this time. The future of Tulare Valley is full of promise to the agriculturist.

FULL-BLOODED DURHAMS.—Dairymen are giving more attention to this breed as milkers than formerly, and particularly where the object is, a few very choice animals instead of a large herd, to produce a given quantity of milk. Dr. E. S. Holden, of Stockton, is a grower of pure Durham cattle, and out of his fine herd recently advertised in the *RURAL*, has sold three white, yearling heifers, Fawn, Daisy and Blanch, to J. K. Jewett, of Petaluma. We hope he will distribute largely of his improved stock among our dairymen.

ALMONDS.—L. B. Abernathie, who takes the *RURAL*, wants to know where he can obtain trees of the *Princess Almond*. Can any of our nurserymen supply him with this variety?

Wool Circular.

We have received Walter Brown & Son's monthly wool Circular of October 1st., from which we extract as follows:

It was generally expected throughout the Wool trade, that with the month of September would come a decided improvement in all departments of the business. But the month has come, and gone, without materially relieving the dull monotony of the market, or positively foreshadowing any real change for the better.

Towards the close of the month a better inquiry prevailed, with increased transactions; but those who availed themselves of the opportunity to move some of their stock, did so by accepting prices so low that buyers might reasonably express surprise at the apparent weakness of the market.

The desire of some holders to effect sales has contributed largely towards unsettling prices, and establishing a lower range of values than were current at the beginning of September.

Without this single feature, it is likely the market would have ruled steady, and prices have been no lower at least. Seemingly, it would require but a short period of steady activity to restore the market on a settled basis. Such an event would relieve the pressing wants of some, who, owing to the long continued dullness in trade, are compelled to realize at this time.

The disparity in the values of woolen goods and wool, long claimed by manufacturers, now scarcely exists with raw material at present prices, and a general firmness in the wool market would improve the chances for an early return to the usual volume of business.

California Wools.

By making further reduction in prices, some large sales have been effected. Most holders are anxious to dispose of their stocks, but have not generally accepted the situation. The assortment is full.

Foreign wools have been less active, but there has been no material change in prices. A further advance is reported at the London sales now in progress, making a total rise since the opening of the present series of from 1½d to 2d.

We quote California and other wools as follows:

CALIFORNIA.	
Spring Clip, fine.....	33 @ 40
Spring Clip, medium.....	33 @ 38
Spring Clip low grades and burry.....	27 @ 30
Fall Clip, A 1.....	23 @ 27
Fall Clip, low grades and burry.....	20 @ 23
TEXAS.	
Fine.....	35 @ 40
Medium.....	35 @ 40
Low.....	25 @ 33
Inferior.....	23 @ 27
Very burry.....	20 @ 24
FOREIGN WOOLS.	
Cape of Good Hope.....	36 @ 40
Buenos Ayres Merino and Mestiza.....	30 @ 35
Montevideo Merino and Mestiza.....	37 @ 43
Australian Clothing.....	50 @ 56

Kern County Cotton.

We have received from W. G. Allen Jr., Bakersfield, three samples of cotton the growth of the present year. There are three distinct varieties, the Dixon the Texan and the Golden Prolific. There is nothing more needed to establish the fact that we are a cotton-growing people; and because we are, and with a climate proven to be second to none for cotton production we are from this time on to be made rich by the extension of this one industry.

This remark of course applies to those particular sections of the State where soil and climate or immunity from frosts, permit its culture. The growing of cotton is an industry that employs a large number of hands, in the preparation of the ground, the sowing of the seed, the culture of the crop, to the final picking of the cotton from the bursting bolls, is a business full of industry, and yet comparatively light and in laborious.

It is a crop that comes in admirably along with the culture of hops, both as regards the hand culture and the final picking, the hop crop being entirely secured just immediately before the cotton picking begins; so that the hands required for the former need not be discharged before commencing on the latter. And though a large number are required where the crop is large, there is a satisfaction in knowing that the crop will surely pay.

Nothing can secure to our farmers so perfect an independence as the culture of a variety of farm crops, giving a more constant employment to farm hands and to more of them, than a single crop, as of wheat alone can possibly do. Instead of raising all wheat at one or two cents a pound, grow prunes that will bring from 6 to 8 cents, raisins 10 cents, and cotton 15 to 20 cents a pound, and then if one crop fails, you have something to fall back upon better than bankruptcy.

Improved Piano.

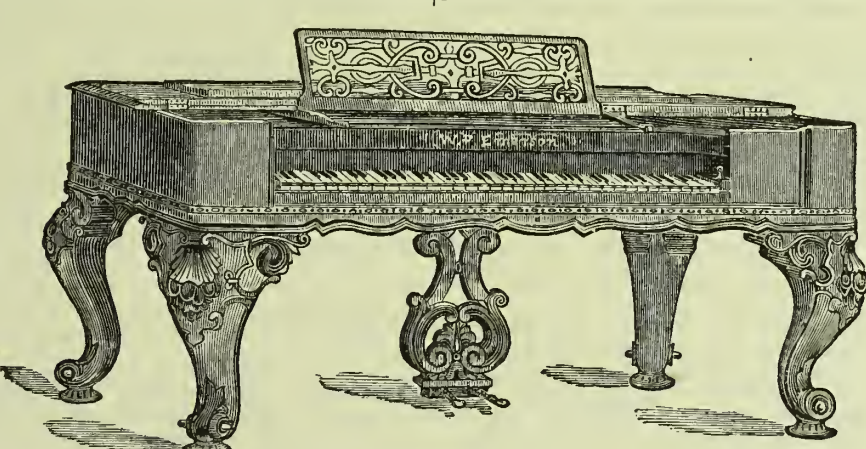
Whenever or wherever we see a valuable improvement, whatever branch of industry it may happen to represent, we are pleased to bring the same to notice, particularly when the public generally, as in the present case, are so largely interested.

During the past week we had the pleasure of examining what may well be termed one of the greatest achievements of the age in the piano line.

At the present day no house is well furnished without a piano, and no young lady's education complete without being able to play the same; but to be able to gain a thorough education in music, and then to buy a good piano, is in many cases too great a tax, consequently a poor instrument is purchased because it is cheap, and the attempt made to learn to play upon the same, which in nine cases out of ten of course proves a failure, as no one can be well educated on a poor piano. Therefore to find a good instrument at a low price has long been the great want of the public; this want we believe has been fully met by the manufacturers of

"The Emerson Piano."

A more complete and thorough piece of work it has rarely been our pleasure to examine. The case is of rosewood, and has four round corners, the back being finished like the front, (a great convenience, giving opportunity to place the piano with either back or front towards the center of the room) has over dam-



THE EMERSON PIANO.

pers, is seven octaves, over-strung, and has carved legs and pedal, and the tone and touch are in every way unsurpassed.

This piano is furnished at the low price of \$360, and full guarantee for five years, and can be found at the agency of Chickering & Sons, Kohler, Chase & Co., 633 and 635 Clay street, where we would heartily recommend all our friends desirous of purchasing pianos to call and examine.

Wheat, Good or Bad.

We are in the habit of advocating the sowing of the best seeds obtainable of all varieties of grains and vegetables, we are firm in the faith that "like produces—or has a strong tendency to produce like," and that if we want good wheat, we cannot take too much pains to procure the very best seed. But under the present system of buying, it makes but little difference what is raised so that it is wheat.

There are buyers in San Joaquin Valley the present season, that pay just the same for wheat of one variety as another, the same whether it is one-fourth broken in the threshing, and whether mixed with foul seed or not; and where they find a really superior wheat, unbroken and clean, will pay no more for it; because, say they, as we must mix it with other that we buy, we can get no more for it.

There have even been purchases of wheat made before the same was threshed, purchasers agreeing to pay a certain price per bushel without reference to quality. These facts, and they are patent, present but poor inducements for the wheat-grower to endeavor to excel in the product of his fields, so long as he sees the most slovenly cultivator obtaining the full prices paid to the careful grower for the best.

Wheat should be sold and bought in bulk, and carefully graded, and a better article than another should bring a better price; there would then be some encouragement for the farmer to try and excel in the quality of the product he puts upon the market.

The California State Fair.

Exhibition of Manufactures, Inventions, Etc.

[Continued.]

A BAG FILLER.—Mr. Wasson, exhibited for Wasson & Durgan, of Carson City, Nevada, a simply constructed bag or sack holder that seemed to us a meritorious article. It is readily adjustable for any sized sack. It is raised by levers when ready for tying and detaching, and can at any instant be shaken to solidify its contents. They can be sold for \$10 apiece, or less, are easily transportable and decidedly durable. Mr. W. offers rights for sale, but will in the meantime proceed to manufacture at once on this Coast. He has several other important and ingenious inventions which we may notice hereafter.

LATE ROSE POTATOES.—Chas. H. Dwinelle exhibited the first Late Rose potatoes raised in Cal. to our knowledge. They were very fair and give promise of being an acquisition to our number of good varieties. Also samples of the Peerless potato; which variety is said to be well adapted to adobe soils in localities where other potatoes will not grow well. The seed were obtained from the East through the PACIFIC RURAL PRESS. A small quantity of the Late Rose are for sale at \$4 per pound, by C. H. D. of Oakland, to parties desiring them.

THE WAX WORK OF Madam Anna Gettz Lucas, of No 719 Howard St., S. F., we think will challenge world wide competition. We found her busy giving practical lessons in the manufacture of wax flowers. Her exhibit comprised a large variety of articles; we cannot do justice by description of any of her fancy fruit and flower pieces. No admirer of her beautiful as well as useful art will be disappointed by a personal interview and an examination of her work.

A perfect fac simile of a 7-pound pear raised in this State, is one of her fine pieces which we hope soon to illustrate in an engraving.

FLOWERS AND PLANTS.—Mr. O'Brien, of Sacramento, gave the largest display of flowering plants and ornamental trees and shrubs. The oleander is prominent in the gardens in Sacramento. Mr. O.B. showed a fine assortment of thrifty trees of the different varieties of this tree.

CHALLENGE MILL.—M. S. Bowdish, of Hawley & Co.'s hardware store, S. F., exhibited this superior mill for grinding barley, corn, oats, etc., however green, wet or dry, with ease and speed, without heating the feed or doing it other damage. It is essentially a mill for domestic use and economy. Quite a number have already been sold on this coast.

CAR COUPLING.—We examined with interest Jas. Pearson's car-coupler, an invention calculated to save labor and life in coupling and uncoupling cars.

PATENT PUNCH.—This punch was patented through the agency of Dewey & Co., by D. A. Falkner, S. F. It is especially desirable for plow and carriage manufacture. As a California invention it is of value enough to support its manufacture here, and we recommend its early introduction East.

AUTOMATIC CAR COUPLING.—J. A. Leaman exhibited his improved automatic car coupling, which we shall probably illustrate in a future number.

GLASS WORKS.—The San Francisco glass works exhibit specimens of white and colored glass, etc., making a fine display of home manufactured articles. Their hanging plant baskets, entirely of glass, were particularly attractive.

UNIVERSAL GLAZING TOOL.—A rotary glass-cutting instrument, of carbonized steel, equal to, and in many respects better than a diamond, is meeting with an extensive sale. The City Novelty Company, San Francisco, has the sole agency for the Pacific Coast.

In connection with its exhibition at the Pavilion was the circumstance of its developing a remarkable talent in young Charlie Weinreich, of Sacramento, who after a few hours application to the use of the instrument, became singularly expert in its management, attracting general admiration.

INFALLIBLE YEAST POWDERS.—There was a conspicuous display of this compound by Bow-

en Brothers, S. F. It is a class of articles used more in California probably, than in any other section of our country.

ALTO RELIEF TOPOGRAPHY.—Chas. W. Hendel, St. Louis, Sierra Co., exhibited a beautiful specimen of relief topography of portions of Plumas and Sierra counties, showing the corresponding high of the ranges of mountains, the depth of cañons and ravines on each side of State creek. Also Bald Mountain, Table rock and the ranges connecting with Pilot Peak; the worked ground at La Porte, Gibsonville, Newark, Potosi, Howland Flat, Pine Grove, Chandlerville, St. Louis, Gardners' Point, Port Wine, Scales Diggings and other intervening and adjacent places, showing also the Blue Lead channel wherever developed; the different formation of rock, the beds of tailings in the creek, and the denuded bed rock being denoted by different colors. We wish Mr. Hendel would send us a photograph for making an engraving of this fine piece of work.

FRUITS.—The exhibit of fruits at the Fair this season was unusually extensive in quantity, and fine in quality. It was unfortunate, however, that this exhibition was so late in the season that most of the fruits in the earlier portions of the State, such as Pleasant Valley, Valley of the Putah, etc., could not be represented, as their best fruits was out of season—had all been gathered and disposed of weeks before. So that the best display of peaches, early pears, grapes, etc.—and there was splendid specimens—were from the region of the foothills, where the season is later. In the grape department there was an unusually fine display, notwithstanding its drawbacks we have alluded to. The prize for the largest assortment was awarded to J. R. Nickerson, of Lincoln. H. T. Hutchinson of Marysville, also had a very large and choice assortment, and was awarded the first prize for the best and greatest variety of table grapes. There was some confusion in the naming of grapes—a single variety often had two or three names—as the Rein de Neice, Flame Colored Tokay, Lombard, all the same grape with these different names. There were also some choice varieties from Ira S. Bamber, Folsom; J. Rutter, Folsom; Monson Yerxh, Sacramento; W. L. Willis, Elk Grove; P. H. Murphy, Brighton; Robert Chalmers, Coloma; R. B. Bowers, Woodland; E. F. Aiken, Glen Gardens, Sacramento; Geo. H. Kerr, Elk Grove; G. W. Thelkel, Placer county. There were also some fine specimens of dried fruits, also jellies from various kinds of apples. The display of raisins was not equal to our expectations, but taken together the exhibit was creditable to California fruit growers.

Deep Cultivation of the Soil.

What are the advantages of deep cultivation? The farmer gains by it a larger amount of soil, into which the roots of his plants can penetrate more deeply and spread out. Many farmers object, that the agricultural plants do not send down deep roots, and hence the trouble and expense of deep plowing are useless. But the plants will send down their roots deeper, if the lower layers of soil are loosened. Then they will have strong and full stalks and give rich crops.

Long spells of drought or of rain are not so injurious with deep cultivation as when only the surface of the soil is loosened. The water penetrates the ground and is more completely utilized. Lasting rains and thaws wash the ground and carry away the valuable parts, or the standing water, unable to penetrate the solid under-ground, destroys the seeds and diminishes the yield, when deep cultivation is not employed. On the other hand by loosening the ground to a proper depth, a larger supply of moisture is obtained against dry seasons.

Deep cultivation ensures the admission of air, moisture and warmth to the plants; gives stronger roots and stalks, so that the crops can better stand up against winds and storms.

But the farmer must change from shallow to deep cultivation gradually, plowing his land only an inch or so deeper each year until the proper depth has been attained. Else the masses from the lower layers of soil, not having been properly exposed to the healthful action of air, frost and rain, will injure his land for a time.—*Wchbt. f. hd. in Tw.*

Utah Wheat.

This is said to be about equally as fine quality as California wheat. We learn from Mr. Wm. J. Jennings, a late merchant in Salt Lake City, that over 1,000,000 bushels surplus was raised in the Territory this year. The producers have unitedly contracted for its transportation by the railroad on private terms to St. Louis, Mo., where it has been sold at remunerative prices. When California farmers cooperate as effectually in the transportation and direct sale of their produce as the Utah people have, they will get something like satisfactory prices. The Zion Mercantile and Industrial Company transacted a business of over \$8,000,000 the past year.



Growing Old.

Ah me! How fast the years go on,
The gray hairs mingle with the brown!
And yet these whitening hairs should be
A chain of silver links to me,
Forged by the gentle hands of love,
To lift my earth-bound heart above!

Sadly I watch the fires burn low,
Which in those dimmed eyes used to glow;
But courage heart! When falls the night,
Then hidden stars reveal their light!
Shall not my soul, heaven-lit within,
Gleam brightly out, though eyes grow dim?

How fast Time's ruthless fingers trace
The lines and furrows in my face!
Yet, though the world finds written there
Only decay and age and care,
Set in my forehead let me see
God's seal of immortality!

God can take from me all my store,
Yet leave me richer than before!
Trustful, through life His hand I'll take,
And Time's sad changes he will make
My stepping-stones to that blest shore
Where change is gain and time is o'er.

Boys Wanted.

There are no boys now. So there can be no more men. We have lads and young masters, but no boys. Years ago, when America could boast of statesmen, there were boys all over the country. Rugged, lively, ambitious boys. They played horse, rode down hill, kissed the girls, broke colts, traded jack-knives and were well hooted at when cheated. They husked corn, gathered butternuts, picked apples, took care of cattle, did chores for their board while going to school, cut cord-wood, trimmed apple trees, plowed corn and worked their way to manhood.

They knew how to sharpen fence-posts, shear sheep, milk cows, kill hogs, clear lands, cultivate farms and work their way to honorable manhood. When they became men they did not fade like sixpenny curtain calico, but came from each sudsing and rinsing in the school of experience better and braver men. They were born to labor, and thus ticketed to success. They grew up hardy, handy, reliable and useful. Of such boys great orators, ministers, doctors and editors were made. Such boys were loved by good girls, became good husbands. Some of them perhaps smelled of the furrow, the barn or the workshop, but that was better than to smell of hops, resin, fusil oil, creosote, and whisky, as now is the fashion.

These boys became men. They had good muscle and excellent sense. They were not afraid of poverty; not afraid to work; not ashamed of poor friends or ragged relatives, for they were men in miniature. They had sense, pluck, honor, manhood and the basis of success. Their fathers were proud of them. Their mothers warned them with slippers and with their love. Their sisters were fond of them, while their sweethearts never thought them regular attendants of places of dissipation.

There were boys in those days.

But now the boys are scarce. It is not fashionable to be a boy. Lads, masters, young gentlemen. Stout Anglo-Saxon drawn down to a sickly lisp. Kid gloves, patent leather boots, ruffled shirts, cigar-cases, private billiard cues, Sundaysprees, paper collars, "girls," wine suppers and doctors. It is not the thing to work as boys did years ago, when boys tanned woodchuck skins, then rubbed them down thin and solid for whip-lashes. That rubbing is what did the work. The experiences of life which force facts into young souls and the eyes are the great teachers.

Men come from sterner stuff than this hot-house, petted, blanketed, superficial make-up men give their sons. The time was when boys swung flails, axes, crow-bars, beetles, mauls, and sledges. When they herded cattle, turned the soil, thought, studied and worked their way into the harness of life till it fit them easily, and they could work to advantage.

Fashion has taken the helm now. Boys must be petted until they are spoiled as tomatoes are ripened in windows until they are rotted. The boy now must be waited on. The old man must get up in the morning and build a fire, or wait at night to keep the house open till the young gentleman returns from the faro-bank or billiard-room. The old father must work, and the aged mother may weep, but the gay chap will have his clothes, jewelry and mustache salve, his nights out, and headaches in—for must he not keep up with other young men?

He must have his horse and cutter, or fancy team. His allowance and private circle of friends, it is not best for his parents to know, lest his chums think him off color. He grows up to be a sporting man, a politician, an office-holder, a defaulter, a hanger-on, if not to a rope, to the coat-tail of the society which tickled his infancy and damns his failure. He came from birth to manhood without being a boy. He is undeveloped, and instead of being a useful man, becomes a rusty button on the string of failures.

Give us more boys. The good old kind of brave, plucky, working, thinking boys. The demand for them, and for the great men they make, is increasing.—"Brick" Pomeroy.

A WORD OF PRAISE.—The successful encouragement of the best traits in children is acknowledged by all to be an exceedingly difficult task, yet a judicious word of praise now and then, often renders it easier—for continual severity is quite as hurtful in its effect as unwise indulgence. Some parents are so afraid that a child will grow vain that they never praise him, and this course is often disastrous. It is apt to produce either too much self-assertion—for self-assertion is a legitimate out-growth of the withholding of commendation to which one is entitled—or to engender a self-distrust or melancholy hopelessness of disposition. Praise is sunshine to a child, and there is no child that does not need it. It is the high reward of one's struggle to do right. Thomas Hughes says that you can never get a man's best out of him without praise. Many a sensitive child, we believe, dies of a hunger for kind commendation. Many a child, starving for the praise that a parent should give, runs off eagerly after the designing flattery of others. To withhold praise where it is due is not honest, and, in the case of a child, such a course often leaves a stinging sense of injustice. Motives of common justice as well as the regard for the future of the child should influence the parent to give generous praise for all that deserves it. Of course there is a difference in the constitution of children. Some cannot bear so much praise as others, and some need a great deal. A knowledge of their different dispositions will help to decide the just portions of praise which may safely be accorded to each.

SLANDER.—Yes, you pass it along, whether you believe it or not; and that one sided whisper against the character of a virtuous female. You don't believe it but you will use your influence to bear up the false report and pass it on the current. Strange creatures are mankind. How many reputations have been lost by surmise. How many hearts have been made to bleed by whispers. How many benevolent deeds have been chilled by the shrug of a shoulder. How many individuals have been shunned by a genteel, mysterious hint. How many chaste bosoms have been wrung with grief with a single nod. How many graves have been dug by false report. Yet you will pass the slander along. You will keep it above the water by a wag of your tongue, when you might sink it forever. Destroy the passion for tale-telling we pray. Liss not a word that may injure the character of another. Be determined to listen to no story that is repeated to the injury of another, and as far as you are concerned, the slander will die. But tell it at once and it may go as on the wings of the wind, increasing with each breath, till it has gone through the State, and have brought to the grave one who might have been a blessing to the world.—*Benton Herald.*

If the father wishes to give his son a legacy that will endure him while life exists, let him send him to an institution where he can obtain a general practical business education, and he will have the satisfaction of knowing that he has given him that which is better than houses, lots or farms, or even gold and silver; these may take wings and fly off suddenly, but this knowledge will endure while life and reason exists.—*Horace Mann.*

Respect Old Age.

There, give him all the path. Tread slowly and reverently in his presence. Hush that rude laughter; check that idle jest. See you not upon his temples the snows of many winters? See you not the sunken eye, the bowed form, the thin hand upon whose surface the blue veins stand out like chords? Gone are the beauty and strength of manhood; and in that faded eye but little light is left, save that of love and kindness. That voice has lost its music, save the soft undertone of affection.

Sit down, young friend, and hear that story of olden time; and if, in looking far backward into the mists of the past, he sometimes forgets—sometimes confounds dates and incidents, or tells the same old tale for the twentieth time, think over what a vast, vast field his laboring memory wanders. Think over what a checkered web of events thought takes her beaten track, down into the depths of years. O, the joys and sorrows, the hopes and disappointments, the anxieties and wrongs, and sufferings he rouses from their dreamy beds, as he "fights" life's "battles o'er again."

"And scenes long lost, of joy and pain,
Come wildering o'er his aged brain."

Standing upon the boundary line between life and the untried future, his feet turn backward into the paths of the past. One moment he longs for rest—the next come back the mocking memories of departed joys. The thorns have dropped silently away from amidst the leaves of the roses he gathered in childhood and youth—their beauty and fragrance alone remain.

O, you in whose bounding veins young life yet lingers, and you in the full beauty and vigor of manhood, respect the aged. Speak gently, hush the rude laugh, check the idle jest, listen to the wisdom which is the voice of experience. Cheer him with kindly words, encircle him with your strong arm, and lead him as he descends the Western hill of life, the shadows deepening into night—the white hairs upon his temples already drifting in the cool breeze which comes up from the valley of death.

Honor the Aged, that he may leave you his blessing, on the threshold of the unknown land. Honor him, and God will raise up for you friends to remove the thorns from the last league of your own life-journey; for the sake of the weary one of long ago, who never wept for your ingratitude; whose bowed form never struggled with a weight of care or grief which you might have carried, while you walked carelessly along, intent upon your ease or pleasure.

Honor the Aged, for *his* sake who was old before the world was—whose life is from everlasting to everlasting.

Honor him that feebly walketh
With his staff; the white haired sage;
God will curse the wretch that mocketh
Hoary hairs, with slighted age.

HOURS FOR RECREATION.—No one should study hard within half an hour of a regular meal. The time for profitable and efficient study is in the early part of the day, certainly before noon, because sleep is the rest of the brain; and while it is thus resting, nature is depositing new particles upon which it is to feed the next day. To engage in severe study in the after-part of the day leads to an injurious exhaustion, over-straining of the brain, and is as unwise as for a man to engage in hard work at sundown, when the strength of the body has already been used up in the ordinary occupations. The best time for recreation, as to body or brain, is the after-part of the day when the main business of life has been attended to; thus resting the working faculties, while exercising those which have been idle; thus giving occupation each day for the whole man.

A BEAUTIFUL EXTRACT.—There is, whose deep vein has only just begun to throw up its silver drops among mankind—a fountain which will allay the thirst of millions, and will give to those who drink from it, peace and joy. It is knowledge; the fountain of cultivation, which gives health to mankind, makes clear the vision, brings joy to his life, and breathes over his soul's destiny a deep repose. Go, and drink therefrom, thou whom fortune has not favored, and thou wilt soon find thyself! Thou mayest go forth into the world, and find thyself everywhere at home; thou canst cultivate in thine own little chamber; thy friends are ever around thee, and carry on wise conversation with thee; nature, antiquity, heaven, are accessible to thee! The industrious kingdoms of the ant, the works of man, and rainbow and music records, offer to thy soul hospitality.—*Frederika Bremer.*

Young Folks' Column.

You Will be Wanted.

Take courage, my lad. What if you are but an humble, obscure apprentice—a poor, neglected orphan—a scoff, and a bye-word for the thoughtless and gay, who despise virtue in rags, because of its tatters. Have you an intelligent mind, untutored though it be? Have you a virtuous aim, a pure desire, and an honest heart? Depend upon it, some of these days you will be wanted.

The time may be long deferred—you may grow to manhood, and you may even reach your prime ere the call is made; but virtuous aims, pure desires, and honest hearts are too few and sacred not to be appreciated—not to be wanted. Your virtue shall not always hide you as with a mantle—obscurity shall not always veil you from the multitude. Be chivalric in your combat with circumstances. Be ever active, however small may be your sphere of action. It will surely enlarge with every movement, and your influence will have continued increase.

"In the world's broad field of battle,
In the bivouac of life,
Be not like dumb driven cattle,
Be a hero in the strife."

Work on, for surely you will be wanted, and then comes your reward. Lean upon the sacred verity. "I have never seen the righteous forsaken, or his seed begging bread." Never despair, for the lives of great and good men abundantly testify that when clouds are blackest, and the tempest is fiercest, and hope is faint, a "still small voice" will be heard, saying, "come up higher, you are wanted," and all powers will find ample employment. Therefore, take heart, young men, for ere long you will find that you will be wanted.

"Don't Give Up; But Try, My Boy; Try."

A gentleman, traveling in the northern part of Ireland, heard the voices of children, and paused to listen.

Finding the sounds proceeded from a small building used as a schoolhouse, he drew near, and as the door opened he entered, and listened to the words the boys were spelling.

One little fellow stood apart, looking sad and despondent.

"Why does that boy look so sad," asked the gentleman.

"Oh, he is good for nothing!" replied the teacher. "There's nothing in him. I can make nothing of him. He is the most stupid boy in school."

The gentleman was surprised at this answer. He saw that the teacher was so stern and rough that the younger and more timid were nearly crushed. He said a few kind words to them; then placing his hands upon the noble brow of the little fellow who stood apart, he said;

"One of these days you may be a fine scholar. *Don't give up; but try, my boy; try.*"—*S. S. Messenger.*

The soul of the boy was roused. His dormant intellect awoke. A new purpose was formed. From that hour he became studious and ambitious to excel. And he did become a fine scholar, and the author of a well known commentary on the Bible; a great and good man, beloved and honored. It was Dr. Adam Clark. The secret of success is worth knowing; "*Don't give up; but try, my boy; try.*"—*S. S. Messenger.*

WHEN THE DARK COMES.—A little girl sat at twilight in her sick mother's room thinking. All day she had been full of fun and noise, and many times worried her poor, tired mother.

"Ma," said the little girl, "what do you suppose makes me get over my mischief and begin to act good just about this time every night?"

"I do not know, dear. Can you tell why?"

"Well I guess it's because this, when the dark comes. You know I am afraid of that. And thou, ma, I begin to think of all the naughty things I've done to grieve you, and that perhaps you might die before morning, and so I begin to act good."

How many of us wait till the dark comes, in the form of sickness or sorrow, or trouble of some kind, before we begin to act good!

CHILDREN, we have a capital rule to give you about fretting and grumbling—a very short rule, which is worth your while to recollect, if you want to cultivate contentment. Never fret about what you can't help, because it won't do any good. Never fret about what you can help, because if you can help it do so. When you are tempted to grumble about anything ask yourself, "Can I help this?" and if you can't, don't fret; but if you can, do so, and see how much better you will feel.

Nothing that is truly great can ever be altogether borrowed; and he is commonly the wisest, and he is always the happiest, who receives simply and without envious question whatever good is offered him, with thanks to its immediate giver.

Oregon State Fair.

SALEM, October 3, 1872.

The weather has been very favorable for holding the twelfth Annual State Fair of Oregon. The attendance to-day is fully 10,000 people, and the receipts amount to \$7,975 in three days. Thursdays and Fridays are always the days on which there are the largest number of people present. This has been more of a farmers' fair than any former one in attendance and interest. The management has been more satisfactory, and the co-operation of leading farmers more effectually secured, than ever.

Exhibition of Cattle.

The exhibition of cattle was the largest and best ever seen at the State Fair. S. G. Reed, of Portland, Washington County, had 16 head of as good blood as Canada and Great Britain could produce, including his famous bulls "Governor General," "Central Pacific," "New Year's Day," and Ayreshire bull "Earl of Lorn," with a form as beautiful as a deer, and his celebrated cows, "Acacia," "Honeysuckle," "Glossy Woodbine," "Pet Gwynne," "Phillips Gwynne," and "Phillhurst Rose."

B. E. Stewart & Sons, of North Yamhill, had a large representation of short-horns, including their fine three-year-old bull "Hannibal," and the year-old bull "Baron Bedford," also "Belle of White," a fine cow, and "Bonnie Bell," a beautiful heifer.

Henry Anthony exhibited his short-horned bull "Illinoise," a very fine animal. D. B. Crawford showed a powerful two-year-old graded Durham bull "General Sherman." J. W. Cochran exhibited his fine three-year-old Devon bull "Victor II." These are given as samples of what a column would not contain in details. The grand parade to-day of all the cattle that got prizes, on the large open grounds, was one of the finest sights of the kind ever seen in Oregon, and was witnessed with great interest by all classes.

Sheep—Hogs

Were never so well represented at any former Fair as at this one. A gentleman present from New Zealand told me that he never saw a better exhibition of choice breeds and pure blood. The favorite breeds on exhibition are the Spanish, French and American merino; Cotswold, Leicesters and Southdowns. Thom. Cross, J. L. Parish, John Minto, S. G. Reed, T. G. Taylor, James R. Camoren, T. L. Davidson and L. B. Frazer, are the principal exhibitors. Sales were freely made, varying from \$20 to \$50 for year-olds, and from \$100 to \$200 for choice two-year-old bucks.

The exhibition of swine was very extensive, and the herds of the best blood. S. G. Reed's pure Berkshire and Essex hogs; Thomas Cross' large exhibition of equally pure Berkshires, and J. L. Parish's Berkshires were universally admired.

Mr. Reed gets \$100 a pair for his three-months-old suckers, while common hogs of the same age only sell for \$10. So much for good stock when compared with inferior breeds.

Horses.

The entries of horses were unusually numerous. There were thirty-three stud horses alone on exhibition, besides mares with foals, and one, two and three-year-old fillies, as well as saddle, harness and farm horses; not less than one hundred and fifty in all. Several competent and experienced persons told me that this class of stock was never better represented at any former of the Oregon State Fairs. When brought out in classes for examination, and led around in circles, the sight was beautiful. This display of cattle, sheep, hogs and horses, in point of breed and blood, would do credit to any State in the Union, and is a true indication of the enterprise and progress of the leading farmers of Oregon in this important department.

Poultry.

The exhibition of poultry made a fine display. There were two hundred and fifty entered for exhibition, including the best breeds of the day in every variety. This part of the exhibition was very attractive to the farmers' wives. B. E. Stewart & Sons had the largest number and assortment of any exhibitor. They sold extensively at high figures. This firm deserves great praise for introducing at an early period and all along to the present time, choice breeds of cattle and poultry. They

are among the best and most extensive farmers in Yamhill county.

Fruits.

This department is always well represented at the State Fair. There was no falling off on this occasion. A. R. Shipley of Oswego, has a fine display of grapes, the numerous blue ribbons attached to his fruits tell how the judges appreciated them. He cultivated sixty varieties of grapes. S. Luelling excels in pears and apples. J. H. Lambert, H. W. Prettyman, P. M. Rineron, and others appeared to advantage in apples. W. P. Watson, and J. A. Miller, exhibit choice grapes. There are endless varieties of cured fruits, in every conceivable form, in which several ladies appeared to great advantage, and carry off many premiums. There is not on the Pacific Coast, to excel in size and quality, the green and dried peach, plum and German prunes, in which Seth Luelling and George Whaling and Co., of Oswego, prominently excel. The demand for the Oregon dried peach, plum and German prune is unlimited, and the cultivation profitable. No less so is the Royal Ann and Black Republic Cherry. In addition to the extensive cultivation of these choice fruits by the parties named, they and others will plant 5,000 more trees of the same kind this fall. Although this department of the exhibition is so well represented yet the fruit crop of the State, owing to an unusual frost in the early part of May, is a general failure this season. There is no part of this coast where fruits grow to greater perfection, under good cultivation, than in Oregon. While a large number of farmers have allowed their orchards to run down into mere "scrub," a respectable number are cultivating to perfection and building up handsome fortunes thereby.

FRIDAY, October 4, 1872.

The weather continues fine. Nothing could exceed the comfort of the atmosphere to-day. The attendance is at least 7,000. The funds reached \$9,000 for the first five days. The Treasurer feels at ease in looking forward to the responsibilities of to-morrow—the pay day.

Vegetables.

The display of vegetables in the pavilion is unusually fine. We have never seen such a variety of elegant potatoes as is exhibited, such as the Early Rose, Early Flower, Early June, King of the Earlies, Peachblow, Climax, Late Rose, Kidney and Sweet Potatoes; parsnips, beets; sugar, winter and early tomatoes, carrots, parsnips, cauliflowers; squash, cabbage, kale, onions, melons and cucumbers in every variety of size and to the greatest perfection of cultivation. James Aitkin, J. A. Kemp, Mrs. Higley, W. H. Adair, P. M. Kinearson, R. A. Gesner, G. J. Fooley and D. B. Crawford are among the principal exhibitors and successful competitors in this department. There were a very large number that had small samples equally good in their line with those mentioned, but a detailed list would occupy too much of your space, and would serve no practical purpose. It is evident that Oregon is the place for raising choice vegetables.

Cereals.

Those who know anything about the agricultural productions of Oregon would naturally expect this department to be well represented at the State Fair, and so it is in every respect. Chile club wheat, white and red winter wheat, fall wheat, spring wheat, and buckwheat, in all their varieties, are well represented, and the reputation of the State eminently sustained in this department. It is equally so in oats, such as "Excelsior," "Side," "Surprise," and winter oats. There are also some fine samples of barley and rye. Beans and peas, grass seeds and flaxseeds are exhibited in great varieties. C. P. Burkhart, of Albany, Oregon, has a display of wheat and oats in great varieties, and cultivated to the greatest perfection of any farmer in the State. As he makes the raising of choice wheat and oats a specialty, we would recommend all enterprising farmers on the coast who want to know what prime wheat is, and what thorough cultivation can accomplish, to write to Mr. Burkhart for full information as to his mode of cultivation and for samples of his best wheat and oats. A farmer that can raise sixty bushels of wheat to the acre, that will weigh sixty-four pounds to bushel, is worth knowing. Better far to visit him at his hospitable residence, only three miles from Albany, and learn some valuable lessons on farming.

We were much gratified to see on exhibition several samples of very good potatoes, turnips, onions, pumpkins, squash, apples, fall wheat and side oats, from the

Indians on the Grand Ronde United States Reservation of their own cultivation.

Home Manufactures.

This is an important and interesting department and one that deserves every encouragement possible by every friend of the State. Agriculture and manufactures should go hand in hand. We are glad to herald progress in this line also. Cunningham & Co., of Salem, are making the Bowie wagon, light farm wagons, carriages, buggies and cultivators equal to the best imported. William England, of Salem, is very successful in the same line. Van Wagner & Co., of Salem, make a fanning mill for cleaning all kinds of seeds, of great value to all farmers, for which he gets from \$35 to \$40. A. Ellison, of Salem, is making buckeye, gang and walking plows extensively. T. H. Lucas, of Polk county, is equally successful in making a challenge plow. J. H. & S. Robins, Bethel, Polk county, are making threshing machines, for which they are getting \$350 for the separator.

The Oregon Agricultural Works, at Salem, exhibited the Hubbard mower, and the combined reaper and mower that embrace all the modern improvements, and have the reputation of being the best machines of the kind in the United States. The former is sold at \$125, and the latter at \$250. They are going to manufacture Lafell's double turbine water-wheels, and a great variety of agricultural implements.

The Oregon Iron Works, Portland, and Myers, Brothers, of Salem, exhibited beautiful samples of stoves of their own manufacture. The former got the first premium and the latter the second premium.

The Oregon Wooden Ware Manufacturing Company, at Oregon City, exhibited splendid samples of pails and tubs made of native cedar, pine and ash, and Sitka white cedar. So superior are these to all others seen on the coast or imported, that the Board of Managers, at a special meeting yesterday evening, voted the company a gold medal. This is a deserved compliment to the enterprise of the company. They intend to manufacture every kind of work that comes under the head of wooden ware.

A. B. Wait, of Salem, has patented a portable hay press of great beauty and of still greater utility. Enterprising farmers, who know how to economize time and money, should communicate with Mr. Wait and get full information about this press; they will not regret doing so. There are endless varieties of churns, washing-machines, pruning shears, ax-handles, harness and leather, all of Oregon manufacture.

From what we have seen of home manufactures at this fair, and what we know of the many others in the State not represented on this occasion, we infer that the time is not far distant when the importations of agricultural implements, house furniture, woolen goods, etc., will be reduced to very small dimensions. This is one of the encouraging signs of the times for Oregon. We have reported at some length on this subject, because we think it of great importance that every State in the Union should aim to be self-sustaining as far as possible in her leading wants and necessities. *Encourage home manufactures* should be the watchword of every lover of his State and country.—*Cor. Bulletin.*

PRINTING FROM PHOTOGRAPHS.—A method of printing from photographs adopted in Prussia consists in the employment of a sensitive film of gelatine containing bichromate of potash. This film is spread upon thick glass, and after exposed in the camera in the usual way, the photographic image is fixed by liquid ammonia. The picture is invisible until the inking roller has passed over the glass plate, which may be printed from much the same way as a lithographic stone. About 5,000 impressions have been taken from a glass plate prepared in this way, the plate being in all cases strong enough to be capable of being passed through the press without injury. The process has been adopted at Krupp's works in Essen.—*Am. Manufacturer.*

MITCHELL COUNTY, Kansas, according to a correspondent of the *Waterville Telegraph*, pans out a petrified sea animal fifteen feet long, and another that measured twenty-two inches between the eyes the body of which is about three feet in diameter, and to show that that field was appreciated long ago, a field hoe has been found forty feet below the surface, imbedded in solid rock.

The Collectors of Customs have been directed by the Treasury Department to suspend the importation of neat cattle and hides coming from infected districts of Europe, unless accompanied by a consular certificate showing that they are free from disease.

What is Said About Coffee.

The coffee tree came originally from Africa where from time immemorial it has been cultivated on the declivities of Abyssinia that slope toward the Red Sea. About the fifteenth century, something like four hundred years ago, the coffee tree crossed this sea and penetrated into Arabia, where it has since been cultivated, and whence especially we get the famous coffee of Mocha. The use of coffee spread very early and with great rapidity in the East. It penetrated Europe much more slowly, and it was first taken into France at Marseilles.

Coffee was first drunk in Paris in 1667. The seeds which furnished it were brought in small quantity by a French traveler named Thevenot. Two years afterward, in 1669, Solomon Aga, Ambassador of the Sublime Porte in the time of Louis XIV., induced the courtiers of that great king to taste it, and they found it very agreeable. However, its use did not spread for a long time. It was not until the eighteenth century that it began to be generally used. In fact it is scarcely a century and a half since it became an article of general consumption by the people of Europe.

During many years Europe remained tributary to Arabia for this commodity. All the coffee consumed in Europe came from Arabia, and particularly from Mocha. Toward the commencement of the eighteenth century the Dutch attempted to import it into Batavia, one of their colonies in the Indian Archipelago. They succeeded very well. From Batavia some stalks were taken to Holland and put in a hot-house, where they succeeded equally well. One of these stalks were brought to France toward 1710, and was placed in the conservatory of the Jardin des Plantes, and there also it prospered and gave growth to a number of sprouts.

In 1720 or 1725, (we have not been able to find the precise date) an officer of the French Navy, Captain Deselieux, thought that, since Holland had cultivated coffee at Batavia, he might also acclimate it in our colonies of the Gulf of Mexico. When embarking for Martinique, he took from the Jardin des Plantes three stalks of coffee, and carried them with him. The voyage was long and difficult, by reason of contrary winds. The supply of water proving insufficient, it was necessary to put the crew on rations, Captain Deselieux, like the others had but a small quantity of water to drink each day. He divided it with his coffee plants.

Notwithstanding all his care, two died on the passage; only one arrived safe and sound at Martinique. Put at once into the earth, it prospered so much and so well that from it have descended all the coffee trees now spread over the Antilles and tropical America. Twenty years after, our Western colonies exported millions of pounds of coffee. You see the coffee tree starting from Africa, has reached the extremity of Asia on the east and America on the west. Hence it has nearly traveled round the world. Now in this long voyage, coffee has become modified.

Passing by the tree, of which we know so little, let us consider the seed. We need not be growers to know the different qualities of coffee and their different production. Nobody would confound Mocha with Bourbon, Rio Janeiro with Martinique. Each of these seeds carries in its form, in its proportion, in its aroma, the certificate, so to say, of its birth. Whence came these changes? We cannot know the certainty, and explain the why and the how, and follow vigorously the filiation of cause and effect; but, considering the phenomena as a whole, it becomes evident that it is to difference of temperature, of climate, of culture, that all these modifications are due.

This example taken from vegetables, shows that if we transport to considerable distances different specimens of the same vegetable, placing them in different conditions of cultivation, we obtain different varieties. And tea, transported some years ago into tropical America would present us with like facts.—*Popular Science Monthly.*

RAILWAY AIR-CUSHION.—Persons unused to travel often suffer much fatigue in the lower limbs from a long journey by rail, which is attributed to the tremulous motion communicated from the floor of the car. Those who have experienced the difficulty there as in walking over a bridge or a loose plank road while a vehicle is passing, by the painful effort required to keep the legs in trim, will appreciate the case. As a preventive it is recommended to rest the feet on an air-cushion, and foot-stools of a proper construction have been made for this purpose. All invalids and persons unused to hardships would do well to supply themselves with this simple convenience before starting upon a long railroad journey.

NATURE is the only workman to whom no material is worthless, the only chemist in whose laboratory there are no waste products, the only artist whose compositions are infinitely varied, and whose fertility of invention is inexhaustible.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING SEPTEMBER 17TH, 1872.
SUBAQUEOUS TUNNEL.—Henry Anderson, S. F., Cal.

GRAPE CRUSHER AND STEMMER.—Oliver Hyde, Oakland, Cal.
MACHINE TO CUT COBBLE-STONES.—Jacob Bolliger, S. F., Cal., assignor of three-fourths of his right to Louis Dutertre and E. D. Sawyer, same place.

SEED-PLANTER.—Oliver Hyde, Oakland, Cal.
ROTARY SOD-CUTTER.—William B. Hyde, Oakland, Cal.

GINNET-VENTIDUCT.—Joh. F. Peacock, Reno, Nevada.

CHUTE-GATE.—James M. Thompson, Quincy, Cal.

—The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Timely Lecture on Scale Insects.

Dr. W. P. Gibbons, of Alameda, stated at the last meeting of the Oakland Farmers' Club that he had a particular report to make on the subject of scale insects, and requested permission to read the same at the next meeting of the Club, inasmuch as his observations were of practical import, not only to the horticulturists of Alameda County, but to those of the entire State. That probabilities tended to the conclusion, that in many parts of the State, the fruit buds of peaches, almonds and cherries for the coming year were already materially injured, and that active exertions were necessary in order to protect orchards from total destruction. For this reason he wishes to bring up the subject as early as possible, so that advantage might be taken of any practical suggestions that might be made, with a view of arresting the increase of predatory insects.

The Club unanimously voted in favor of the Doctor's delivering his lecture on this important subject, on Friday evening, Oct. 28th.

Telegraph Wheat Quotations.

Since our last week's table, comparing *Mark Lane Express* prices with the telegraph report of Liverpool wheat quotations, the *Bulletin* and *Call* have announced that the Associated Press of this city get their quotations entirely from the Merchants' Exchange. A surprise to us and we presume to their own readers.

But where does the Merchants' Exchange get their quotations? Well, we have since learned that they get them from the Associated Press in New York. But where does the New York Associated Press get them? Well, we can't find any man in this city who knows. When we do and can tell our readers who makes up the telegraph reports, we will inform them all about it. At present these telegraph quotations and reports seem to be without authority or indorsement.

Dispatches have been sent to find out and inform us how this thing has been done; but at present fail to explain. Now, we are assured that letters have been addressed to the Associated Press of New York for some kind of explanation, and therefore we may possess our minds with patience till an answer is received.

In the mean time it is difficult to find sane men, having full confidence in the telegraph reports. It now looks as if the daily press, Merchants' Exchange and various private parties of the telegraph company have been victimized. We will, however, good naturedly wait to see how the "mistake" has happened.

Since the foregoing was in type we clip the following from the *Morning Call*:

Liverpool Grain Quotations.

New York, October 16.—The Liverpool grain quotations furnished to the California Associated Press and the public, through the Gold and Stock Telegraph Company, are those of the New York Associated Press. The standard quoted is that of California average wheat, and the prices given are sustained by the Liverpool weekly grain circulars. The higher quotations, cited from the *Mark Lane Express*, as discrediting ours, evidently give prices of California club wheat, which is not regarded, either here or at Liverpool, as so true a criterion of the market as average wheat. J. W. SIMONSON, General Agent Associated Press.

That may be the telegraph answer to the letters above alluded to. If so it is as clear as mud. Our grain quotations come "through the Gold and Stock Telegraph Co." Who are

they, asks the farmer? Who do they get their quotations from? From the Liverpool Freightlanders? Are they more reliable than *Mark Lane Express*? It is rather a hasty presumption or a prevarication that no man posted would have attempted. The *Mark Lane Express* quotations given by us heretofore do not represent the extra prices received for superior club wheat, which are usually two shillings in excess of the ordinary "California white wheat" named in the dispatches.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs. A. M., Oct. 17.

FLOUR—The interior and local demand is active, with a moderate inquiry for export. We quote prices as follows:

Superfine, \$4.00@4.50; extra, in sacks, of 196 lbs. \$5.25@5.50; Oregon brands, \$4.75 @5.25 in sacks of 196 lbs.

WHEAT—The market is quiet though there is renewed inquiry for shipping. Sales aggregate 50,000 sacks fair to choice, at \$1.50@1.62½. The range for shipping grades is \$1.55@1.60; Coast, \$1.45@1.50, and choice milling, \$1.55 @1.62½, per 100 pounds.

The latest Liverpool market quotations come through at 13s. @13s. 2d. per cental.

BARLEY—The market is steady. Bay, \$1.20 @1.25; Coast, \$1.10@1.15 per 100 pounds.

OATS—Market is rather dull. Ordinary to choice, \$1.40 to \$1.85 per 100 lbs. Light feed, \$1.50@1.55; good do. \$1.60@1.65; heavy do. \$1.70@1.75; Oregon, \$1.80@1.85.

CORN—Yellow, \$1.55@1.60 per 100 lbs.; White, \$1.65@1.70.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.75@2.00 per 100 lbs.

RYE—Is quiet at \$1.75 per 100 lbs.

STRAW—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN—Price is now \$20 per ton from the mill.

MIDDLINGS—For feed, are selling at \$25.00 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been free during the week. Quotable at close at \$9@16.00 ordinary to choice.

HONEY—Best Los Angeles and San Diego sells at 20¢@22½¢; other kinds 10¢@15¢ in comb; strained, 10¢.

BEESWAX—Quiet at 33¢@35¢ per lb.

POTATOES—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from \$1.50 to \$1.75. Carolina, 75¢@87½¢ per 100 lbs.

ONIONS—Quotable at \$1.12½ per 100 lbs.

WOOL—The market continues dull. Sales of 300,000 lbs. Fall at current rates. Spring is neglected and nominal. Fall, 10¢@14¢ for burry, and 15¢@18¢ for clear; 19¢@20¢ for choice.

TALLOW—Good quality of Cal. 8¢@8½¢.

SEEDS—Flax 3¢; Canary, 4½¢. Mustard, 1¢@3¢ per lb.

PROVISIONS—Following are jobbing quotations: California Bacon 13¢@14¢ per lb.; Eastern do. 12¢@13¢ for clear and 14¢@15¢ for sugar-cured Breakfast; Cal. Hams 14¢@15½¢; Eastern do. 20¢@22¢; California Smoked Beef, 12½¢@13¢ per lb.

BEANS—The following are jobbing rates: Pea \$2.62½; Small White \$2.62½; Small Butter, \$2.62½; large \$2.75. Bayo, \$2.75@3.00; Pink, \$2.62½ per ctl.

NUIS—California Almonds, 8¢@10¢ for hard and 18¢@25¢ for soft shell; Peanuts, 5¢@8¢ Pecan, 20¢ @ lb.; Hickory, 12¢; Brazil, 15¢. Chili Walnuts, 15¢; French Almonds, 25¢ @ 30¢; Princess Almonds, 35¢@40¢; Cocanuts, \$10.00 per 100.

HOPS—California are dull and nominal at 30¢ per lb.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 8½¢@9¢ @ lb. do. 2d quality 6¢@7¢ @ lb.; do. 3d do. 4½¢@6¢.

VEAL—Quotable at 7¢@12½¢.

LAMB—Scarce at 9¢.

MUTTON—Quiet at 6½¢@7¢ @ lb.

PORK—Undressed grain-fed is quotable at 6¢@6½¢ dressed, grain-fed, 8¢@9¢ per lb.

POULTRY—Live Turkeys, 20¢@22¢ @ lb.; Hens \$8.50@9.00; Roosters, \$6.00@7.00 per dozen; Spring Chickens, \$4.50@5.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 @ dozen.

WILD GAME.—Quail, \$1.50@2.00; Hare, \$3.50@4.50; Rabbits, \$1.50@1.75; Larks, Doves, Plover and Curlew, 50¢@1.00; Mallard Ducks, \$4.50@5.00; Teal, \$2.00@2.50; English Snipe, \$3.00, small, \$1.50; Venison, 8¢@10¢ @ lb.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 35¢@65¢, per lb. Inferior and ordinary roll is plentiful, but dull at 35¢@40¢; choice scarce at 50¢@65¢. New firkin is quotable at 25¢@30¢; pickled, 32½¢@37½¢; Eastern firkin 18¢@27½¢. CHEESE—New California, 10¢@15¢; Eastern at 14¢@17¢ @ lb.

EGGS—California fresh, have advanced to 57½¢; Oregon, 45¢; Eastern, 27½¢@32½¢ per doz.

LARD—California 12¢@13¢. Eastern in cases

13¢@13½¢; do in tcs. 11½¢@12¢; in kegs, 12¢ @ 12½¢ per lb.

HIDES—Sales for the week embrace 1,100 Cal. dry at 17¢@18¢, and 1,050 salted at 8¢@9¢.

FRUIT MARKET.

Tahiti Oranges, M 40 @ 1	Hungarian Prunes, 6 @ 8
Limes, M 12 @ 12 50 @ 15 00	Pomegranates, 1 @ 15
Au'lin Lemons, M 6 @ 6	Plums, Common, 6 @ 8
Sicily do, M 15 @ 15	Figs, 3 @ 5
Bananas, bunch 3 @ 40	Strawberries, 1 @ 10
Pineapples, doz 2 @ 60	Raspberries, 1 @ 10
Apples, Bell, bx 1 25 @ 50	Cantaloupes, doz 1 @ 20
King, do, 1 25 @ 50	Watermelons, 10 @ 15 00
R. I. Greening 75 @ 100	Grapes, Mission, 1 @ 8
Northern Spy, 1 @ 10	Chasselas, 2 @ 3
Baldwin, 1 25 @ 50	Blk Malvoisie, 3 @ 5
Senator, 1 25 @ 50	Rose of Peru, 3 @ 5
Spitzenberg, 1 50 @ 75	Blk Hamburg, 3 @ 5
Pears, Bartlett, bx 2 50 @ 300	Black Prince, 3 @ 5
Seckels do, 2 00 @ 25	Muscad of Al, 3 @ 6
Dutchess do, 1 00 @ 50	Flame Tokay, 4 @ 4
Fall Butter, 1 00 @ 50	Black Morocco, 8 @ 10
Beaure Hardyl 50 @ 200	Wine Grapes, 1 1/2 @ 1 1/2
Peaches, Comm, 8 @ 10	
Apricots, 1 25 @ 50	
Nectarines, bx, 6 @ 8	
German Prunes, 6 @ 8	

DRIED FRUIT.

Apples, 1 @ 8	Pitted, do 18 @ 20
Pears, 1 @ 8	Raisins, 1 @ 15
Peaches, 1 @ 8	Black Figs, 1 @ 8
Plums, 1 @ 8	White, do 15 @ 20

VEGETABLES.

Cabbage, 1 @ 5	Cucumbers, 1 @ 5
Garlic, 1 @ 5	Summer Squash, 1 @ 5
Rhubarb, 1 @ 5	Tomatoes, river, 1 @ 5
Green Peas, 1 @ 5	Tomatoes, bay, 1 @ 5
Green Corn, doz 15 @ 20	String Beans, 1 @ 5
Marrowfat Squash, 1 @ 5	Egg Plant, 1 @ 5
Artichokes, 1 @ 5	Peppers, 1 @ 5
	Okra, 1 @ 5

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING—English Standard Wheat bags, hand sewed, 15¢; Flour sacks 8½¢@9½¢ for qrs. and 13½¢@14¢ for hls. Standard Gunnies are jobbing at 18½¢; Wool 70¢@75¢; Barley sacks 16¢@18¢; Hessians, 40-inch goods, 12¢@12½¢ per yard.

BUILDING AND FENCING MATERIALS—

There is an improvement in the lumber trade in consequence of preparations for the approaching rains. Export trade is light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$18@19; do. surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, 1 @ 20	20 00
Rough refuse, 1 @ 16	16 00
Rough clear, 1 @ 32	32 00
Rough clear refuse, 1 @ 22	22 00
Rustic, 1 @ 35	35 00
Rustic refuse, 1 @ 24	24 00
Surfaced, 1 @ 32	32 00
Surfaced refuse, 1 @ 22	22 00
Flooring, 1 @ 30	30 00
Flooring refuse, 1 @ 20	20 00
Beaded flooring, 1 @ 32	32 00
Beaded flooring refuse, 1 @ 22	22 00
Half-inch Siding, 1 @ 22	22 00
Half-inch Siding refuse, 1 @ 16	16 00
Half-inch Surfaced, 1 @ 25	25 00
Half-inch Surfaced refuse, 1 @ 18	18 00
Half-inch Battens, 1 @ 22	22 00
Pickets, rough, 1 @ 14	14 00
Pickets, rough, pointed, 1 @ 16	16 00
Pickets, fancy, pointed, 1 @ 25	25 00
Shingles, 1 @ 30	30 00

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—	
Rough, 1 @ 25	25 00
Flooring and Stepping, 1 @ 37	37 00
Flooring, narrow, 1 @ 40	40 00
Flooring, second quality, 1 @ 30	30 00
Laths, 1 @ 35	35 00
Furring, 1 @ 10	10 00
Redwood—	
Rough, 1 @ 25	25 00
Rough refuse, 1 @ 20	20 00
Rough Pickets, 1 @ 18	18 00
Rough Pickets, pointed, 1 @ 20	20 00
Fancy Pickets, 1 @ 30	30 00
Siding, 1 @ 25	25 00
Tongued and Grooved, surfaced, 1 @ 40	40 00
Do do refuse, 1 @ 25	25 00
Half-inch surfaced, 1 @ 40	40 00
Rustic 1 @ 45	45 00
Battens 1 @ 10	10 00
Shingles 1 @ 35	35 00

Sugar Pine is jobbing at \$50@60 for clear and \$35@45 for second quality.

COFFEE—Costa Rica 20¢; Guatemala 18¢.

Java 23¢; Manilla, 18¢; Rio 19¢@20¢.

Ground Coffee in cases 30¢; Chicory, 12¢.

SPICES—Allspice 14¢@15¢. Cloves 16¢@17¢.

Cassia 35¢@36¢. Nutmegs \$1.00@1.10. Whole

Pepper 20¢. Ground Spices—Allspice \$1.00 @ doz.; Cassia \$1.50; Cloves \$1.12½; Mustard

\$1.50; Ginger and Pepper, each \$1.00@1.12 @ doz.; Mace \$1.50 @ lb.; Ginger 15¢ @ lb.

FISH—We quote Pacific Dry Cod new, in bundles at 6½¢; Salmon in hbls. \$5.00@6.00, hf do. \$3.50@4.00; Case Salmon, \$3.00 for 2½-lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in hbls; Puget Sound Smoked Herring, 60¢@85¢ per box; Mackerel, No. 1 hf hbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.00@2.25; Mess, \$2.50; Extra mess, \$3.00.

NAILS—Quotable at \$6.00@9.00 for assorted sizes.

RICE—Sales of China No. 1 at 6½¢@7¢, and No. 2 at 5½¢@6½¢ @ lb. Siam, quotable at 5½¢ @ 6½¢ in mats; Hawaiian, 9¢ per lb.

SOAP—The prices for local brands are 5¢ @ 10¢, and Castile, 12¢@12½¢ @ lb.

SUGAR—We quote Cal. Cube at 13½¢; Circle A Crushed, 13¢, and Granulated 12½¢; Golden C. 11¢; Extra Golden C. 11½¢; Hawaiian 8¢@10½¢, as extremes @ lb.

SYRUP—Prices may be given as follows: 47½¢ in hbls, 50¢ in hf hbls, and 55¢ in kegs.

SALT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 @ ton; coarse, \$18@19.

TEA—We quote as follows for bulk descriptions: Amoy—Common to fair, 30¢@45¢; superior to fine, 55¢@65¢; extra fine, 75¢@85¢. Foochoos—Common to fair, 35¢@45¢; superior to fine, 50¢@60¢; extra fine, 75¢. Souchang and Congou—Common to fair, 35¢@45¢; superior to fine, 50¢@60¢; extra fine, 75¢. Japans—Common to fair, 30¢@35¢; superior to fine, 40¢@45¢; extra fine to finest, 55¢@75¢ @ lb.

San Francisco Retail Market Rates.

THURSDAY NOON, Oct. 17, 1872.

MISCELLANEOUS.	
Butter, Cal. fr. 60 @ 65	Wheat-ake, 22x36 15 @ 16½
do Oregon, 60 @ 65	Flour ake, qr. 9 @ 13½
Honey, 20 @ 20	do do, 4 @ 13½
Cheese, 20 @ 25	Potato G'y Bags, 18 @ 18
Swiss Cheese, 50 @ 50	Second-hand do 12 @ 16
Eggs, Cal. doz. 65 @ 65	Deer Skins, 12 @ 22
do Oregon, doz 45 @ 45	Sheep skins, w/lon 50 @ 75
Lard, 1 @ 18	Sheep skins, plain, 1 50 @ 50
Sugar, cr., 7½ @ 100	Goat skins, each 25 @ 50
Brown, 8 to 10 lbs. 100 @ 100	Dry Cal. Hides, 17 @ 18
Beet, do, 12 @ 12	Salted do, 4 @ 9
Sugar, Map. 30 @ 30	Dry Mex. Hides, 17 @ 18
Plums, dried, 15 @ 30	Salt do, 8 @ 9
Peaches, dried, 12½ @ 12½	Codfish, dry, 10 @ 12½
Wool Sacks, new 70 @ 70	Live Oak Wood, 10 @ 10
	Tallow, 8 @ 8½

PRODUCE, ETC.

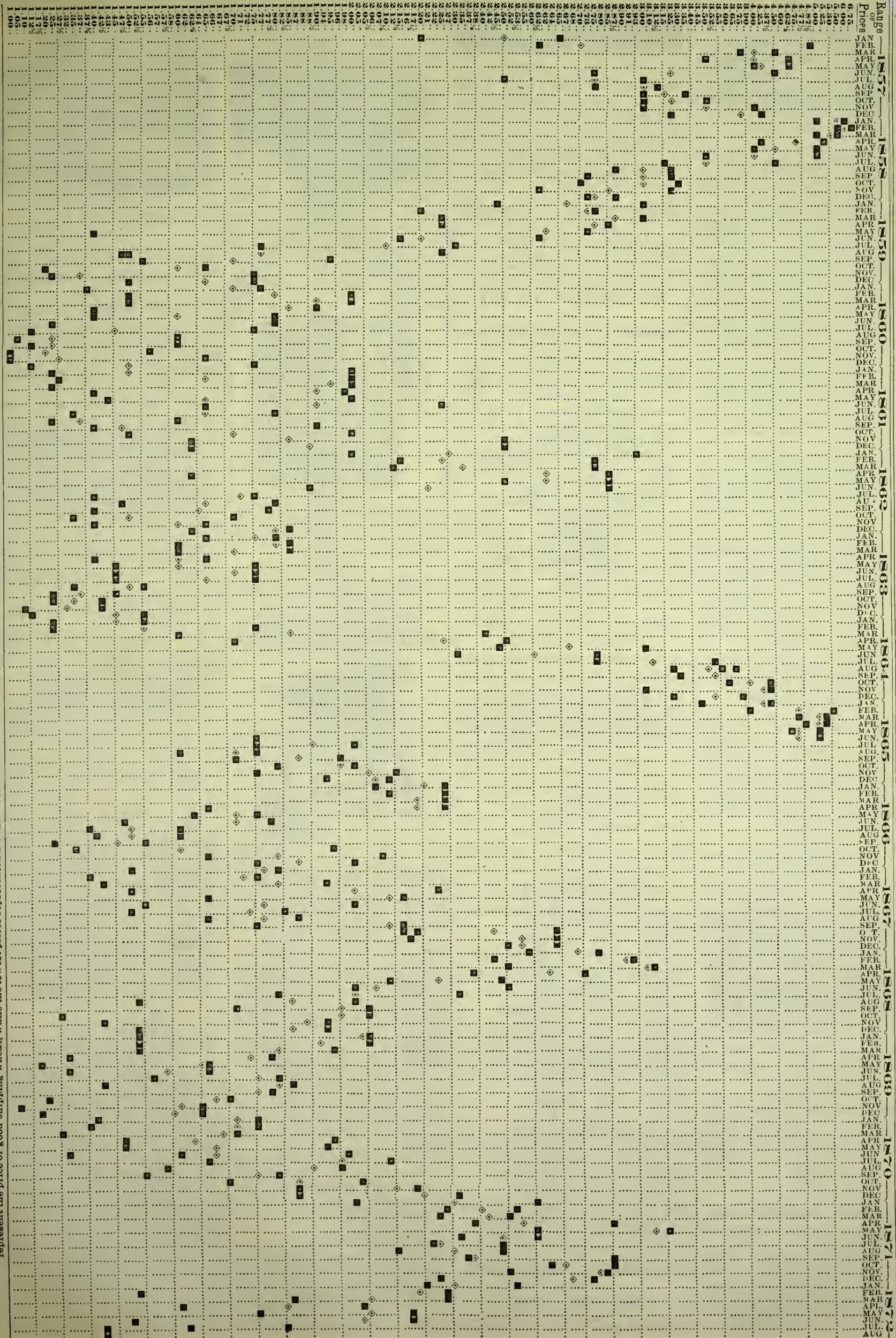
Flour, ex. 55 @ 55	Barley, cwt. 1 50 @ 1 65
Superfine, 55 @ 55	do do, 4 @ 13½
Corn Meal, 100 @ 30	Dry Lima Beans, 25 @ 25
Wheat, 100 @ 60	Hay, ton, 17 @ 17
Oats, 100 @ 15	Potatoes, cwt. 1 75 @ 2 00

FRUITS, VEGETABLES, ETC.

Apricots, 1 @ 10	Celery, doz. 75 @ 100
Pine Apples, 1 @ 10	Cucumbers, 1 @ 25
Bananas, doz. 75 @ 75	Tomatoes, 1 @ 25
Cantaloupes, 1 @ 25	Cress, 1 @ 25
Watermelons, 1 @ 25	Dried Herbs, 1 @ 25
Cal. Walnuts, 1 @ 25	Garlic, 1 @ 12½
Cranberries, 1 @ 25	Green Peas, 1 @ 25
Strawberries, 1 @ 25	String Beans, 1 @ 25
Raspberries, 1 @ 25	Lettuce, doz. 37½ @ 37½
Cranberries, 1 @ 25	Minshrooms, 1 @ 50
Gooseberries, 1 @ 25	Horseradish, 1 @ 25
Cherries, 1 @ 25	Okra, dried, 1 @ 15
Oranges, doz. 75 @ 100	Spry Moss, 1 @ 5
Limes, per doz. 25 @ 50	Pumpkins, 1 @ 3
Figs, fresh, 10 @ 15	Parsnips, doz. 25 @ 25
Asparagus, wh. 20 @ 20	Parsley, 1 @ 25
Artichokes, doz. 75 @ 75	Pickles, gal. 75 @ 75
Brussels' sprouts, 1 @ 8	Radishes, 1 @ 25

Fluctuations of Prices for 15 1-2 Years in the San Francisco Wheat Market---Monthly Quotations from January, 1857, to July, 1872.

The diagram represents the highest, lowest and average prices for 15½ years, from January, 1857, to July, 1872. The highest quoted prices are usually those obtained from choice milling wheat. The average prices are quoted by this character (◊), and the lowest prices represented are those obtained for coast distilling and inferior grades. The highest and lowest prices are marked thus (■). For further reference see page 248.



Agricultural and Industrial BOOKS.

For Sale at this Office.

American Manures, and Farmers' and Planters' Guide—comprising a description of the elements and composition of plants and soils—the theory and practice of composting—the value of stable manure and waste products, etc., etc.; also chemical analysis of the principal manufactured fertilizers—their assumed and real value—and a full expose of the frauds practised upon purchasers. By Wm. H. Bruckner, Ph. D., and J. B. Chynoweth. Price \$2, post paid. Address DEWEY & Co., this office.

The Fruits and Fruit Trees of America, or the Culture, Propagation, and Management, in the Garden and Orchard, of Fruit Trees generally, with descriptions of all the finest varieties of Fruit, Native and Foreign, cultivated in this country. By A. J. Downing. Illustrated: 1098 pages; 1868. The best authority, and only complete work. Price, in cloth and gilt, \$5, post paid, by DEWEY & Co., this office.

New American Farm Book—originally by R. L. Allen; revised by Lewis F. Allen, 1871. Embracing information on all general subjects pertaining to Farming and all branches of Husbandry—a wide range, yet very fully and ably treated. 526 pages. Price \$3, post paid. Address DEWEY & Co., this office.

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Cranberry Culture, by a Practical Grower in N. J. Joseph J. White. A special treatise of 126 pages, Post paid from this office, \$1.75.

Farm Implements and Farm Machinery, and the principles of their construction and use. With simple and practical explanations of the Laws of Motion and Force as applied on the Farm; by John J. Thomas; 287 illustrations and 302 pages. Sold by DEWEY & Co., post paid, for \$1.75.

Ten Acres Enough: A practical experience, showing how a very small farm may be made to keep a very large family, with extensive and profitable experience in the cultivation of the smaller fruits. Tenth edition, 1871. Price, post free, \$1.50, at this office.

Observations on the Culture of Silk in California. By I. N. Hoag, of Sacramento, 1870. Pamphlet, 33 pages. For sale by DEWEY & Co., Publishers of PACIFIC RURAL PRESS, San Francisco. Post paid, 25 cts.

Cotton Culture; by J. B. Symon; with an additional chapter on Cotton Seed and its uses. 190 pages, 1868. Price, post free, \$1.75, at this office.

How Crops Grow; by Johnson; A treatise on the chemical composition, structure and life of the plant, for all students of agriculture; with illustration and analysis. 394 pages; 1868. Post free from this office, \$2.50.

American Grape Growers' Guide; by Wm. Chorton (N. Y.). 204 pages, 1852. Post free, \$1, from this office.

American Fish Culture, embracing all the details of artificial breeding and rearing of Trout, and the culture of other fishes; by Thad. Norris. Illustrated, 304 pages, 1868. Post free from this office, \$2.50.

How Crops Feed; Johnson, 1870. On the Atmosphere and the Soil as related to the nutrition of agricultural plants. Illustrated. 375 pages. Post free from this office, \$2.50.

Thresher's Guide and Farmer's Friend—by D. Hollihan, a Californian, and a practical thresher for over fifteen years. It contains facts and hints of great value to those specially interested, who thresh or employ threshers. Published by DEWEY & Co., at this office. In flexible cloth, \$1. Post free.

Randall's Sheep Husbandry, illustrated, with a treatise on the Diseases of Sheep, Prevention and Cure Post free from this office, cloth edition, \$2.

TO SHEEP BREEDERS!

And all such as are interested in raising FINE STOCK, attention is invited to the flock of Severance & Peet, consisting of

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Just imported from Addison County, Vermont. These Sheep were all selected from noted flocks by one who has bred this variety of Sheep for fifteen years, and are superior in the combination of qualities that go to make up a perfect Sheep. A portion of this flock will be offered for sale on reasonable terms.

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As this variety is rapidly advancing in the East. May be seen and examined at the CITY GARDENS, corner of South and Center streets, Stockton, Cal.

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plants, Flow-

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Seeds of all

kinds, are for

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DECIDUOUS

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ment of choice

ROSES too num-

erous to mention.

Plants, Flow-

Garden, Grass

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Seeds of all

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1 will send, post paid, warranted to arrive in good order:

1 year Plum and Pear Trees, Roses and Shrubs, \$25 per C.

1 year Apple, Peach and Orange Quince, \$15 per C. Raspberry and Blackberry Plants, 6 varieties, \$2 per C. Strawberry Plants, 0 varieties, \$1 per C; \$3 to \$4 per M, by express; Giant Asparagus and Honey Locust Hedge, \$1 per C, \$3 to \$4 per M, by express. Larger quantities and older trees proportionately low.

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Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer. 4v23-1y

Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 642, corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim. 12v3tf

SEED WHEAT.

If you want clean Wheat, buy "HUNTER'S IMPROVED GRAIN SEPARATOR." It separates all the Chaff, Mustard, Barley, Oats, etc., from the Wheat, and does its work rapidly. Send for descriptive circular.

WIESTER & CO.,

3v4-3m 17 New Montgomery street, S. F.

A New Firm.

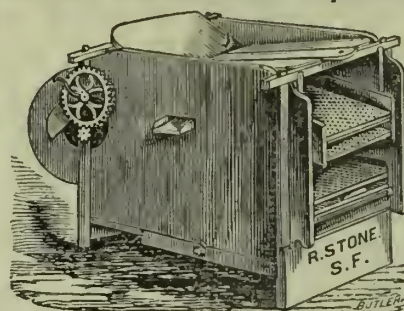
JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walker A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento. G. R. JEWELL,
16v3-3m T. B. FLINT.

GOOD CABLE SCREW WIRE

Boots and Shoes

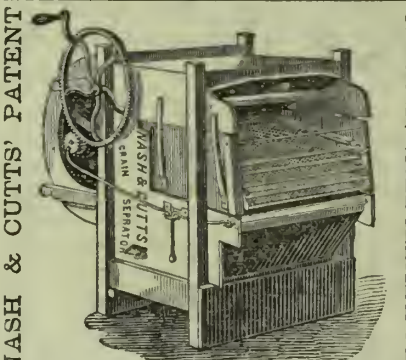
ARE SELLING FROM MAINE TO CALIFORNIA.

THE PATENT Novelty Mill and Grain Separator



Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far exceeds anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

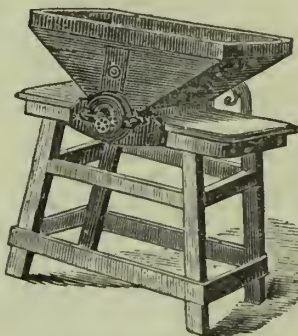
For further information apply to R. STONE, 422 Battery street, San Francisco.



Three sizes, warranted to clean from 60 to 200 bushels per hour, according to size. Prices, \$40, \$50 and \$75. First Premiums at California State Fairs in 1870 and 1871. Warranted to separate Mustard Seed, Cheat, Barley and Oats, from Wheat. Cleans the Morning Glory Seed from Alfalfa.

Circulars mailed on application. Address NASH, MILLER & CO., Sole Proprietors and Manufacturers, Sacramento, Cal. N. B.—All the Nash & Cutts Steam Separators are fully warranted. 3v4-15t

THE CELEBRATED CHALLENGE FEED MILL



For Farm use and Custom work. The only Practical Farm Feed Mill ever invented. Can be used with from one to eight-horse power, and grinds from 250 lbs. to one ton of barley per hour. Price of Mills from \$75 to \$100, according to size. Adapted to Wind, Water, Steam, or Horse Power. The grinding surface is adjustable, and can be replaced in fifteen minutes at an expense of one dollar to one dollar and a quarter. Over 3,000 now in use. Every Mill warranted to give satisfaction. For sale by all leading agricultural firms on the coast. For further particulars send for circular.

M. S. BOWDISH, General Agent, With Hawley & Co., cor. California and Battery sts., 18v3-3a San Francisco.



IS THE LEADING COMMERCIAL SCHOOL OF THE Pacific. It educates thoroughly for business. Its course of instruction is valuable to persons of both sexes and of any age. Academic Department for those not prepared for business course. Open day and evening throughout the year. Students can commence at any time. Full particulars may be had at the College Office, 24 Post street, or by sending for HEALD'S COLLEGE JOURNAL.

Address E. P. HEALD, President Business College, San Francisco. 12v25-3m

The Simple Mailing Machine.

Its features are: Simplicity of Construction. Durability. Ease of Operation. Requires no expensive outlay. Adapted to all styles of labels. Puts them on securely. It enables use of old papers for wrappers. And soon saves the cost of printing labels. It systemizes the work of mailing. It is the cheapest machine. May be paid for in part by advertising. Address, for terms and description, ADVOCATE PUBLISHING CO., Jackson, Tenn. One of the above machines can be seen at the office of the Press. 11v4tf



TANK MAKING.

The undersigned having adopted TANK MAKING their specialty, are now prepared to manufacture

Tanks of Any Description

—AT THE—

LOWEST REASONABLE RATES.

We are constantly erecting new and improved machinery in our Factory, to facilitate our work; we have also erected a large steam chest, capable of steaming lumber of any description used by us. We are also constantly receiving and preparing large quantities of

Split Mendocino Redwood

FOR THE SPECIAL PURPOSE OF MAKING

LARGE WINE TANKS AND CASKS

Thoroughly steaming the lumber before making up from 6 to 8 days and then drying and seasoning 6 to 8 days. The following is our price list of ordinary

Redwood Water Tanks,

made of 2 inch sawed lumber clear of knots and sap—a discount made if the lumber is not steamed.

1,000 to 2,000 gallons, bound with 5 hoops 1 1/4 x 1/2 and 1 hoop 1 1/4 x 3-16.

2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2 hoop 2 x 3-16.

4,500 to 7,500 gallons, bound with 5 hoops 2 1/2 x 1/2 and 2 hoop 2 1/2 x 3-16.

7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 1/2 and 2 hoops 2 1/2 x 3-16.

15,000 to 20,000 gallons, bound with 8 hoops 3 x 1/2 and 3 hoops 3 x 3-16.

PRICE, - - - From 1 1/2 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2 inch thick, steamed and thoroughly seasoned, from 2c. to 3 1/2 c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3 1/2 c. to 5 1/2 c. per gallon.

REDWOOD CASKS (split lumber,) with oak middle piece and gate, from 7 to 9 c. per gallon.

OAK CASKS (full stock,) from 12 1/2 to 15 c. per gallon.

Send for Price List.

For further particulars address.

M. FULDA & SONS.

Cor. Commercial and Drum Streets, S. F. 5v4-5t

Something New for the Kitchen.

THE Aerating Egg Beater.

Various devices have been presented to the public for beating eggs, but nothing, we think, equal to the one herein shown. This, in fact, is the only aerating device ever made, and is very properly called the "Aerating Egg Beater."

This Beater, as will be seen by reference to the engraving, is simply a tin can with a cone bottom and a cone dasher, the lower portion of the dasher being perforated with very small holes, as shown. Under this arrangement the upper portion, when forced down, fills with air which is forced through the egg, thereby finely dividing and thoroughly aerating the mass. It beats one egg as well as half a dozen. For further particulars address

WIESTER & CO.,

17 New Montgomery St. (Grand Hotel Building), S. F.

WILCOX'S

IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most Economical of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

Agents Wanted

For the liveliest book on the West ever written,

"BUFFALO LAND!"

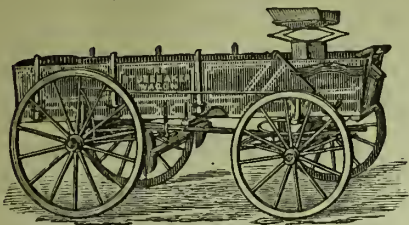
By W. E. WEBB, the noted Pioneer and Humorist. The wealth and wildness, mysteries and marvels of the mighty Plains fully and truthfully described. Overflowing with wit and humor. The Appendix a Complete Guide for Sportsmen and Emigrants. PROFUSELY AND SPLENDIDLY ILLUSTRATED. Immensely Popular, and selling beyond precedent. Send for illustrated circular, terms, etc., at once, to the Publishers,

F. DEWING & CO.,

7v4-4m 542 California street, San Francisco.

\$5 to \$20 per day! Agents wanted! All classes of working people, of either sex, young or old, make more money at work for us in their spare moments or all the time than anything else. Particulars free. Address G. Silsbee & Co., Portland, Maine.

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

For QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.

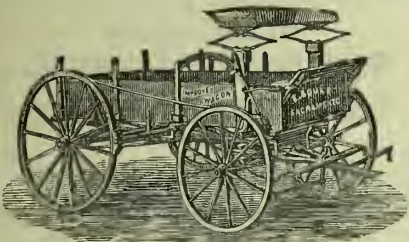
IRON AXLE,
THIMBLE SKEIN,
HEADER AND SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested.
Send for CIRCULAR and PRICE LIST.

16v3-3m E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

ap22-3m

San Quentin, Cal.

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, and easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,
Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide. This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale by the
SWEEPSTAKE PLOW CO.,
At SAN LEANDRO, CAL., under the personal superintendence of the Patentee, F. A. HILL,
And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal.

14v2-3m

M. WALTHALL and S. T. NYE

Give Exclusive Attention to

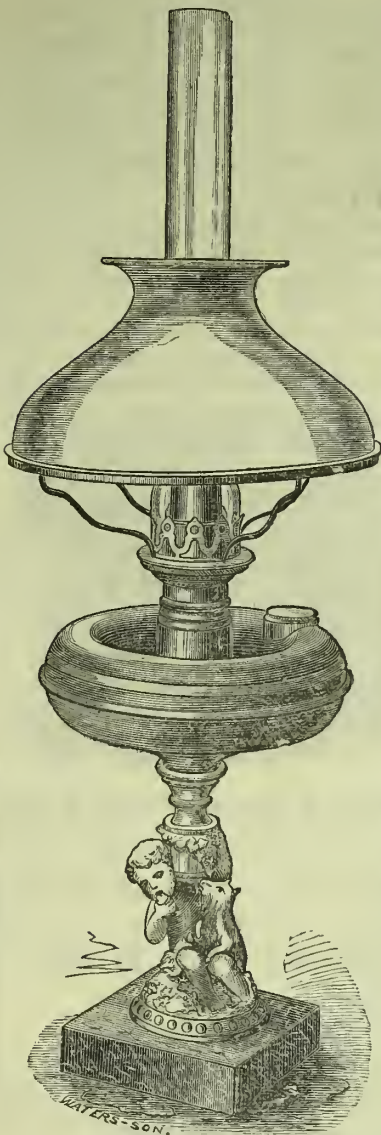
Land Matters in the Local and General Land Office,
Mining Applications, Procuring Patents, and Contests before the Office, etc., etc.

Buy and Sell Agricultural College Scrip and Land Warrants.

Office in Odd Fellows' Building, near the Land Office, Stockton, Cal. Refer to Hon. S. A. Booker, Judge of the Fifth District Court, Stockton. 9v5-3m

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

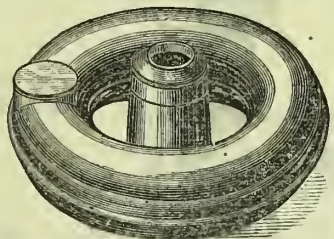
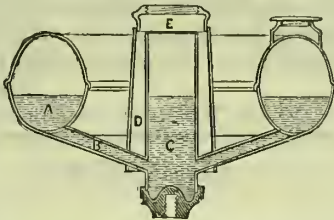
2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.



This Lamp can be filled from the front, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

State and County Rights for Sale. Agents Wanted.

The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

I. L. MERRELL,

Nos. 10 and 12 Third Street, San Francisco.

1v4tf-lampb

THE PEOPLE'S PUMP.

THE ONLY RELIABLE PUMP FOR

Farmers, Stockmen and
Stable Keepers,

BEING A

NON-FREEZING FORCE PUMP,

Working in Wells from

6 to 100 feet deep.

Suitable for either Hand or Power use.

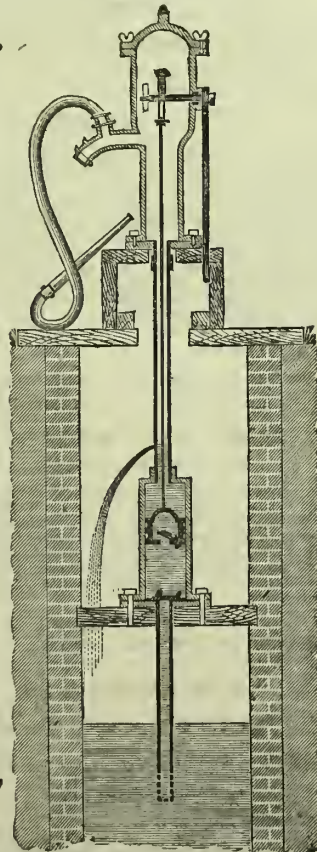
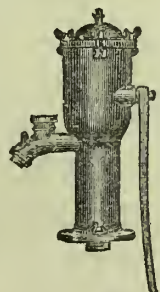
RATE IN PRICE, FROM \$12 UP.

Send for Circular.

Depot for Pacific Coast,

CONROY, O'CONNOR & CO.,

SAN FRANCISCO.



SOMETHING NEW.

We have for sale the Right to the Pacific Coast for a new and useful invention that is needed in every family. It is easily manufactured and requires but a small amount of capital to commence with. A number of orders have already been taken, which will be turned over to any party who may purchase the patent. Samples can be seen at our office, or descriptive circulars will be sent to any address on application.

WIESTER & CO.,

17 New Montgomery Street, San Francisco

WARNER & SILSBY

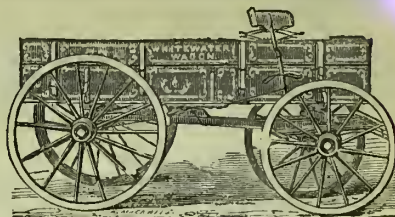
Manufacture all sizes of

Bed and Sofa Springs,

Which they offer to the trade at reduced prices; also the celebrated Obermann Self-Fastening Bed Spring.

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.

642 Mission Street, above New Montgomery, San Francisco. 23v3-6m



PRICES:

Thimble Skein, 3 inch, \$100; 3 1/4 inch, \$105; 3 1/2 inch, \$110; 3 3/4 inch, \$115; 4 inch, \$125—including in each case wagon gearing complete, with whiffletrees, neck yoke and stay chains.

Box Beds, Brakes, Seats, etc., \$40 to \$50, complete, according to style.

We invite the attention of buyers to the superior workmanship and finish of these justly celebrated Wagons. They are known throughout the West, and have long taken the lead of all others; and although but recently introduced to the California farmer, have given the most complete satisfaction. There is no factory in the United States where greater care is given to the selection of material used than that of Winchester & Partridge, the builders of these Wagons, in Wisconsin. The timber is of the choicest selection, and the iron used, the best that can be obtained. The manufacturers say: "A thorough system of inspection is strictly adhered to, so that we are prepared to warrant each part to be perfect; if defective, it will be replaced without charge. We claim by actual test a SAVING OF FIFTEEN PER CENT. IN DRAFT over any other Wagon offered for sale. This case of draft has been accomplished after years of close study, and on strictly scientific principles, and is a secret known only to ourselves."

Knowing that a wagon to be popular in California, must be a good one, and desiring to bring out for our trade not only the best Farm Wagon in the country, but one also that could be sold at a popular price, we sought among the largest manufacturing of the West, and finally selected "THE WHITEWATER" as the Wagon before all others for the California trade. The manufacturers of these Wagons are among the oldest and largest in the United States, having been established in 1847, and their Wagons may be found in all parts of the country.

We are prepared to furnish Wagon Beds, Brakes and Seats, in any style to suit customers and the trade. Our California Rack Bed is far superior to any in the market. The side pieces are made of 2x6 oak; the bed is 14 feet long, and the spring seat 4 feet from box—giving ample room to load sacks, wood, etc., without interfering with the driver. Our California Roller Brake can be used with or without box. These beds, as well as the "Whitewater" running-gears, are made expressly for our own trade, and are peculiarly adapted to California use. The brakes have hardwood bars, and the seats hardwood standards; the beds are nicely proportioned, well framed and bolted together, painted inside and outside, neatly striped and ornamented, and well varnished. The wheels of the "Whitewater" are extra heavy, with slope-shouldered or wedge-shaped spokes, in large hubs and deep felloes, wide and heavy tires riveted on through every joint. The axles to our Thimble-Skein Wagons are made large and strong, and of THOROUGHLY SEASONED HICKORY.

If you want a Wagon, and want a GOOD ONE, at a low price, give the "Whitewater" a trial.

TREADWELL & CO.,

San Francisco,

2v4tf

General Agents for the Pacific States.

THOMAS & SHIRLAND,

Importers and Breeders of



Cashmere or Angora Goats,

—OR—

PURE BLOOD AND ALL GRADES.

For Sale in Lots to Suit Purchasers.

Including a Choice Lot imported by A. EUTYCHIDES native of Angora. For particulars apply to

S. P. THOMAS, Sacramento, Cal.

—OR—

E. D. SHIRLAND, Auburn, Cal.

8v4-3m

LANDRUM & RODGERS,

IMPORTERS AND DEALERS IN



Cotswold Sheep and Angora Goats.



A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

JUST ARRIVED!

Eighty-five head of Choice, Pure Breed Angora Goats—47 Bucks and 38 Ewes—the largest importation ever made to this coast, mostly from the flock of Richard Peters, of Atlanta, Ga. A pamphlet, with particulars, furnished to breeders on application.

Address

LANDRUM & RODGERS,

2v4-3m

Watsonville, Santa Cruz Co., Cal.

FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigrees guaranteed.

Seventy-five head of the Silesian Sheep have arrived and are for sale by

ROBERT BECK, Sacramento.

WATT & MCLENNAN,

WOOL COMMISSION MERCHANTS,

625 Sansome street, corner Jackson, SAN FRANCISCO.




Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

40 Thoroughbred Angora Goats for Sale! Imported by a native of Angora, direct from Asia Minor. For specimens see the flock of Thomas & Shirland, Sacramento, Cal. Address A. EUTYCHIDES, Spout Spring, Appomattox County, Va. 10v4-1y

"Most Valuable Paper."
VIRGINIA CITY, M. T., August 25th, 1872.
Messrs. WIESTER & CO., S. F.—Please send me by mail one of your Patent Vegetable Cutters. I see your advertisement in the PACIFIC RURAL PRESS, the most valuable paper I ever read.
Yours truly,
JNO. S. BARTRUFF.
A Splendid Paper.
Messrs. Editors:—Your RURAL PRESS is a splendid paper. I am very much pleased with it.
L. S. PRESTON.
Point of Timber, Cal., Oct. 5, 1872.

PERSONAL.—We were favored with a visit at noon to-day from Mr. P. McCarty, special corresponding agent of the MINING AND SCIENTIFIC PRESS, San Francisco. He has been out in the Pioche region writing full and correct descriptive letters of that district, its mines, and general resources, which have been published in the PRESS. He is now visiting the Comstock range for the same purpose, and will go through all the mines. We doubt not that all possible facilities and assistance will be given him. He is also canvassing for the PRESS, which is the best mining and mechanical paper on the coast—a paper that most everybody can subscribe for with profit.—Gold Hill News, Sept. 10th.



PACIFIC RURAL PRESS
DEWEY & CO.
PUBLISHERS SAN FRANCISCO
Agricultural Home Journal

EACH ISSUE CONTAINS
Sixteen well filled pages.
Original and Choice Engravings.
Editorials on Home Industries.
On various kinds of Stock-rearing.
On Horticulture and Gardening.
Correspondence from Farming Districts.
Answers and hints to Correspondents about Local Farming.
Good Health and Useful Information.
Reports of Farming Clubs.
Mechanical and Scientific progress.
Agricultural Notes from all quarters.
Domestic Produce Markets.
Home Circle.
Domestic Economy.
Mechanical Hints and Domestic Receipts.
Home and Farm Matters.
Affording, in all, more of real instructive and profitable matter for general readers than any other weekly on this side of the Continent.
Subscription, in advance, \$4 a year. Single copies 10 cts. Four single copies, of late dates, sent postpaid for 25 cts. Address

Petersen's Patent Bee-Hive.
This HIVE is a California invention, simple in its construction, and being made entirely of wood, is cheap enough for the amateur or professional bee-keeper. Among the prominent objects secured by this Hive are the facility it affords of examining at all times the stores of the bees, and the taking away of any surplus, or supplying whatever may be wanting. Also the presence and state of health of the queen bee; in fact, of the whole hive. It enables the keeper to interfere in all sorts of emergencies; increasing the number of bees by artificially creating young swarms; and what is of especial importance to the progress of bee science, can be thoroughly examined with reference to the behavior and habits of the different bees, queens, drones and workers, although there is no glass used in its construction.
Persons familiar with the habits of bees know that one of their most necessary and frequent employments is the expulsion of the over-heated and foul air from the hive. To do this, the bees station themselves at or near the opening in the hive, turning their heads inwards, take hold with their feet and move their wings with such rapidity as to cause a considerable current of air, frequently causing a draft strong enough to be perceptibly felt outside the hive. The improvements in this hive consist in providing it with suitable openings both above and below, by means of which the necessary ventilation can be secured and regulated. One Hive has a gable roof, and at intervals in the upper edge of the side walls saw cuts or kerfs are provided which will be sufficiently wide to afford a passage for the air. A strip is secured between the projecting eaves and side of the hive so as to leave a triangular space extending from end to end of the hive, and thus providing a passage for the air. By stopping up the ends of this passage the ventilation is shut off. Near the bottom of the hive is a false bottom, the side edges of which are also provided with saw cuts or kerfs. At short intervals and in the lower edge of the sides of the hives other kerfs are cut so as to break joints with the first mentioned. The frames are made in the usual manner, except that the upper corners are rounded and project slightly, so that they will fit into a groove in the upper part of the hive and be suspended there, and they can be turned slightly so as to come out easily. There is sufficient space over them to admit the hand so as to remove them when necessary. A flat piece of wood covering two frames is laid over the tops so as to prevent the bees from building above. When these loose pieces are taken out, the frames may be removed. There is a door at each end of the hive which may be opened so as to get at the honey from either end. A portion of the hive may be partitioned off, when convenient, by a piece of board which fits into it. The other hive is similar in construction, the only difference being the flat roof, making it cheaper.
State and County Rights for sale.
Send for circulars to OLE PETERSEN, Oakland, or to

WIESTER & CO.,
17 New Montgomery street,
SAN FRANCISCO.
TO RENT ON SHARES,
Or for Sale, Payments Made from Crops.
3,360 ACRES FARMING LAND,
Lying north of the Merced river, between McSwain's Ferry and Hopeton. Seed, feed and implements found. 2,200 acres were cropped this year. Parties applying will be required to have at least thirty good horses or mules. Apply to
It W. M. RYER, 408 California street, S. F.

BLAKE'S PATENT STEAM PUMP.
BELMONT, Cal., February 6th, 1872.
Messrs. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, purchased of you by Mr. Ralston, I will say that it gives ENTIRE SATISFACTION, even working as it now is, where no other Pump could; for it is at present SIX FEET UNDER WATER, yet it does its work PERFECTLY.
Yours, etc.,
J. E. BUTLER,
Supt. Water Works and Engineer at W. C. Ralston's.
TREADWELL & CO., San Francisco, Selling Agents for Pacific States.
Machinery Depot for Miners, Millmen, and Engineers' supplies. Iron and Wood Machinery; Portable Engines; Mills; Machinists' and Mechanics' Miners' and Farmers' Tools; Sturtevant's Blowers, Turbine Water Wheels, Gardner Governors, Hardware, Rope, Nails, Wire, Hose, Mining Goods, Belting, Packing, Felting, and general Mill and Mining Supplies. 8v25eowhp

THE TRUTH!
A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a First Premium and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.
A. S. HALLIDIE, President Board of Managers.
W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

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Volume IV.]

SAN FRANCISCO, SATURDAY, OCTOBER 26, 1872.

[Number 17.]

Home Manufactures.

If there is any enterprise that deserves to be fostered and sustained by the farming community, it is that which worthily endeavors by home manufacture to supply their necessary tools, and thereby retain, and return indirectly the capital which their products have heretofore brought from foreign lands.

Standing in the lead of such enterprises is the Sweepstake Plow Co., of San Leandro. This institution, founded by J. W. Sursa, the inventor of the justly celebrated Sweepstake Gang-Plow, was purchased by parties in this city in the year 1867, and has been under their management until this time. During this period they have made about 3,000 of the Sweepstake Gangs, and a large number of harrows of all sizes, harrow teeth, two and three horse whiffletrees and the Gem Power Seed Sower, which we delineate in the accompanying engraving.

During the time the shop has been in operation they have given employment to from thirty to fifty men, expending no inconsiderable sum for wages and supplies, and finding a ready market for all their production.

At the beginning of the present year an arrangement was entered into by which F. A. Hill, Esq., of the firm of Hill & Knaugh, of Marysville, became interested, and under his superintendence the company are now manufacturing the well-known Enreka gang-plow, patented by Mr. Hill, the Gem Seed Sowers, Harris' tubular harrow, Sweepstake gang-plows, all sizes wooden harrows, and in fact the principal articles required by a farmer during his fall and winter work.

The patents on the leading and standard implements manufactured by this company are owned by them, and they are thus enabled to protect them from inferior imitations. The present owners have in view the enlargement of the factory and the extension of their lines of manufacture, and with a view to this object propose the formation of a joint stock company to erect a suitable building at some desirable point where the residents are sufficiently interested to extend inducements.

The building in use at present is 60x120 feet; contains ten forges, trip hammer, iron and wood lathes and planers, foundry, etc., and is very complete in all its appurtenances; its capacity when in free operation is ten to fifteen gang-plows per day. We would recommend a trial of the implements made by this institution by those who have not used and already know them to be thoroughly made. The city agency is at No. 13 Front street.

THE RETURNING HERDS.—The thousands of cattle, horses, sheep and goats that in May and June last were driven from the great, lower and intensely heated valleys of the State, to the green and luxuriant pastures of the higher valleys and slopes of the Sierra Nevada, are already slowly making their way westward and downward to their more genial winter homes; sleek and fat for winter keeping or the shambles.

Transplanting Fruit Trees.

On this subject as with nearly every other connected with agriculture, a difference of opinion prevails among even the most practical and scientific. There are those who persistently hold to the opinion that spring setting is in all cases to be preferred.

Their principal argument in support of their opinion being, that when a tree is taken from the ground and immediately transplanted, and then can immediately commence an uninterrupted, unchecked growth, which it can in the spring of the year, that the tree receives less

without the growth of a leaf or the swelling of a bud.

The soil becomes by the winter rains better packed around the larger roots and the tree is in the best possible condition for an early and unchecked growth in the spring. We believe in early fall planting, just as soon after the leaves have felt a heavy frost or two, as the condition of the ground will admit.

Currant-Cuttings.

When should I cut and set currant-cuttings? and should they be set at once in the place

Cuttings set in the spring seldom bear fruit the same year, whilst those set in early autumn often do, and with no apparent injury to the future growth of the bush.

Winter Irrigation.

The subject of the winter irrigation of our lands is one that has already received much attention and from able writers. Hardly a year passes, but we have the importance of it brought home to us, but unfortunately the effect is not lasting and the truths which we are willing to indorse are allowed to pass as of no particular importance at the time and usually because the matter is brought up just at that season of the year, in which nothing can be done to promote it.

When spring is upon us and we have received but a moderate winter's rainfall, and fears are everywhere entertained of short crops or total failure, then people begin to talk and write of the necessity of turning our mountain streams from their profitless channels, out upon the dry and suffering grain fields, and all sorts of plans are devised for carrying out systems of irrigation that will secure immunity from loss, in case of the recurrence of rainless winters.

But it is just then too late for any movement for good for that season, and the following winter happening like the last, to be one of plenteous rain, all previous thought of winter irrigation or any preparation for it is forgotten. We have intimated in our columns that appearances indicate an early and wet winter, but the best

signs fail sometimes, and we may before the first of March next, deeply regret that we had not in many instances made ample provision by dams and ditches for the winter irrigation of our lands.

There can be no harm in making full provision for a supply of water for irrigating purposes, and then it not required the loss incident to the preparation would be as nothing compared to the almost total failure of crops resulting from the scarcity of the rainfall. "In peace prepare for war."

Wheat Shipments East.

Having addressed a letter of inquiry to Marcuse Bros., Yuba City, in regard to their shipment of wheat East by rail, we have received an answer to this effect: That they have contracted with the Boston City Flour Mill, through their agent—Mr. Neeson—who was sent here to ship 1,000 tons.

That the parties had arranged the freight as a private and special contract East, in order to help make the experiment. If it should prove successful, it may help to relieve the market materially, and we are promised the earliest and any information we may desire in regard to it. A considerable portion of this wheat has already gone on, and our doubting commercial neighbor (the *Herald*) may rest assured it is a bona fide transaction.



A BROADCAST SEED SOWER, MANUFACTURED AT SAN LEANDRO, CAL.

injury, a far less shock to its vitality than if set late in autumn to stand the vicissitudes of winter, while yet their roots can hardly be said to be established in the soil.

We differ from the advocates of spring setting of fruit trees in this, that in waiting for spring time, owing to the superabundance of the winter's rainfall, we are obliged to wait the proper condition of dryness in the soil until the tree has commenced its growth, for a rapid circulation of sap commences long before the buds put forth. To take up and transplant under those conditions, is sure to check the vigor of the tree to its injury.

Early fall planting has these advantages—always premising that the soil is in condition for working, which is usually the case immediately after the first fall rains—there is usually more leisure time in which to do this work. You have the first choice of trees from the nurseryman's rows. The soil is never too wet for their setting in autumn.

But the crowning reason for autumn setting is this, that if set any time before the middle of December—we are speaking of the ever unfrozen valleys of California—from the end of every root cut off in the taking up, will immediately put out a number of new rootlets that will make a growth of from three to six inches before checked by the cold of winter; and this

they are to stand, or cultivated one year in nursery-row? These are questions that lie upon our table from a correspondent who intends to engage largely in currant-growing.

As soon as the currant drops its leaves, which is often before this time, frost or no frost, and the ground is in a condition of moisture for seeds of any kind to germinate, secure the cuttings, and place them at once where they are wanted to grow, in good sandy or garden loam, spaded and pulverized to a depth of 18 inches; set the cutting firmly in the ground, to a depth of six or seven inches, and if the soil be very dry, give it a good watering immediately after the setting, and cover the ground with a good mulch of straw or other material, to prevent evaporation, and nine-tenths of the whole will grow.

If it is desired to grow them as small trees, every bud below where you would wish the lower limbs to start, should be cut out down to the very end of the scion under ground, or they will be continually throwing up suckers, from the covered buds. The covered buds of any plant or tree never produce roots, but always shoots for growth above ground. If you would grow bushes, which is the natural form of growth of the currant, and more productive and lasting than the tree form, set the cuttings as they are taken from the mother bushes.

CORRESPONDENCE.

Notes of Oregon.

[Written for the Press.]

Astoria

The mother city of the Northwest still promises at this late day to "go after" her big children and realize the hopes of her worthy founder John Jacob Astor. From the appearance of the place we should guess it had averaged a growth of about ten a year since it was founded in 1811. There is safe anchorage, deep water near the shore, a good climate and good soil for a city, and away back into the rich country stretches the great Columbia. If Mr. Astor could have moved the Willamette Valley up to his city it would have been a success long ago.

Astoria's Hope.

Now, Mr. Holladay will do that thing if he finishes the proposed railroad from Portland. This will lead through the valley of the Nehalem said to be 30 miles by 40, and very fertile. They tell us that some of the best timber in the world is there, with now and then a fir tree rearing its head four hundred feet towards the clouds. Government surveyors are out there now and report that they find a part of the land easily cleared and that the country is much better than they expected.

Lightening the Cargo.

At Astoria was a vessel bound for Kalama with iron for the N. P. Railroad. They were taking out enough iron to lessen the draft six feet so that the vessel could safely pass up the river.

At the month of the Willamette there was considerable anxiety displayed for fear that our steamer, drawing 13 feet of water, would stick in the mud. They had a dredging machine at work there.

At Astoria they claim that masters of foreign vessels expect much better profits when they can unload at Astoria and save lightening their cargoes, and the pilotage, tugboat fees and other charges and delays incident to going up the river.

Record of Disasters.

They are keeping a strict record of disasters occurring at the bar at the mouth of the Columbia. It has so long been under the ban as a dangerous place. For the past five years only one small bark has been lost in crossing the bar and for the year 1871, one thousand vessels crossed the bar and the only accident was the dismantling of the ship "Windward" in a storm.

Mr. John Magrim, a New York pilot, employed by Thos. H. Benton to examine this harbor, compares it with that of New York thus:

Astoria Compared with New York Harbor.

The bar of the Columbia has three feet more water than that of Sandy Hook, 6,000 feet wide and slopes gradually—that of Sandy Hook 600 and shoals rapidly. At Columbia the channel is straight—at Sandy Hook crooked. After crossing the shoals at Columbia there are two good straight channels, while those at New York are narrow and crooked. At the mouth of the Columbia there is a steady wind and no ice. Lighthouse, pilots, steam tugs, buoys, etc., are in good supply.

We speak of the harbor and advantages of Astoria thus in extent because we believe a brighter day will dawn for the farmers of Oregon, when their surplus wheat can be loaded directly upon foreign bound vessels at Astoria and avoid the extra charges incident to reshipment at San Francisco.

The Farmers Waking Up.

The farmers are agitating the question of buying a line of vessels and becoming their own carriers. The cars that carry the grain to Astoria will bring in return the goods to Portland for distribution. With such a start and such a location, both in relation to the Garden Valley of the Northwest and the great Trans-Continental railway, Portland must remain the metropolis of Oregon. We expect to see such manufacturing facilities here as will make a home market for all our grain in the near future and that we shall see the day when Oregon ships will take away more goods than grain.

A Peep at the Willamette Valley

Was gained in a hurried tour through Washington and Yamhill Counties. We found things in a state of rapid development, caused by the new railroad. At Hillsboro, the county seat of Washington County, they are just finishing a fine Courthouse and they have just contributed \$2,000 to start a steam flouring mill at the depot. The mill is now in operation. It cost \$9,000, is in the hands of thoroughly practical millers and is grinding some of the best wheat that we ever saw, which costs 65 cents per bushel.

Washington County Fair.

Just adjoining are the large grounds and convenient buildings of the Agricultural Society, which is said to be the most flourishing of any county society in the State. There was some

fine stock at the stables in training for the races which are to come off the next week.

There have been four thoroughbred horses imported to this State. "Rifleman" was the pioneer, and within a few years have been brought out "Norwich," "Dr. Lindsay" and "Jack Miner." "Norwich" is a brother of "Norfolk," of California.

W. G. Scoggin, of Wappatoo, has a fine stable headed by imported "Jack Miner," whose ancestry on both sides in first generation runs back to stock imported from England. He was bred by J. C. Boswell, Fayette Co., Ky. He is a fine chestnut and has won many a race. At the State Fair he ran a two mile race in 3:53, distancing "Snow-flake."

Then comes "Norwich," a beautiful mahogany bay, three years old, from imported Norwich and a Medoc mare. At the State Fair last year he won the two-year-old stakes, and at the Washington County Fair, last year, he started off sixty yards behind and came first home. "Alli" is a sorrel two-year-old, half brother of Norwich, sired by Jack Miner.

S. J. Stott, Wappatoo, shows "Johnny Miner" by "Jack Miner," and imported Kentucky "Diomedes," and "Young Miner," a son of "Jack Miner" and a draft mare. He makes a horse weighing 1,200 pounds that trots well, runs well, walks well and works well. His hip is two and one-half inches longer than his back.

W. W. West, of Seapoose, Columbia Co., shows a mahogany bay horse of all work, that weighs 1,200 pounds and begins his training on the trotting course at a speed of 3:07. He has a very large two-year-old filly that promises speed.

J. F. Bybee, of Dalles, Washoe Co., shows "Confidence," a three-year-old bay colt by "Norwich" and a Rifleman mare. He ran at Dalles on a heavy track and in a lame condition, in 1:53. He is a nephew of the noted "Harry Bassett." He also shows "Wm. Big-ham," named after the gentleman from Wasco Co. who has brought most of the blooded horses to Oregon. This colt is two years old, a grandson of "Lexington," and descended from "Leviathan." Mr. Bybee's filly, "Lilly Pomeroy," from "Jack Miner" and a Rifleman mare is very fine.

The Dalles are further represented by John Irvine, who shows the "Maid of Wasco," who won the two-year-old race (for \$100) at Dalles, and ran at the State Fair under the name of "The Weasel;" also "Harry Welch," from "Jack Miner" and a Rifleman mare. This horse is a bay, five years old, won the first premium as a thoroughbred at the State Fair; won the three-year-old race at Jackson Co., and got cut down by "Buckskin" at the fair at Albany.

Jas. Quibrie, of Salem, shows "Timoleon," 16½ hands high, of a very mild disposition, and blooded stock.

C. Harris, Amity, Yamhill Co., shows "Golden Charley," a sorrel six years old, who is beginning his training at a three minute gait. His yearlings took the first and second sweepstakes premiums at the State Fair. "Old Emigrant," his sire, made 2:37.

Oregon Enterprise.

B. E. Stewart & Sons of N. Yamhill, have seventeen head of thoroughbred Durhams, five of Ayrshires, two of Holsteins, a lot of Berkshire hogs; and of imported hens, Buff and Partridge Cochins, white and dark Brahmas, Dorkings and game fowls. Mr. Stewart has a very large farm with new buildings and two of his sons settled on adjoining farms. Another son has an extensive herd east of the Cascades in the great stock country. He visited most of the celebrated breeders in the Eastern States, last year, and purchased nearly all the stock enumerated. He bought of J. L. Pickeler, Harritown, Ill., "Baron Bedford," a half brother of the noted "Dandy Jim." He is not two years old, weighs 1,400 and has the advantage of his brother in being a beautiful red. His finest cow "Illustrious" 4th died soon after reaching here but left him the favorite heifer "Orphan Will." Several of his cattle were imported from John & George Miller of Markham, Canada. The Holsteins came from Holland by way of Boston. We have found Ayrshires and to those who asked us to hunt them up we can say that Mr. Stewart has five head, bought from Mr. Wheeler of Canada, and recorded in the English Herd Book. They are for sale at what seems to us a very reasonable price.

Mr. Stewart sells Berkshire hogs at \$25 per pair, descended from the hog that took the \$1,000 premium at St Louis two years since. They have large barns, horse-power cutting box, horse forks, a very fine, gently rolling farm, and improved stock of almost every kind. Just across the road from Mr. Stewart lives Mr. J. J. Burton who raised the premium field of 32½ acres of wheat, yielding 1,457½ bushels, an average of 43½ bushels per acre. Mr. Burton has a grade Durham steer, four years old, that has grown to the weight of 2,012 pounds, entirely upon grass.

Are Blooded Cattle too Dear?

We would ask those who assert that the price of thoroughbred cattle are unwarranted and fictitious, to sit down some rainy day when they have nothing else to do, with their pencil, and make an estimate of how much the infusion of imported blood has raised the value of the cattle of the country. This progress from the Spanish or lean stock to the fine grades seen everywhere in the country, has been due to the efforts of energetic importers and careful breeders. This kind of care has conferred a legitimate value and we need not fear that men of sufficient care and skill to produce thoroughly

well bred stock will soon become so numerous as to flood the market and break down prices.

A city of the future is Cornelius, the temporary terminus of the Oregon Central R. R. There is one of the finest hotels in the State, a large warehouse and about 30 other buildings of quite a permanent character, all grown up since last September. Just back of the town is a large tract of rich bottom land, which we understood, could be had at a low figure, and easily drained so as to be very productive. It seems to us a good investment, especially as the road to Astoria is expected to branch from this point.

Within three miles is the beautiful town of Forest Grove, long known for its educational facilities. Then the Pacific University with a full college course and corps of professors under the able Presidency of Rev. Dr. Marsh who has been untiring in his efforts here for twenty years. It is founded on a non-sectarian christian basis, and those in charge are determined to insist upon thorough culture. We hope the legislature of the State will recognize the fact that a few good schools of the higher order are better than many poor ones and that it is better for the cause of education to sustain and strengthen those already established upon right principles and doing good work, than to build a new college in every ambitious town. Many move to Forest Grove to educate their families.

Poisoning Wolves.

It has been found that poison gives a peculiar flavor to meat that many an old wolf knows. Mr. W. W. West tells us that he has been considerably troubled by wolves among his sheep, and that he had a long struggle to outwit two old gray fellows that had once recovered from a dose of poison. They would take the good meat and leave the poisoned every time. At last he got them by rolling the strychnine in dough and putting dough and all into the meat. He finds that in dry weather it takes about two grains of good strychnine to kill a wolf and in wet weather about three. Too much is as bad as too little. c.

San Luis Obispo County.

EDITORS RURAL PRESS:—A rapid and superficial survey of the county of San Luis Obispo, leaves a rather pleasing impression. In entering the county from the South one is at a disadvantage—from having passed through such garden spots as Los Angeles and Santa Barbara. Nevertheless we will endeavor to do it justice.

The valley of the Santa Maria has only lately been occupied for agricultural purposes, the larger number of the settlers having hardly three years occupancy, and those years drouth and grasshoppers have held sway. There was one ray of hope, however, after a calm survey of the situation; I advised most of the settlers to cultivate turkeys, the only feasible antidote to the grasshoppers and starvation. I will admit though that as nice wheat as we have seen thus far in our northward travels, was on the Santa Maria, how it weathered drouth and grasshoppers is a mystery.

On this broad valley, with the deep bluff banks on the eastward, and the sands of the river bottom almost on a level with the valley over which we had passed for the ten miles since first entering it from a spur of the Coast hills, it was somewhat of a surprise to find that it was from eighty to one hundred feet to water. Very similar is the valley of the Salinas in many places, the distances are so "magnificent" that after crossing the Salinas thirty miles south of Nativity, and traveling along an apparently level road, although there was plenty of running water at the crossing, the first well we stopped at for water must have been a hundred and sixty feet in depth.

But to return to our San Luis theme. It is scarcely to be wondered at that so large a number of shepherds are sent to Stockton; if, as is asserted, this county is the paradise of the shepherds it must also be a heaven for the bedlamite, for it is the most distracted and crazy-looking country in Southern California. After crossing the Arroyo Grande, and ascending the dividing ridge between that and the valley of San Luis proper, a panorama opens to the northward, which would throw an artist into ecstasies, especially if he was a little inclined to lunacy. The valleys are scattered about in all conceivable shapes, and the mountains appear to start up any where at random, and attain quite respectable heights; even in a small space so that a person who owns a league of land has an assortment of mountains, hills, valleys and plains.

The grazing of San Luis is really good in many places. It must, for the number of animals sustained upon a given area, exceed any portion yet traversed. There is quite a mixed husbandry in this country, dairying having obtained a footing, and the cultivators of the soil are making head against the graziers; although wool is as yet "king." There are many ways of managing the dairies, I find in this county. A new feature to your correspondent was the letting out of cows to the cheese factories; price per season, ten dollars and the calf; but the poor calves—it made my heart ache to look at them. I saw fifty that had just been handed over to the owner of the cows as a part of the rent. What poor scrawny apologies for the "makings" of a cow! "Do they ever come ont to make anything?" I enquired of the owner. "Oh yes, they make good small cows," was his reply.

For six months the cows are supposed to average a pound of butter per day, and 2½ pounds of cheese to one of butter, when the milk is all turned that way. Most of the calves are not allowed to suck at all; some bad milkers are given two and even three calves to suckle. A few calves are fed new milk a short time; most of them skim milk; but it is quite evident that under the usual system no improvement in the stock can be expected.

It is also hopeless to expect much improvement in the sheep or wools, as the growers think, and probably with some truth, that so long as they must pasture on the wild lands, which are covered in most instances with burr, any other fleece than a close and short one is impossible. Cultivation in small tracts, and thoroughly, is the only way to make the growing of the finer long staple possible.

But there is, at all events, this advantage to the wool-growers, they do not impoverish their land; for while the cattle carry the richness to the bottoms and watering-places, and deposit the droppings where the rains and floods carry them off, the sheep enrich the hills and valleys alike. A careful observer estimates that his lands, which had been previously occupied by cattle, had, since his advent with sheep, increased the productivity of the grasses one-third, in six years. Our friends in San Luis will soon hear from us more at length.

F. M. S.

Lockport, New York.

EDS. RURAL PRESS:—Please send me a copy of the Press as a specimen. I have read considerable this summer, in regard to the wonderful productions of California, and I wish to see what an agricultural journal has to say about the matter.

If the statements I have seen are true, I desire to close my present business, and locate my family in Southern California; where I can spend my time in fruit growing, especially as I think my health would be benefitted by the change.

A friend of mine here, who has made up his mind to emigrate to the Golden State, requests me to inquire the price of Chili clover seed and where it can be obtained. Respectfully,

J. WILBER.

We comply with the request of our correspondent, and as we are constantly in receipt of letters from parties in our own State, asking the price of various grains and seeds, we would suggest to our seedsmen advertisers that they give to some extent a list of prices of their seeds as is done by Eastern seedsmen. We believe it would increase their sales.

THE WORK DONE BY A HUMAN HEART.—The total daily work done by a human heart is equivalent to 124,208 tons lifted one foot. The daily labor of a workman, deduced from long-continued observations of various kinds of labor, is found to be equal to 3,540 tons lifted through one foot during the ten hours. This is less than three times the work done by a single heart, beating day and night for twenty-four hours. In a boat race, it is calculated that fifteen foot-pounds of work are performed by each ounce of muscle during each minute of the rowing. No muscular labor that man can undertake is more severe than this; and yet this labor is only three-fourths of that which is exerted day and night during life by each of our hearts. If the heart should expend its entire force in lifting its own weight vertically, it could raise that weight 19,754 feet in an hour. An active pedestrian can climb from Zermatt to the top of Monte Rosa, 9,000 feet, in an hour; or he can lift his own body at the rate of 1,000 feet in an hour; which is only one-twentieth part the energy of the heart. The heart's energy equals one-third of the total daily force of the muscles of a strong man; it exceeds by one-third the labor of the muscles in a boat race, estimated by equal weights of muscle; and it is twenty times the force of all the muscles used in climbing, and eight times the force of the most powerful engine of the same size yet invented by man.—*Boston Journal of Chemistry.*

A NEW lamp has been invented by a French chemist which is intended to be used at sea, and is peculiarly adapted to the purpose because it cannot be extinguished by wind or water. It consists of a cylindrical vessel of tin, with a conical point, provided below with a tube six inches in length. The vessel is filled entirely with fragments of phosphide of calcium, and the tube soldered up air-tight, so that the preparation can be kept many years without change. When the lamp is to be used the tip of the cone is to be cut off, and an opening made at the end of the narrow tube referred to, and the lamp inserted in a wooden float and thrown into the water. The water penetrates through the lower end of the tube, and comes into contact with the phosphide of calcium, and is decomposed with the formation of phosphuretted hydrogen gas, which is developed in great quantity, and which, escaping through the open tube of the cone, becomes ignited and burns in contact with the atmospheric air.

THE Wisconsin Legislature did a wise thing during its last session in providing that all doors for ingress and egress to and from public school houses and other public buildings should open outwardly. It is to be hoped that similar action may be taken by the legislatures of other States during the coming winter sessions.

USEFUL INFORMATION.

Popular Fallacies.

Two hundred years ago, that quaint old writer, Sir Thomas Browne, filled two large volumes with an account of what he conceived to be "Vulgar Errors"—*Pseudodoxia Epidemica*—and although modern science has done much to diffuse sound knowledge in regard to the phenomena around us, yet popular fallacies have not, as yet, quite disappeared. Even our text-books of popular science, and many of our so-called scientific papers, continue to propagate and perpetuate mistakes which may well be classed with the "vulgar errors" of Dr. Browne.

The Hair Not Tubular.

Thus nothing is more common than to hear of the tubular character of hair; indeed, almost every one that we meet will, if asked, tell us that the hairs of our head are very fine tubes. And yet every hair is a good solid cylinder—a fact which has been published hundreds of times, but which seems to have no effect upon the popular belief. It is true that a hair, when examined under the microscope, looks something like a tube; but then so does a solid metallic wire—a fine needle, for example. That which give rise to the tubular appearance is simply the bright line which is always seen on every cylinder—a stove-pipe for example, or even a common black-lead pencil. When we take the hair, however, and having cut a slice off the end, examine this slice, we find that it is not a ring, as it would be if cut from the end of a tube; but a solid disk.

Jupiter's Moons.

Another singular idea which has gained very general ground, is, that the moons of Jupiter can be seen in a looking-glass; and if, some bright night, we try the experiment, we shall actually see Jupiter in the looking-glass, accompanied by a very faint star, which constantly maintains the same distance from the planet. Further examination will show us that every bright star presents the same appearance; and if we reflect a little upon the phenomenon, we shall see that the so-called moon is only the faint image of the star or planet reflected from the surface of the glass, while the bright image reflected from the surface of the mercury is what we call the star itself. A lamp or candle held before a thick mirror will present precisely the same appearance. Simple though the explanation be, however, there are few errors that have taken a deeper hold on the minds of the pseudo-scientific than this.

The Sun Drawing Water.

Amongst popular fallacies, a prominent place must be given to those which arise from the actual deception of the senses; for neither our eyesight nor our sense of touch is to be absolutely depended upon. Thus, the beautiful phenomenon known as "the sun drawing water" is caused simply by the rays of the sun piercing a rift in the clouds, and rendered more intense by the prevailing gloom. Few people would believe that actual measurement of the sun and moon, when near the horizon at rising or setting, would fail to show that they are then much larger than at other times; and yet, allowing for the difference caused by refraction, and which is too slight to be measured by any but the finest instruments, actual measurement does show that not only their real, but their apparent sizes are precisely the same at all times.

Animalcules in Water.

Another fallacy which is very prevalent is that every drop of water contains millions of animalcules, and that every pebble, indeed, every fragment of solid matter on the face of the globe, is peopled with myriads of these small creatures. For this belief there is, however, no foundation whatever. So far as animalcules are concerned, most pebbles and fragments of rocks are barren deserts, especially when dry; and good spring-water is, so far as animal life is concerned, a liquid waste. A few stray animalcules may occasionally be found in the water that we drink; but if it is "filled" with animalcules, it is certainly not fit for human use, either as drink or in the preparation of food.

The Silicious Coating of Grasses.

But while most of the fallacies which we have mentioned are due to simple ignorance, there is another class which is based upon a sort of quasi-scientific information, and which are far more dangerous. A good example of these is the opinion generally held by half-taught chemists, that it is to the silicious coating of the grasses and cereals that these plants owe their power of standing up right—in other words, that it is to this that they owe their stiffness. This opinion has been so firmly held by many, that they have advised the addition of silica to land for the purpose of giving stiffness to the straw, and thus preventing the lodging of the grain. Now, when we learn that almost all soil consists of at least one-half silica, we shall see the absurdity of such advice. The truth is, that the stiffness of straw is not due to the silica at all; for chemists have dissolved the silica by means of hydrofluoric acid, and removed it completely from the vegetable stem, without impairing the stiffness of the latter.—*Lestie's Weekly*.

The Matter of Size.

If a greyhound were as large as an elephant, and had the power and stride that would correspond with his size, he would kill himself in running a mile. The material of his frame would not stand the strain. The draught-horse is never a race-horse. Beyond a certain weight, the loss of the fleetness begins. Nature puts her materials into the best forms for securing her objects. The swallow is swifter than the swan.

Ship-builders have found, to their sorrowful and disastrous cost, that above a certain size a ship is profitless. Taking into consideration the material of which ships are made, the modes of handling them, and the needs of commerce, two ships possessing the aggregate capacity of the Great Eastern, are worth twice as much as she. The statement will doubtless be good for all time. There is a limit, fixed by nature, in this matter of size, on all the instrumentalities of human commerce of every sort, beyond which results are unsatisfactory.

There will never be a railroad with a twenty-five feet gauge; there will never be another Great Eastern, and there will never be another Boston Jubilee, of the magnitude of that which closed its performances on the fourth of July. The undertaking was gigantic, and it was carried through with marvellous efficiency. The monster experiment was not a failure in any respect except in the fact that its effects did not at all correspond with its size. It demonstrated the fact that beyond a certain point of magnitude and numbers neither choruses nor orchestras can increase their powers of musical expression. One thousand singers in Music Hall would have been better handled, and would have produced a larger and finer musical expression, than twenty thousand in the Coliseum. We are glad the experiment has been tried, and that it has proved that every city can have just as good music in its own halls and churches as can be had by gathering together the picked men and women of all the cities of the world. Yet it was a splendid experiment too, and none but jealous niggards will fail to award to those who have tried it the great honor that belongs to them.—*Scribner*.

Ostrich Farms.

The raising of the ostrich in a tame state for his feathers is now carried on extensively in Africa. The birds are kept in inclosures, and fed on lucerne, with which the inclosure is planted. Every eight months they are plucked, some extracting the quill at once, and others cutting the quill a little above its insertion, and then removing the roots a couple of months later. The latter method is said to give better results with less injury to the bird. The yield is about fifty dollars per annum for each bird.

In breeding it is found to be best to allow one female to each male, though in the wild state five females are often attached to a single male. There are usually two broods in a year, and the male and the female set on the eggs by turns, the male generally taking the largest share of this duty. The female takes chief charge of the brood after it is hatched. The young are reared on chopped lucerne, and as they get older a little grain is given them; they also require abundance of water and a liberal supply of pulverized quartz and small bones. When grown, no food suits them better than chopped lucerne or trefoil, with an occasional supply of cabbage, fruit and grain.—*Amer. Artisan*.

COURT PLASTER.—Soak brushed isinglass in a little warm water for twenty-four hours; then evaporate nearly all the water by a gentle heat, dissolve the residue in a little proof spirits of wine, and strain the whole through a piece of open linen. The strained mass should be a stiff jelly when cool. Now, extend a piece of silk on a wooden frame, and fix it tight with tacks and packthread. Melt the jelly and apply it to the silk thinly and evenly with a hair brush. A second coating must be applied when the first has dried. When both are dry, cover the whole surface with two or three coatings of balsam.

INK PLANT.—Botanists are endeavoring to introduce and acclimate in Europe a plant of New Grenada, which will be a valuable acquisition to manufactories of ink. The juice or sap which it yields, and to which is given the name of *chanhi*, is at first of a reddish tint, but in a few hours becomes intensely black. It may be used without any preparation. The *chanhi* corrodes steel pens less than ordinary ink, and better resists the action of time and chemical agents. It is said that during the Spanish domination all public documents were required to be written with this ink; written otherwise, they were liable to damage by seawater.

TO DESTROY ANTS.—Fill small vials two-thirds with water, and add sweet oil to float on the water to within half an inch of the top. Plunge these upright in the ground, leaving only half an inch standing out, near the nest or runs of the ants. The ants will come for a sip, and go home to die. No insect can exist with oil stopping up its spiracles or breathing pores.

GOOD HEALTH.

Blushing.

Why do we blush? What is the cause? Can it be prevented? Why do the young blush more readily than the old?

In answer to these questions science comes to our aid and informs us that this sudden reddening of the face is due to a rush of blood into the capillaries of the skin. The influence of nervous conditions is strikingly exhibited by this phenomenon, the circulation of the blood, or rather the action of the heart being responsive to those emotions and passions which have immediate relation to the brain and nervous system.

There is a marked difference among individuals in respect to blushing. One who is very sensitive to praise or blame has large Veneration, Approbativeness, and Conscientiousness—blushes on the slightest occasion; while one with those organs small will be comparatively indifferent to either—will not be moved by censure or by applause, by the powers on earth or in heaven. A vivid consciousness of one's poverty or ignorance, or other imperfection, tends to produce a feeling of humility, and this causes one to blush. Large Self-esteem, with intellect, culture and competence, gives assurance, makes one feel always at home wherever he may happen to be, and this puts one above or beyond the disposition to blush. The old saying that "a guilty conscience needs no accuser," is based on the fact that one under conviction shows it in his face; and a young rogue, when confronted with his wrong-doing, will usually blush just in proportion to his sensitiveness and his consciousness of guilt.

The fact that one cannot overcome his diffidence and look friend or foe in the face, is no evidence of sin or wickedness, as some suppose. On the contrary, it is often the case that the most innocent and virtuous are so bashful that it is next to impossible for them to look even an inferior squarely and steadily in the eye. He soon falters and assumes a downcast look in keeping with his modest and sensitive nature. Self-confidence, for the diffident, may be acquired, and though one would almost sink in his shoes the first time when he appears to speak before an audience, he will, by practice, overcome his timidity, or "platform fever," as it is called, and when used to it, enjoy the slight agitation as a mental luxury. At first he will be suffused with blushes, and his mind will be somewhat bewildered; soon, however, equilibrium takes place and "Richard is himself again."

The temperament also has much to do with our blushing. A nervous, sanguine temperament is much more susceptible than the lymphatic or bilious, and a blonde than a brunette. The African, the Asiatic, and the North American Indian may feel a blush, though—owing to the color of his skin—he may not show it.

One cause of blushing, on the part of some children, is produced by the mode of government adopted by inconsiderate parents and impatient teachers. Instead of mild measures, they resort to the most severe, namely, to that of shaming them. "Oh, you little dunce!" or "You blockhead! did you not know better than that?"—If the child really believes the parent or teacher, it will have a very ill opinion of itself, and sink into a feeling of total unworthiness. What else but a look of humiliation and self-contempt can be expected in the face of one so treated? The parent or the teacher may beget in the minds of children, all the rudiments of dignity, manliness, and so much real nobility of sentiment and soul that he would be above doing a mean act, however sorely tempted.

PREVENTION: As in the effort to reclaim the inebriate, we must look to the awakened moral sentiments, and come under such influences as we know to be right, if we would overcome any mental or physical infirmity like that of stammering or of blushing. We must be careful to do just right between one and another, and between ourselves and our Creator. Then, with a conscience void of offense, and a heart and will in perfect accord with the will of God—loving His service and asking His blessing on all we do—we shall suffer no more from the smiles or frowns of others, nor be crucified by that crushing feeling of unworthiness which causes weak sensitive, and bashful persons to become over-red in the face from a natural or induced tendency to painful blushing.—*Herald of Health*.

SPRAINS.—Bathe in strong mullein tea salted, or apply brown paper saturated with vinegar; keep the paper wet as long as necessary. Nothing is better than the tincture of arnica; wrap the place with a linen cloth, and keep the cloth saturated with arnica. This is also excellent to prevent risings and boils, and to relieve the pain and inflammation when advanced.

CORNS AND BUNIONS.—Burn with caustic, after bathing; repeat, if necessary.

Another remedy: Apply the pulp of lemon until the hard pulp can be removed. Cotton greased with linsed oil or turpentine is very good, it softens the corn.

Quantity of Food to Eat.

People often ask us "What is the proper quantity of food?" This depends very much on what the food is, and who the person is, and what his pursuits are. We doubt not that most people who have the means eat a third more than they really need, and we venture the assertion that if each man of good constitution and health could begin at twenty-one, having been properly fed to that time, he might live to be seventy or seventy-five years of age and not need the aid of a doctor at all. We believe that nine out of ten could do so. But just how a person should live to avoid entirely all causes of disease, no man, perhaps, is wise enough to prescribe. It may be safe to assert that most people who are healthy and hearty eat a little more at every meal than they should. That sense of fullness, that extra heat of the face, and the inclination to be sleepy after a meal, show that it has been too heavy. Most people eat too rapidly, and take in more food than they are aware of. The appetite is not allayed, and they eat as long as they can hold it, because the taste is good.

Suppose one were to eat parched wheat or corn; were obliged to masticate it, moistening by the saliva, having no coffee, tea, or water "to wash it down," he would not be likely to eat too much for several reasons, the chief one being, that while eating so slowly, his stomach would begin to appropriate the food, some of the juices of the food would be absorbed and carried into the circulation and the appetite would be partially satisfied before he had finished. Moreover, there would be a mechanical satisfaction on the part of the stomach. It would take a man perhaps three quarters of an hour to eat as much of that kind of food as would satisfy him. Then he would get exercise enough for his teeth, so that they would be healthy, and all the glands of the mouth would do their work. The stomach would come into healthy action, and the person would be satisfied as soon as he had eaten enough. Doubtless he would eat but little more than half as much in that way as he would to have the wheat ground and made into mush, that could be eaten without the use of the teeth, and a surfeit obtained before the stomach had time to respond.

Persons, generally, who are fat, and are anxious to reduce their flesh, can do so by eating a third less of food than is their customary habit. Some would have to reduce the amount one-half to bring them to a proper standard. This plan would require self-denial; but people undergo, through self-indulgence, and its consequent vexation and annoyance, ten times more to mitigate or rid themselves of trouble than would be necessary to avoid it altogether.

A lady once came to us for a phrenological description whose face was thickly covered with pimples, fiery red blotches, like musquito bites. Thinking we could hardly do her a better service, we asked, at the close of our phrenological description, if she would like to be rid of those pimples. She started with delight and hope, and said, "Certainly; what shall I put on?" We replied, "Nothing; but eat less sugar and butter, eat lean beef and fruit, and keep clear of griddle-cakes and their accompaniments for three months, and your face will be clear and fair." In one month after she came in without a pimple on her face, to show us what virtue there was in our simple prescription. She had doubtless been buying cosmetics at a dollar a bottle for years, greatly to the advantage of the dealer. Like the woman of the Scripture, she became no better, but rather worse.

We eat too much. We eat the wrong articles of food. We have pimples, bilious fevers, headaches, dyspepsia, kidney complaint, liver difficulties, and rheumatism. The old rough statement that "men dig their graves with their teeth," has more truth than poetry in it. If men would use their teeth properly, they could postpone the time for having their grave dug for many years.—*Herald of Health*.

Carefulness in Old Age.

An old man is like an old wagon; with light loading and careful usage it will last for years; but one heavy load or sudden strain will break it and ruin it forever. So many people reach the age of fifty, or sixty, or even seventy, measurably free from most of the pains and infirmities of age, cheery in heart and sound in health, ripe in wisdom and experience, with sympathies mellowed by age, and with reasonable prospects and opportunities for continued usefulness in the world for a considerable time. Let such persons be thankful, but let them also be careful. An old constitution is like an old bone: broken with ease, mended with difficulty. A young tree bends to the gale, an old one snaps and falls before the blast. A single hard lift, an hour of heating work, an evening exposure to rain or damp, a severe chill, an excess of food, the unusual indulgence of an appetite or passion, a sudden fit of anger, an improper dose of medicine, any of these, or other similar things, may cut off a valuable life in an hour, and leave the fair hopes of usefulness and enjoyment but a shapeless wreck.

FARMERS IN COUNCIL

Napa County Farmers' Club.

Club met Saturday, Oct. 12th. President W. A. Fisher in the Chair.

The President remarked that it was not encouraging to see so few present, and hoped that those who had undertaken so useful a work would not allow their interest to abate. As Chairman of the delegation from this Club to the State organization, he begged leave to refer them to the constitution they had framed, and would only say that he, with others who met there, had done the best they could. To be sure, the organization effected was not perfect, but it would be improved as the necessities of the case demanded.

Mr. Nash said this is no time to lose interest, nor to let go. They had taken the first step, and if it were followed up as it ought to be, good results would surely follow. In illustration of the advantage of union he mentioned a circumstance that had come under his observation within the week. The Chinese throughout the country are on a strike for higher wages. They see the amount of work to be done, and the scarcity of white labor, and have concluded to take advantage of it. His cook left him, and he applied at the intelligence office for another, but was informed that he could not get such a boy as he wanted for less than \$30 per month; and that they were being kept by their masters for a month to see if they could not bring the employers to terms. The Chinese are smart enough to take advantage of the labor market, and they are organized so that they can maintain a strike. The question for the farmers to consider is: What shall we do? Must we submit, or shall we test our strength? Can we do without them, or shall we let our work go undone until they consent to work for reasonable wages?

Mr. Saul said that the Chinese labor question was a serious one. Here is a ring—the Chinese one—as formidable as any in the State. There are five Chinese companies in San Francisco, and they dictate wages through their agents throughout the State. He had dispensed with their help as far as he could, but was obliged to have it sometimes, and he did not know how to avoid extortionate wages, if they were demanded. He thought, however, that if the Club would take the matter in hand, and if the Clubs throughout the State would act together, they would bring the Chinese to terms. They have always had too much pay for their work; they are unreliable, because as soon as they get to be of some account they leave; they are independent, because they know their labor is scarce. He thought the subject of sufficient importance to be a special order for some future meeting. A similar state of affairs existed a few years ago among orchard hands. The orchardists had a meeting and determined that they would pay only so much—seven bits and board, he thought—and the Chinese companies acceded to the proposition. He thought that by corresponding with other Clubs and coming to an understanding in the matter, a reduction in the price of labor could be brought about now. For his part he was willing, if necessary, to do without Chinese help a year.

With reference to the Farmers' Union, though one of the delegates, he was unable to attend, and had scarcely had time to examine what they said. There was always a difficulty in beginning such a thing, but now that it is begun, it can grow to perfection by degrees. These railroad grain monopolies are formidable things to cope with, and the only way to do it successfully is by means of an organization. We ought to be getting \$2.00 per cental for our wheat now, but must take just what the speculators choose to give. If this state of affairs is to continue long, we may as well sell out to the speculators and become ourselves their serfs. As it is, we work hard from year to year and have only the poor satisfaction of paying taxes and tariffs. The history of farming in this State this year, would, if published abroad, seriously retard our growth for years to come. Those who are seeking homes see no inducement to come here. They see that California farmers are at the mercy of the monopolists. The remedy he knew not, unless the Clubs became strong enough to influence legislation. The Club is not the place to talk politics, to be sure, but it is the place to state grievances to which farmers of all political parties are subject.

Mr. Gridley thought there was nothing to be despondent about. Farmers were busy and of course the attendance was small, but it would be better by and by. He suggested that the Labor Question be made the special order at some future meeting, and duly announced through the papers. It required some thought, and there were many who would like to be present. For his part he did not like Chinese help—and if it were possible to get along without it, would have none of it. They were always ready to exact an extortionate price wherever there was a demand for their labor. They were good enough until they found out that they were good, and then they struck for wages and left. With reference to the grain monopoly, he thought we were better off this year than

we would be next, unless a great change occurred somewhere. If we have a full crop in California next year, and no better prices in Europe, and no better facilities for shipping, we must take 75 cents per cental for our grain. That price would be better in Europe was not probable, for they are now above the average. We are liable to have a full crop, and he thought we were in a bad fix. He hoped that the Farmers' Union would take the matter in hand, and take the necessary steps to break the power of grain speculators. He further suggested for the good of the Club, that we make our meetings more open; that we invite our wives and sons and daughters in. They might hear some things that would be profitable to them.

Mr. Van Bever remarked that the Labor Question was one of the most profound of political economy. It was thought forty or fifty years ago that the introduction of machinery would cheapen labor, but during all that time the demand for it and the price of it have been on the increase. In Europe there is a class obliged by their fortunes to work for others, they are born into that social condition and have no chance to escape from it. Here everybody has a chance to become a boss. It is the constant struggle of Americans to get above work. American girls won't hire out to work in a family, and yet in many cases it would be the best thing for them. It would be economical, and would be a benefit to them. The same is true of young men. They won't work, if possible to avoid it. They can't all begin at the top—they must learn to begin at the bottom and rise slowly. He knew young men who only worked a few months during harvest and spent the rest of the year playing gentlemen living—nobody knows how. If they would work here as they do in Europe we would be independent of the Chinese. He saw advertisements of girls wanting situations in the San Francisco papers every day, and preferred them to the Chinese, but they would not leave the city. They would be better off if they would take work in the families of farmers. He had worked himself, and thought it wouldn't hurt him any. He certainly did not feel disgraced by it. He did not know what our boys are going to do—they have got the idea that it is disgraceful to work—they won't learn trades, and couldn't all live without work. Some must work to support the rest.

Mr. Nash said that the suggestions that had been thrown out jogged his memory. He heartily endorsed Mr. Van Bever's remarks and would like to have them pondered by every young man in the country. There are men and women in the State now who had worked for him for small wages, who are worth more than he is. There is a lady in Stockton who came to him without a cent, and worked for him six years who is now worth \$20,000. Nobody thinks any less of her because she earned what she has. He had found that those who work for small wages and stick to it are the ones who get rich, while he has worked hard to keep even.

Mr. Fisher thought the labor question was a serious one for the farmers. The Chinese look into this matter more closely and see further ahead than we do. It affects not only the farmer, but all classes; for if the farmer does not save something the merchant can do but poorly, and all the trades are dull. His greatest difficulty had been to find reliable hands. He preferred white men, but could find few to depend on; as soon as they get a little ahead they quit work and go to loafing about town. There are plenty of men about the saloons in town, but they won't work for reasonable wages, and so farmers have to do the best they can. The Chinese see this and understand the situation as well as we do, and they take advantage of it to demand high wages. He approved of the suggestion to bring our wives and daughters and sons to the meetings of the Club. It is a good school for farmers.

On motion of Mr. Saul a general invitation was extended to our merchants and other business men to attend the meetings of the Club.

On motion of Mr. Gridley, it was ordered that the Constitution and By-Laws of the Club be printed for general distribution.

On motion of Mr. Nash the Labor Question was made the special order of next Saturday week, that is the 26th inst., and a cordial invitation was extended to all interested to be present and participate in the discussion. — *Napa Press.*

Vacaville Horticultural and Agricultural Association.

Club met on Saturday the 12th pursuant to call, President Bingham presiding. The Secretary reported the result of correspondence in regard to the cost of fruit boxes delivered at Vacaville; but no definite action was deemed advisable at present, so the box question was left open for further negotiation. It is deemed by this Association that a uniform system in the conduct of the various branches of industry throughout the State is indispensable to the success of its best interests, and in view of aiding in such a result the corresponding Secretary was instructed to confer with all the agricultural clubs, and associations throughout the State, on this subject. E. R. Thurber, George K. Miller and Wm. C. Cantelow were appointed a committee to revise the constitution and by-laws of the Association, and the meeting then adjourned to meet at Vacaville on Saturday the 26th of October. J. HUCKINS, Sec.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The Club met Saturday October 19th, President Casey, presiding.

An invitation was extended to Prof. J. O. Hawkins to address the Club next Saturday afternoon on the subject of "Rust in Grain."

There was a short discussion followed on the subject of City License. The City Fathers, it appears, have increased the license on peddlers instead of abolishing it on the sale of farm produce, as requested by the Club. A motion prevailed, instructing the Board of Managers to investigate and report on the City License System, so far as it affects farmers.

The Committee on taxation reported as follows:

"Mr. President and Gentlemen.—We, your Committee on Taxation, appointed especially to investigate the taxation of growing crops, beg leave to report: So far as we have been able to investigate, we find no ground for the separate assessment and taxation of growing crops, other than exists in the State Constitution. In the judgment of your Committee, all growing things which attach to the soil, whether trees or nutritious grasses, are just as liable to separate taxation, as is grain. In view of these facts we advise resistance to such taxation, and invite the co-operation of all the Farmers' Clubs throughout this State.

We propose to make a test case and to instruct our Secretary to correspond with the different Clubs, to call their immediate attention to the matter, and invite them to inform us of their action, and to give us all the advice and assistance they are able, so as to make it a mutual affair.

C. T. SETTLE.
W. H. WARE.
J. F. HOLLOWAY. } Committee.

The report was laid over for one week.

The question adopted for discussion at the next meeting, is "How can farmers best provide green feed during our long dry season."

The State Farmers Union was next taken up, and postponed to give the Secretary time to correspond with the Secretary of the State Union, that we might officially learn the objects of the organization.

Goat Island.

The Club next discussed at some length, "Whether it would be to the interest of farmers, for the Government to let the Railroad Company have Goat Island." It seemed to be the general opinion that it was for the interest of the whole State, except a few San Francisco speculators, whose exorbitant charges might be lessened by the opposition across the bay.

Mr. Haskell said that San Francisco merchants had been taking the advantage so long, that it is no wonder that they were stirred up by the proposition to make Goat Island the great railroad terminus. It would virtually take the grain trade out of their hands, and cut off a large share of their profits. If San Francisco capitalists will only use some of their smartly gotten gains to build an opposition road, instead of trying to injure those already built, then will they deserve the thanks of all good people.

Mr. Holloway, Jr., favored the railroad, and thought it would benefit the country to give Goat Island for depot purposes.

Mr. Cadwell don't believe in giving any monopoly anything.

Mr. Chapman thinks that San Francisco is trying to grab and grind everything to their own interest, and hopes that Goat Island will be used for railroad purposes.

Mr. Dubois thinks that it is only a question of money, there is no principle at stake. It is only an effort of San Francisco speculators to get rich at the expense of the people of the State, and in fact the whole country is interested in having a proper railroad terminus.

Mr. J. F. Holloway thinks that

San Francisco

Has been badly abused, but she deserves it all and more too. We find that we can only meet monopolies by building up strong companies that are able to compete with them. The business men of San Francisco are blood-suckers, and we can only defeat them by a strong company at Goat Island. But Alviso is our true port. What we have been swindled out of this year, would have built and fully stocked our road to deep water, where we would be independent of San Francisco charges.

Howlers.

Mr. York thinks railroads a great blessing, even when accompanied with monopolies, or controlled by monopolies. The railroad is a great civilizer, it brings friends near together, and promotes social intercourse. Human beings are much the same all over. We grab whenever we get a chance; railroad men are not exceptions. There are those who howl about almost everything; all one has to do is to raise a cry, and plenty are ready to take it up. He don't take any stock in the howl against the railroad company.

Mr. J. F. Holloway has a pick at the Central Pacific Railroad Company. They don't carry as cheap as they can, and then they are going to leave us isolated in a corner by themselves; they are trying to take the travel and trade of the great lower portion of the State up the San Joaquin valley to Goat Island, and cut it off from San José.

Mr. Dixon from his place in the hills east of

San José, presented the Club with a box of fine large grapes; Flaming Tokays and other varieties, for which the thanks of the Club were tendered.

Oakland Farming, Horticultural and Industrial Club.

Mr. Montandon on Arboriculture and Discussion Thereon—[Oct. 4th—Continued.]

[Reported for the PACIFIC RURAL PRESS.]

Dr. Carr—"For a peach orchard would your treatment be different?"

Mr. Montandon—"No, except I wished to increase the quantity. By proper treatment of a large tree it will prosper just as well as a small tree, but we cannot attend to it so well and the fruit will not be as good. We will however improve its quality. I have observed that trees around the Bay grow slowly and cannot be pruned early. By accustoming themselves to give to trees certain shapes and forms, horticulturists not only learn themselves to prune them and improve the quantity, but they enjoy a certain quantity of fruits, where they could have none did they let them grow in a native state.

We Plant Trees too Close.

Here. We ought, to judge of the vegetation that a tree will have at a certain age, and plant them accordingly.

Mr. Hyatt—"I do not approve of summer pruning here, because you cut off the shade and in this hot climate we want the leaves for shelter."

Mr. Montandon—"I have been in hot climates and have seen the leaves develop themselves so closely as to cover the whole tree. By your method the bark will harden, and it becomes more difficult for the sap to circulate freely. By my treatment you will cover the mother branch and all its ramifications. In a warm climate you may plant a peach tree along a wall and it will live. By allowing long branches to grow up they will injure the tree and it will become like a person in a state of consumption. On the apple tree if there is not a single fruit bud we can compel it to develop by pruning. It never injures by close treatment, nor will the branches denude.

Without Study

We shall never have any practical results. Even in the public gardens at Washington, the gardeners only obtain results accidentally.

When to Prune Pear Trees.

At the end of July we must take a general look at our pear trees. There will be certain little branches which, without having a fruit bud, form like these. [Holding up a branch.] If the tree grows strongly we may not cut about the 15th of July—if not we may leave them till the 15th of August. Then the sap is slower, and we may trim off these wood branches, though we generally prune not so close as on strong peach branches. We may then prune on four or five leaves, and by next April we will have ten, perhaps twenty good fruit buds. If we prune on the 15th of July, by the opening of the wound we cool the sap, which will go into the fruit buds, and make them wood buds. If the tree does not grow powerfully we must not trim on the 15th of July, but on the 15th of August—the vegetable power being less, it will develop itself in a superior manner, and the lower buds will also develop themselves and form fruit buds. In weaker trees on the 15th of July the tree being in its last state of the full power of vegetation, if we trim on four or five leaves, there will open under the wound a second bud, which will develop itself as a wood bud. On the 15th of August when we trim, we compel fruit buds to develop themselves more powerfully and make them finer at the time of pruning in Spring. If we treat trees well previously, Spring pruning will be merely the clearing out of the buds."

Mr. Pryal—"Is your system intended for

California or France.

Mr. Montandon—"It was first applied in France, but the principles will apply to any country."

Mr. Pryal—"I have pruned in California twenty years, and have pruned differently. In California if they were not pruned for the first two years, there would be no occasion to prune at all. There are hardly two varieties of apple or other fruits that take the same method of pruning."

Mr. Montandon—"Improvements are reaching everywhere of course. A medical officer in a hot climate will change his mode of treatment somewhat, but the principles will remain the same. In vegetation also the worker must adapt his treatment to circumstances. We have various climates in France, and yet we adopt the same general system of pruning. In taking up the subject I did not mean to explain the system of pruning as adapted to France, but to state the general principles adapted to all countries. There is always a prejudice against new discoveries. A treatment that is to succeed everywhere must study particular climatic influences."

Mr. Hyatt—"How do you treat the orange?"

Mr. Montandon—"I have never cultivated it

save for ornament. I have never been employed at it."

Mr. Pryal—It is a well known fact, that if they trimmed their trees in Sacramento as they do here, they would have them killed.

Mr. Montandon—A man who understands nothing on the subject may succeed by chance, but by my treatment he will succeed every year. In some countries when the frost comes hard, the gardeners protect the trees by making fires, the smoke of which the wind diffuses amongst and around the branches and fruit buds.

Mr. Pryal—In California, peaches, apricots and nectarines

Grow Better Without Pruning.

In Delisherry's garden there was always fine fruits. A man once went in and thought he would prune. The result was that the next year there was no fruit. But where they were left unpruned there was a good crop.

Mr. Montandon—After too much pruning gum oozes from the trees, and the places where it oozes becomes to the tree like places on the human body where there are sores, and the tree will die.

Mr. Pryal—In this climate trees do not grow too much, and do not require much pruning.

Mr. Montandon—My pruning is a general assimilation of the useless wood. I can compel it to develop itself usefully.

Pruning Oaks.

Mr. Hyatt—When do you prune oaks? I have in my place trees that have entirely new tops, which have not been cut, while others have died.

Mr. Montandon—I do not know much about the oak. We must generally observe the time of flowering. It is bad to prune trees that have bloomed. Peach trees though can be pruned while they bloom; apple and pear trees never.

Mr. Pryal—October and November are the best months for pruning oaks. I have pruned some, and I was astonished to find how they held during these months.

Mr. Montandon—Oak should be pruned while it is in its dormant state.

Mr. Dewey here stated that he thought a gentleman giving an address on a subject ought to be allowed to finish it before the matter of the address was questioned.

Mr. Pryal said he thought that Mr. Montandon had finished.

Mr. Montandon—"Those who bring forward new inventions or discoveries always are surrounded with difficulties. When Fulton ran his first steamboat to Albany the people called it Fulton's Folly. Now the same people admire him. I have been in England, Germany, and Switzerland and have found that

They do not know how to Prune Fruit Trees.

But the most aristocratic gentlemen there do not disdain to go and hear lectures on pruning. I have met any number of gardeners in the United States, and I have not found one who could tell me why he pruned as he did. Mr. Pryal told you how he pruned oaks, but he could not tell you why he adopted it, or why he attained such results. When a tree grows weakly as an apple or pear it is necessary that it be pruned in July, and by pruning its summer branches the upper buds will be wood buds, and the lower ones fruit buds. The pear only develops once in two years, and we cannot expect to have fruit the following spring. If we want to get trees a certain shape, we must adapt ourselves to circumstances. By contracting, etc., one may influence a certain branch to the benefit of others. If we allow the upper branches to develop more than the lower ones the latter will gradually die away while the upper will take all the vigor of the tree. If we want to develop the lower one, we must bow the upper one down and tie it so. Then the sap will be compelled to come into the lower branch. When this branch becomes strong, we may allow the sap to return to its natural course. We ought to have one branch about 10 inches from another in the apple and pear trees, about 20 inches in the peach tree. By summer pruning we will have the mother branch full of fruit buds. I can kill the most powerful tree in three years by over bearing."

Mr. Pryal—"By thinning the fruit on the tree is not the former improved?"

Montandon—"Certainly."

Mr. Pryal—"If they prune too much around the tree it will be killed."

A discussion here ensued between Messrs. Pryal and Montandon, in which the former advanced the opinion that if the latter had been twenty years in California, he would have a different opinion as to the proper method of pruning. Mr. Montandon thought that his experience here convinced him to the contrary, and as a proof of the superiority of the principles advocated by him, said that in the fruit penicillin to the latitude of France, that country had taken the first prize in all the exhibitions in the world.

Mr. Montandon subsequently stated in answer to Dr. Carr, that similar principles applied in the cultivation of nut-trees and of the olive, and promised at some future evening to give the Club the benefit of his experience in table fruit culture.

This terminated the lecture and discussion. A unanimous vote of thanks was accorded to the lecturer.

Scale Insects.

Dr. Gibbons will deliver a most interesting lecture on this subject, on Friday evening, October 25th. As it is a subject which should command the attention of all horticulturists, we expect a large and attentive audience.

Sacramento Farmers' Club.

At the meeting of the Farmers' Club on Saturday, the 19th inst., Captain William M. Haynie, in the absence of the President, was called to the chair.

Co-operative Grocery Store.

Aiken reported that the Joint Committee of Farmers' Club and Mechanics' Association had perfected a constitution and articles of agreement for the organization and management of a co-operative grocery store, and the same had been adopted by a joint meeting of the two associations. That the matter of completing the organization by preparing and filing articles of association and opening books of subscription had been referred to the same committee and this work would soon be done.

The subject of

Drying Fruit.

Being called up, Greenlaw said he had had some experience in drying fruit in this country by hand and in the sun, but had not been able to make it pay. Until some mode of handling and paring and cutting up fruit more rapidly and cheaply than is now practiced is discovered, or until labor can be obtained cheaper, and until some better mode of drying is invented, fruit drying in this State will not become very profitable. He had found it to pay better to feed it to hogs and sell the pork.

Aiken—My experience has been the same as Greenlaw's, except as to plums. I have found the drying of plums even in the sun to be profitable. Plums do not lose so much as most other fruit, in weight, by drying. From three to four pounds of green plums, of most varieties, will make one pound of dried, and while green plums cannot be sold for more than two or three cents a pound, green dried plums will sell for from twenty-two to twenty-three cents a pound.

There is some skill required in drying and preparing plums for the market, to give them the highest value. I can buy plums, treated in the ordinary way, that are worth only sixteen to seventeen cents a pound, and put them through an additional process and sell them in the same market for twenty-two and twenty-three cents. People generally dry plums too much, and make them too hard. I dry them in the sun until the pulp seems to have parted with all the water, and is somewhat sticky. I then gather them up and, placing them in a sack, dip them while in the sack into boiling water for about one-half or a quarter of a minute. I then lift them out, let them drain well, and then spread them in the sun again, as before, until the water is again thoroughly dried off of them.

They are then gathered up in a sack, basket or box and stood one side till next day, when they are put into the box in which they are to be marketed or stored for use, and subjected to a pretty hard pressure in my cider press. The hot water softens the skin and starts the sugar, and when opened for use plums thus treated will be found covered with a beautiful coat of sugar, and will possess the perfect flavor of the ripe undried plum, and will always command an extra price in the market. This process also secures the fruit against the danger of being injured by insects when set away.

Figs require to be treated in about the same manner as plums, and unless so treated they are not of much value when dried. By treating them in this manner, however, they are the best fruit we have. I have never treated any other fruit in this manner and cannot say what would be the effect of such treatment on pears and apples. I make raisins by picking the grapes when they are fully ripe and spreading them in the sun, and turning them three or four times until properly dried. Have never scalded them.

Have never had any experience in drying fruit in a drying-house, but believe we should adopt this plan of drying fruit in this State. I intend to make fruit drying to some extent a specialty, and have been selecting varieties of fruit for that purpose. I know of no department of the fruit business presenting a better prospect than this, with the proper varieties and proper facilities.

Haynie said a man by the name of Stevens had invented a process of extracting the water from fruit by passing heated air through it, and had bought whole orchards in Santa Clara county and was now engaged in drying the fruit. He had also invented a machine by which one man could do the work of three or four men with any other machine in peeling and preparing fruit to dry, especially fruit which has pits.

Hoag—There was some fruit exhibited at the State Fair—some twenty varieties of fruit and vegetables—exhibited by L. A. Gould, of Santa Clara, which had been cured by a process similar to that described by Haynie. The fruit seemed to be in excellent order, and it was claimed by the exhibitor to be much superior to sun dried fruit. The following is Mr. Gould's written statement:

Dessicated or Super-Matured Fruit.

This fruit is placed on galvanized wire cloth in close rooms that will exclude all dust and insects, then a heated current of air is forced through it, by a powerful exhaust-fan, and the super-maturation is completed in from three to six hours. This quick process cures the fruit before it has time to go into the fermenting stage. All sun-dried fruit goes through a thorough fermentation and decaying process, in-

parting a vinegar acid taste to the fruit, that gives the well known disagreeable dried fruit taste. Dessicated fruit is fresh fruit, and when cooked is superior to green fruit that has not been treated by the super-maturation process.

Rutter said his experience as to drying fruit in the sun was the same as stated by others—it did not pay. He found it necessary to use 1,000 feet of lumber to dry a ton of grapes, and to dry all the fruit and grapes he raised each year it would require about fifty acres of land to expose them to the sun. He laid his lumber directly on the ground. He wanted to have the fruit as close to the ground as possible, and had thought a canvas laid directly on the ground better than boards, as the ground being warm helped the sun to dry the fruit. To dry fruit extensively he would have some other process than the sun—this is too slow and expensive. His neighbor, Carrington, cured his raisins on the vines. He twisted the stem so as to stop the circulation of the sap, and let the bunch hang till cured. This plan seemed to work very well.

An Experiment.

Haynie said his hop-house was now in good order, prepared with wire cloth boxes, furnaces and everything ready to put in the fruit and build the fire to dry it, and he would like to see the experiment of making raisins by heated air tried, and would give any one the use of house and all the fixtures for the experiment.

The proposition, in a modified form, was accepted by Rutter, who is to put one ton of Los Angeles grapes, and some of other varieties, in to the house on Wednesday morning next and Haynie is to put them through the drying process. Other members of the club volunteered to furnish other varieties of fruit for the same experiment.

The hop-house of Haynie is across the American river, a little above the bridge, and it is likely quite a number of fruit growers will visit it to witness the experiment on Wednesday.

A committee, consisting of Haynie, Rutter, Greenlaw and Davis, of the Sacramento Union, and Hoag was appointed to attend the experiment and report to the club next week, at the regular meeting on Saturday.

International Exhibition in Philadelphia in 1876.

The following has been placed in our hands for publication:

OFFICE U. S. CENTENNIAL COMMISSION, PHILADELPHIA, Pa., Oct., 1872.

I. N. Hoag, Secretary State Agricultural Society, Sacramento, Cal.: The Anniversary of the Independence of the United States in the year 1876, is to be celebrated by an exhibition of the products, arts and industries of the country, and of the world. This is in accordance with an act of Congress approved March 3d, 1871. By this act the task of preparing and superintending the exhibition was imposed upon the United States Centennial Commission, consisting of two members from each of the States and Territories. The Commissioners have twice met in general session, a permanent organization has been effected, and the chief outlines of the plan for the exhibition have been agreed upon.

This exhibition is to be international and universal—international inasmuch as all nations will be invited to participate in it; and universal, because it will include a representation of all natural and artificial products, all arts, industries and manufactures, and all the varied results of human skill, thought and imagination.

The outlines of a simple yet comprehensive classification have been adopted. There will be ten departments, each subdivided in ten groups, and these again into classes. The details of this classification are now being elaborated and will be published in due season, together with such rules and regulations as may be found necessary for the proper conduct and management of the exhibition.

It is intended that ample space shall be assigned to each State, Territory and foreign country for a just and proper display of their products. It is believed that not less than fifty square acres of floor space under roof, will be required for this purpose. A site combining the advantages of a sufficient extent of level ground, with picturesque and cultivated surroundings, easy of access by rail, water and by ordinary roads, has been assigned for the buildings and grounds at Fairmount Park in the city of Philadelphia. The exhibition will open in April and close in October.

Each State of the Union will be expected to send its peculiar products, illustrating its resources, both developed and undeveloped. A complete exhibition of this kind by all the States will afford the means of comparing their industrial condition and capabilities. The products of mining and agriculture will occupy a large portion of the space allotted to each State, and will receive their just share of attention in this universal display.

An undertaking so patriotic in its conception, so vast in its proportions and so useful in its results, commands itself to the hearty sympathy and support of intelligent people. Patriotism, as well as an appreciation of the industrial, educational and moral influences of well organized exhibitions, should impel all citizens to lend a helping hand. It is the duty of the Commission to prepare the way and open the doors, but the people, in their sovereign right and strength, must make the exhibition. By their aid alone can it be made a just and comprehensive display of the industrial, intellectual

and moral development of the nation during the first century of its existence.

The Commission not only relies with confidence upon the aid of the people in general, but it hopes to receive the co-operation of the many State societies and organizations which for so many years have aided in directing and realizing the popular demand for agricultural and industrial exhibitions. The desire to secure at an early date your efficient co-operation has led to this communication, which is made at the request of the Executive Committee of the Commission.

Permit me to suggest that the facts herein stated might with great advantage to the exhibition be communicated as publicly as possible to your members and exhibitors, and that, if agreeable, they should be incorporated in your printed reports. A committee of your members might be appointed to consider and suggest such measures as may appear most desirable to promote the success of the object for which the Centennial Commission is appointed. A general plan for the organization of Co-operative Centennial Associations in the several States and Territories is now under consideration, and when perfected will be published for distribution.

Please acknowledge the reception of this communication. Very respectfully, your obedient servant,

WM. PHIPPS BLAKE,
Executive Commissioner.

Shad-Hatching in 1872.

So far as we know, the only rivers in which shad are hatched are the Connecticut, the Hudson, and the Merrimac, and this is the sixth season of the use of Seth Green's hatching-boxes—a discovery that is likely to do for the food supply of the nation what Whitney's cotton-gin did for its clothing. About 8,000,000, of shad-spawn were hatched in the Hudson last year, and we learn, unofficially, that the number is considerably exceeded this year. Of the number hatched, 220,000 were put into the river above the Troy dam, 80,000 into Lake Champlain, 20,000 in Lake Owasco, 50,000 in the Genesee River, 30,000 in the Alleghany River at Salamanca, and 25,000 in the Mississippi River, two miles below St. Paul. The remainder were turned into the river below Castleton. The operations began May 18th ended July 2d.

The ova hatched in the Connecticut last year were over sixty millions. This year operations did not begin until the 24th of June, and ended on the 18th of July—less than four weeks. The fish were larger and finer than ever before, and the hatch of spawn was ninety-two million sixty-five thousand, a third more than was taken last year. The hot weather of the early part of July had such an effect upon the females, that the average number of ova from each one was greatly increased. Of this number 2,000,000 were sent to the Alleghany, White, and Platte Rivers, a half-million were distributed in Rhode Island waters, a half-million were sent to the Saugatuck, and about the same number to Great Brook, in Groton, Ct. All the rest were turned into the Connecticut, just below Hadley Falls. This enormous addition to the finny tribes was made at an expense to the State of Connecticut of about five hundred dollars. If the improvement of only two of our shad streams for five years has resulted in the reduction of the wholesale price of shad in New York to \$3.50 per hundred, what may be expected when all the States turn their attention to this business, and Seth Green's hatching boxes are in use upon every shad stream in the country? Is not cheap food for the coming millions a problem already solved?—*Am. Agriculturist.*

ANOTHER ARTIFICIAL STONE PATENT.—At the State Fair we examined with interest and satisfaction, a modest yet highly important exhibit made of the Union Stone Co., manufactures, by Geo. G. W. Morgan, of Sacramento. The imitations of malachite, and other fancy and fine varieties of stone, were very beautiful, and must be seen to be appreciated. The Sacramento Union noticed the display as follows:

One of the most remarkable inventions of the age is to be seen in the lower hall. It is a series of specimens of artificial stone. Here we find soapstone, sandstone, granite, marble, and imitations of ivory. Among the samples is an elastic stone ball, or billiard ball, which you may throw into the air and let it fall a hundred times without breaking. Maj. Gen. Gillmore, the eminent engineer, who had charge of the United States forces before Charleston, South Carolina, was detailed by the Government to investigate into the subject of building stone, and reported as follows, the figure representing the crushing weight per square inch in pounds;

NATURAL MATERIAL.

Granite, Patapasco.....	5,340
Granite, Quincy.....	15,300
Marble, Montgomery county, Pennsylvania.....	8,950
Sandstone, strong.....	5,500
Sandstone, Connecticut.....	3,319

ARTIFICIAL MATERIAL.

Brick, first quality hard.....	4,368
Beton, Coignet's.....	7,500
Concrete, Ransom's.....	6,720
Sorel Stone.....	4,500
Sorel, Union Stone Company.....	21,562

The patent right of the State is for sale, and we hope the opportunity to purchase it will not be allowed to pass from Sacramento. By the above report of General Gillmore it will be seen that this invention is greatly superior to all other similar inventions. It is said to be very cheaply manufactured. Surely here is a great chance for somebody.

Natural History of the Animal Kingdom.

While Professor Agassiz was in this city he delivered a lecture before the California Academy of Sciences, a synopsis of which we gave in our issue of Sept. 28th, at the same time promising to give it in full as soon as the diagrams could be prepared to accompany it. The Professor's slightly foreign accent and construction of sentences is suggested by the literal transcript from the short-hand notes of Amos Bowman. After a few general remarks, the Professor took up the subject of the "Natural History of the Animal Kingdom" as that with which he was most familiar. He said:

As it is generally understood, the study of this subject consists in being made familiar with the variety of animals which inhabit the surface of our globe, with their mode of life, with their uses and purposes, with a sketch of their relations to one another. But now-a-days the efforts of naturalists go far beyond that. We aim at nothing less than understanding how they came to be called into existence. What are their relations to one another, not only, but to the world on which they live and to the cause from which they rise? And it is not to be wondered at that upon dealing with such a comprehensive subject, opinions should vary, and there should be

Mighty Conflicts

Among the most earnest and devoted students of nature. Do you not disagree in your deliberations concerning the welfare of your fellow-men? Why should we, who are dealing with subjects perhaps of greater difficulty—certainly, with subjects which have attracted attention for a shorter time—to be at once agreed on every point? We have no greater power with which to treat these subjects than an able lawyer has, dealing with his case, than a physician has, dealing with his patient, than a divine has, dealing with questions of a greater import to every human soul. And these powers being limited, it is natural that our results should frequently be conflicting, but the more conflicting they are, the more likely are we to be stimulated to renewed efforts and to greater and more comprehensive application.

I will not attempt to define animal life. I will not attempt to compare animal life with vegetable life. I will only at once proceed to show you what we know generally concerning

Resemblances Among Animals,

And on what these resemblances are founded, that you may realize how it is possible for a naturalist to become familiar with this host of living beings which inhabit the surface of the globe. There are several hundred thousands of them, several hundred thousand different kinds of them, inhabiting the surface of the globe, and yet all these hosts are built on a few patterns so simple, so easily understood, that every child ought now to know how to distinguish these patterns, these plans of structure, with the same readiness with which it defines a square or circle. And there is no more difficulty about it than there is in understanding the most elementary facts of geometry or arithmetic. The only difficulty lies in the fact that

There are no Teachers;

That the community lacks teachers in this department; and wherever there are a few educated, they are at once swallowed up by the numerous institutions of learning which are organizing everywhere. And we cannot educate a sufficient number of them, for the simple reason that there are other walks in life which are more promising in the rewards they secure to their devotees. Science is always behind-hand, and yet it is she who furnishes the primary material for all the progress in modern times.

But to return to the animal kingdom, this great diversity of thought from man through all the range of quadrupeds, birds, reptiles, fishes, shells, crabs and insects down to the simplest polyps, their immense diversity as to number can really be brought down to four simple plans, and these plans may be expressed in formulae which are of the simplest nature.

Suppose I take for the first [walking to the black-board] animals which go by the name of

Radiates,

Their organization corresponding to the idea involved in that name. All their parts stand to a central axis, like the rays to a centre. Nothing will give a better idea of one of them than a star fish, where we have an animal provided with a mouth at the center, having a large sack into which that mouth leads, and from it a number of sacks, extending into those rays, at the end of which there is to each one an eye, a ring of nerve around the mouth, which sends a thread to each one of those rays a number of little bags, which terminate in suckers, by which the animal is set in motion; by which you can see repetition of identical parts around the common center. And this idea of radiation, assumes the most diversified forms; whether it be that sea urchin, in which we have the same general arrangements again in which only the form is that of a sphere instead of being that of a star; or that of a polyp, in which we have something of a cylindrical body with a number of rays around the summit, around the mouth the same opening into a sack which communicates with the same cavity; or be it a jelly fish, which has a secular disc and central cavity with channels extending to the

periphery, and communicating with a circular ring and other appendages hanging down upon the margin.

You see everywhere a repetition of the same idea; radiation around the center and a repetition of the identical parts around a vertical axis. And the number of these animals is about as great as that of any type of animals, but they are all aquatic; most of them with very few exceptions marine, and therefore less known to the casual observer. We distinguish among them

Three Classes,

Polyps, in which the body is a simple bag, as I have represented here; that of the jelly fishes *acalephae*, in which we have a central cavity with tubes radiating from it; and that of the star fishes, or sea-urchins, or echinoderms in which there is an internal cavity and external envelope. So you see here a regular gradation amongst these three classes; the *polyps*, the lowest; the *acalephae*, next; the *echinoderms*, highest. And the fact that they keep this gradation can be rendered more plain by taking the time to enter into details of their structure. To show for instance that we have a well marked nervous system in star fishes and polyps, we have only to observe that the locomotive organs are at the same time organs of digestion, in fact performing all the functions necessary for the maintenance of life. While in the next higher class, the *acalephae*, we have already some division of labor in the fact that there is a central cavity in which the food is received and elaborated, and from which it circulates into those tubes through the whole of the system, to return to a center, while the refuse matter is thrown out through the same cavity in which the food was introduced. Now in those others, the star fishes, the sea urchins, the isolation of the nervous system, their position in a central cavity surrounded by a distinct envelope, show still a higher position. I may therefore say that in that type of animals in which radiation is the fundamental idea, we have three classes in which a different application of organs shows the relative standing; and that this may not be overlooked as I proceed in my argument I will write down these few subdivisions here. [Advancing to the board and writing.]

Radiates, with three classes, being *polyps* *acalephae* and *echinoderms*.

All these animals are scattered over the whole surface of the globe, and may be found from pole to pole in all latitudes along our shore, and in the depths of the ocean, swimming in medium depths or scattered over the surface of the sea. The next group, which has a very different constitution, is that of the

Mollusks;

They are soft animals; may be protected by a shelly envelope, forming a sort of bag in which all the organs are contained; of which our oyster gives a very good example, and in which the organization is about such. Suppose we have here an oyster from which one of the shells are removed; we see here a ligament by which two shells are united with one another—if you look in a transverse section—that being the cavity occupied by the fleshy part of the oyster; there is a large fleshy mass which is commonly called the eye and muscle; a fleshy bundle which unites the two bands to one another, moving into one another; a skin lying in the shell, all over, and by the secretion of which the shell itself is formed. Suppose that I lift it, you shall see that under it will have formed another layer, the margin of which is fringed all over. It has a respiratory organ which extends all around; of these there are two, one within the other; and within this upper part we have the digestive cavity with its appendages, the liver surrounding the stomach, a heart, which is placed above the intestines sometimes surrounding it, and the reproductive parts filling the remainder of the cavity. And in all of these

Kinds of Structure

We have also three gradations, the sample of which is that which I have represented here in the case of the shell, which we call bivalve *acalephae* from the fact that there is no region in which a distinct head could be recognized. But the moment we proceed to a higher grade we find there is developed below a fleshy mass; that in front there are appendages around the mouth, extending forwards and receding upwards; that the shell is united in one simple, continuous shield and that under it those parts which hang loose below, are drawn up, and sealed on the general envelope. And we rise as it were to the condition which we have in the snail, in which, in a snail coiled up, all those parts are now enclosed, and in which this fleshy mass represents the organs mentioned, and there are appendages around the head and these feelers extend forward, on the summit of which may be seen eyes. There is no organ there which we have not here; it is only raised to a higher condition of existence. If we add to that the state of things which we observe in the cuttle fish the difference consists mainly in the fact that these two feelers are reduced to a lower position, but the eyes are largely developed and the body is separated from the rest by a constriction here; on the sides we have two wing-like appendages; the food is transfused into a sort of syphon with an opening through which the water may be ejected so as to help direct the course of the animal; and around the mouth a number of arm-like appendages which serve as organs of locomotion and as organs for the apprehension of food. This is what we call squids, cuttle-fish and the like, and which are occasionally called in this neighborhood, I understand, "devil fish."

Now these are the three groups of *Mollusks*, the three classes, *acalephae* or bivalve, *gastropods*, the *cephalopods* (?) and *cephalopods* or squids and the like.

Why I aim at reproducing these details you will see presently. The next kind is that of the

Articulates.

The name *mollusks* applies well to these animals, you perceive, from the fact that most of them have a very soft body, even though they are protected by a hard shell.

The third type is that of the *articulates*; and here we have a totally different idea and body, in the structure of these animals. The body is a cylinder divided by transverse ridges, in which are a number of rings, movable one upon the other—such are all the worms—for these rings are combined in such a manner as to form two distinct regions of the body; an anterior one to which there are distinct locomotive appendages; and a posterior one which is more distinctly articulated than the other, with fins, (feet) underneath. The type is that of the lobster or shrimp, and the like. And the third representative of this class in which the body is divided into three regions: this includes the insects. Now you see at once here again, (see cuts), a complication of structure from the more simple uniform cylindrical body of the worm, and the cylindrical body of the shrimp or crab, in which the division of the body into two regions is distinct, while in the worm's, wherever there are locomotive appendages, they are all alike.

In the insect kind there are three divisions of the body well marked; the first representing a sort of head, the middle a sort of chest, and the hind one a sort of abdominal region in which the articulations are distinct. Here again I may mark down three kinds; the worms, *crustaceae* and insects. Without going any further you perceive at once that it is a totally different idea which is embodied in these animals, in the *articulates*, from that which is embodied in the *radiates*, not to speak of the *mollusks*, the organization of which is perhaps not so easily understood without a more extensive acquaintance with

Comparative Anatomy.

To take the *radiates* by themselves and compare them with the *articulates*, you see at once how totally distinct the plan of structure of the two groups of animals are; and that their original ideas which are at the foundation of all these, are perfectly plain to any one who chooses to analyze these things. It is not an mere fact that there are worms here, and that there are insects there, and *crustaceae* there, and that these animals are scattered all over the globe. They are connected with one another by an idea which the human mind is capable of comprehending, of reducing to the simplest formula, to a formula so simple that it may be understood by a child.

And now let us look at the other animals. How does man stand in nature? What are his relations to the other living beings which exist on earth by his side?

That position is easily determined, and that not from any very extensive acquaintance with the subject. You can reduce man to the

Structure of a Fish

And you will find he has nothing but what the fish has. And there is a gradation from the fish up to man which is perfectly simple. Here we have a backbone, which is the foundation of the whole structure. Upon the backbone rise spines which extend the whole length of the back; under the backbone are other spines which extend all along the lower side of the body, [See cuts.] and that is surrounded by flesh; and upon the flesh is a distinct skin. Now let us examine what are the relations of these parts in a transverse section. [See cuts.] If we cut a fish across in that way we find that the backbone forms a solid center here, that these spines constitute an arch above; that that arch embraces a cavity in which is the spinal marrow; that another arch below surrounds the intestines, and that the flesh which is attached to these spines occupies the whole outside of the fish.

Whether we make a section through the head or through the tail, we shall find the same elements; only in the head, that cavity which is above the prolongation of the backbone is enlarged and represents the cavity of the skull; the spinal marrow all along here swells and enlarges in the head into a brain, and in the lower cavity where we have under the tail merely a blood vessel, we find that in the abdominal regions we have the intestines; and in the higher animals of that type we have the chest in which the respiratory organs and the heart are separated from the intestines. But it is everywhere the same thing, repeated in all its various combinations from the fish up to man. For we need only to look at the embryo, that is, at the young, before it has acquired its full size; we find that the first then has more of these appendages which we call fins, but tapers gradually to a single tail. We find that it has none of those other appendages which we call fins along the chest; and we find that in order to raise the fish to the condition of the reptile, we have only to mark a slight contraction between the head and the trunk, and to raise the head slightly upwards so that the head shall no longer be on a level with the rest of the body, and to secure for the limbs that kind of transformation, which, instead of presenting a number of developed fingers, will have single fingers, say three or four or five, spaced a little further apart one from the other.

And thus we are led to the condition of the

Lower Reptiles,

The salamander or lizard. And if we widen the body or shorten it we arrive at the condition of the turtle. If, instead of allowing the body to remain horizontal, as it is here (see cuts), and the tail to have that prominent elongation curtailed to a short termination of the vertebrae, and we give legs and raise the anterior part of the body on this end of the legs, transform the posterior from this condition into that, we have the brute; and the relation of brute and reptile, as those of reptiles and fish, are so simple that you need not have a large museum to show all these gradations. They pass from one to another; and in the condition of quadrupeds, when we come to man, the only difference is that the head predominates, and the limbs, stomach and other organs are kept in subordination or in the control of the head, of the brain, of the intelligence; so that we may truly say that man is only a higher organized and intellectual creature, built upon the plan which is already indicated in the condition of the fish. And this is one of the general results of modern investigation in the comparison of these different classes of animals.

The type of these animals are called *vertebrae*, and the type *vertebrae* embraces four. It may be a larger number of classes, but for the purposes I have now before me, I say four; fishes, reptiles, birds and mammalia, including man. And now to repeat what I said at the beginning; all animals found on the surface of the earth, without exception, and a ready place in one of these four types; among one of these four types. And on closer scrutiny all are found to belong to one or the other of these thirteen classes.

Now is it not worth while to learn that kind of animal geometry which teaches us at once to recognize under the most diversified forms, beings so closely akin that we may analyze them, and reduce them to their simplest formula? But their relations are still more intimate than would appear from this, and are linked together by a more all-pervading thought than they appear from this very rapid sketch, for if we examine their

Mode of Growth

We are struck with the fact that each one of these types which is perpetuated by the reproduction of young akin to themselves, passes during its growth through a succession of changes which are identical to the conditions we observe among those that have reached their perfect condition in their relative standing.

That may not be quite intelligible. Let me analyze my statement more fully. Here I have spoken of animals in their full growth, in their adult state. I have represented them as compared with one another. I have compared the *polyp*, which occupies the lowest position among the *radiates*, with the jelly fishes and *acalephae*, which occupy a higher position, and that of the sea urchins and star fishes which occupy a still higher position. I have shown you that all these three classes are built on the plan of *radiates*. The difference is chiefly in the complication of their structure. The same obtains for the *mollusks*. The same is very clear among the *articulates*. You have seen that between a worm and a *crustacean*, the difference is not one of plan, but it is one of complication. So it with insects—only a difference of complication—and when you get to the *vertebrae* it is the same. In the fish we find the germs of mankind, and we find that between fish and man we have an intermediate space filled by the reptiles, birds and quadrupeds. And all that is as studied among animals in their full grown condition. Now let us examine the

Young of all These Animals,

Or at least some examples of them—that I may not trespass upon your time or attempt what is impossible to give in an hour's time. Let us examine, for instance, the young of some *echinoderm*, of some sea urchin or of some star fish—that will be the most easily appreciated example. We have a figure of one of them. [See cuts.] Now the young of some of these star fishes, instead of being what I have represented them, first is a little *polyp*-like animal attached to the ground by a stalk, having the stalk divided by transverse articulations, and presenting on the summit a number of rays surrounding a central cavity. When that animal grows to a large size, when its anterior organs have acquired a higher degree of complication, that star separates from the stalk, and the stalk vanishes and dries up, and we have then a free star fish. Or, let us say a

Jelly Fish.

The jelly fish in its perfect condition is a gelatinous disk with a number of appendages all around the disk and a central cavity with tubes radiating to the margin, and a number of larger appendages around the mouth through which the food is brought in. That animal swims freely in the water. When it lays its eggs, those eggs are for a while little oblong bodies swimming freely in the water. After a while they select a place on which they become attached, and when they become attached they enlarge and expand into a clod-shaped body, and that clod-shaped body is itself enlarged along the margins so as to have as it were 4 horns around each summit. And presently that clod-shaped body grows into a more cylindrical or longer mass or stem, and upon the summit of these clod-shaped bodies have grown feelers; and instead of four, we may have 8 or 16 or a larger number; and in the center a depression is formed which enlarges into a

cavity. That cavity deepens and expands through the whole length of the stem, and the stem itself divides into a number of layers by transverse contraction. Now each one of these contractions becomes fringed along the margin. After a while we see, when that animal has acquired the dimensions of two inches, that the upper part becomes uneasy and drops off and swims away, and each one of these layers one after the other drops off and swims away; and as it swims away it turns upside down, these fringes at the margin enlarge into long fringes, at the edge of the central cavity, which were at first only a hollow, are provided with appendages which become in the course of timethose long appendages; and we have a number, say twelve, fifteen or eighteen jelly fishes growing out of this *potyp*-like animal, which in its infancy is so much like a *potyp* that when first described it was described as a true *potyp*.

Now you see here a history which brings before us the connection between the *potyp* and *acalephs* in the most striking manner, and shows us that these animals of a higher class in their young condition may resemble those of a lower class to such a degree as to appear to belong to that class, where their relation as infants of this class has not been ascertained by observation.

What Grows Out of an Egg of a Butterfly.

When the egg of a butterfly is hatched it is not a small butterfly, but comes out a worm-like animal. It is a caterpillar, and that caterpillar has so much the form of a worm that it might readily be mistaken for a worm; for in every respect it has the appearance of a worm-like animal. It grows to that. You have noticed that in the silkworm, very likely; and you must have been struck by the resemblance of the young moth which is born from the silk cocoon to a worm. In fact, it is called the silkworm. But it does not remain a worm. After a while it spins itself into a cocoon; that worm is changed into an animal which has the body divided into two distinct parts—one being distinctly articulated, and the other comprising the massive body. But upon the sides of it you may see compressed upon the body the three legs; upon the side of it you may see compressed against the body the two wings; upon the side of it you may see compressed against the body the long antennae, and also an organ which is to be the proboscis of the moth; and when that breaks through this envelope it becomes a moth, a perfect insect, with six legs and with two pairs of wings. In fact we have a worm-like animal representing the youthful condition of the butterfly; a *crustacean*-like animal representing its middle age, and in its condition the real insect. So that the stages of growth of the insect recall the perfect condition of animals belonging to the lower classes.

Here then we see that the Creator's thought, by the agency of which these complications of structure which characterized these different classes were called into existence are repeated in the patterns which animals present in their successive stages of growth. And it shows that it is one kind—some kind of thought pervading the whole. But this is not all. In the order of succession of animals through time we have the same ideas reproduced. I may add

Another Example

In order that I should have some case from each of the leading groups. The young bird does not resemble the adult bird. When it is first formed on the surface of the yolk it resembles the embryo of the fish so much that it requires a practiced eye to discriminate and to recognize the characteristic differences. I have raised turtles which had at certain conditions presented such striking resemblance to a young chicken that if I did not label them I could not afterwards know which was which. So great is the resemblance in the process of life in these animals when young, so different in their adult condition. And I add this other feature, that animals in the course of time have presented very different characteristics and have exemplified as it were the conditions which we recog-

nize in the growth of animals now adduced, and the conditions which we observe among full grown animals of different standing.

You may exemplify that in another way. Geologists have made out the history of our globe to such an extent that we now know that there has been a period in the earth's history, when the material elements aggregating or condensing were unfit for the maintenance of animal life; when the mass of the earth was so hot that no water could exist in the fluid condition, but only as vapor around its envelope; and out of this chaotic condition has grown a state of things, when the first crust of the earth became solid, and when in the course of time this solidified crust condensed to such a degree that an ocean could exist upon its surface, and acquire such a temperature that animal and vegetable life became a possibility for this world.

Now these facts are so well authenticated that there is no doubt in them, we may say that there is a horizon at which neither animal

We have from the beginning *acalephs*, and through all times. We have from the beginning *echinoderms*, and through all times. So it is impossible to consider these animals which at all times have been contemporaneous with one another as the ancestors of one another; or no contemporary is the ancestor of another. We must have there a difference of time; and we see that here we have representatives of these three classes from the beginning, and among *mollusks* it is the same. We have *acalephs*, from the beginning and through all times. We have *gasteropods* from the beginning, and through all times. We have *cephalopods* from the beginning and through all times. And we have the *articulates* also from the beginning. We have *crustacea* from the beginning, and through all times. But not insects; insects belong in those periods which are more closely connected with the *carboniferous* age; and then once introduced continued through all times to the present day. Now certainly not one of these animals can be derived from those.

and not possibly the spinous appendages of some king crab.

And even that investigation is very difficult owing to the circumstance that most of those animals of an older time differ, not only entirely from those of another period and most from those which live now, but resemble one another in the same period to a considerable extent; so much so that the *Silurian crustacea* or the *Devonian crustacea*, have been mistaken for a time for fish, or vice versa. And now comes the point when we have difficulties among ourselves, which no doubt are exaggerated by the community, when they believe that we have no solid knowledge of all other departments of our science.

To know when the uncertainty begins and when the certainty may be reached, requires a considerable familiarity with the whole, as in every department of knowledge! And what is the representative field that the number of those who are competent should be increased, that the number of those who have acquired familiarity with this subject

should be so great that real information shall be rapidly made precise? It is in consideration of this desirable state of things that I appeal to you to

Foster all Efforts

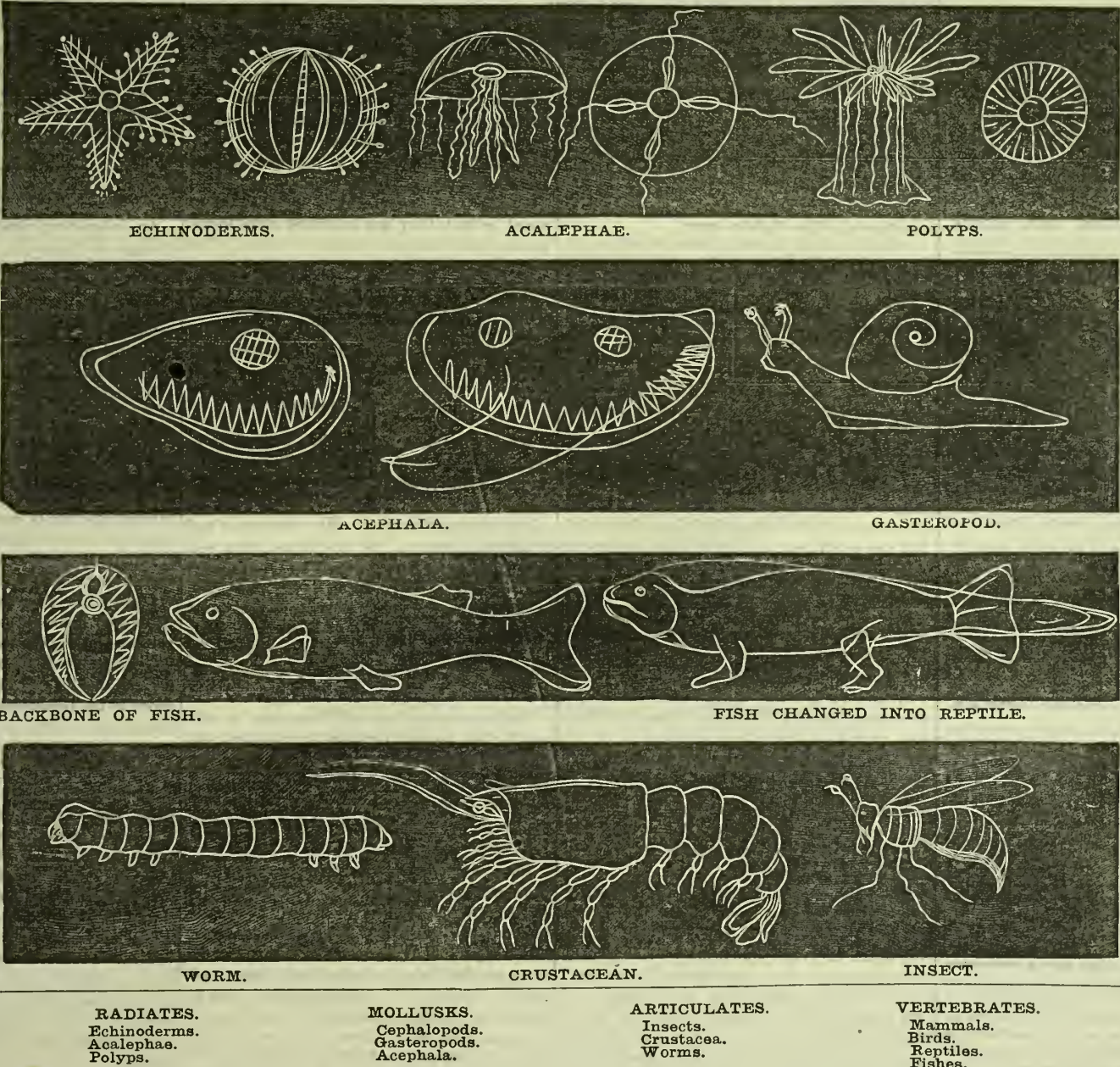
Which are making toward the fostering of science, and you will see that this knowledge goes much further in its consequences than appears at the surface. I have presented to you these things as facts, but they are more than facts; they are indications of something superior. If these animals are related to one another in the manner in which I have presented, in consequence of a plan, there was thought that laid out the plan. There was a mind that determined this plan. In fact, the whole animal kingdom is the work of intelligence. But if these things are derived one from the other, they may be, and they are represented so by a school of naturalists at the present day; they may be the work of blind forces, of forces without intelligence, without discriminating power, and without forethought, and you see at once that

The Study of Nature

Is every day encroaching not only upon philosophy but upon our very creeds; and the day will come when all thinking men will appeal to the facts of nature to determine whether we ourselves are descended from monkeys or whether we are the work of a beneficent Father. Now it will no longer do for the coming generations to say, I will accept this or that doctrine, because knowledge is pressing at your halls and will say to you, you may know it because you must know it, and unless you are willing to learn it you may grope in ignorance and be the tool of a designing priesthood. That is the condition that stares us in the face for the future, and it becomes the duty of every man to foster knowledge and to prepare the coming generation with all those appliances which lead to an independent opinion on all those matters. But there is another consideration than that of your immediate necessities here. No community can be utterly great without

Culture.

Culture is the background of every great community. It is, in fact, the true and only test of real greatness, and history admonishes us in the most pregnant manner that this is true, and that the fate of nations depends upon their culture. Compare States that have gone out of existence, as Athens and Carthage, that have been drowned in the course of time. Compare them in the memory of mankind. Carthage, that powerful Carthage, which made Rome tremble, what has she left? A pile of ruins, the position of which is hardly known, and nothing else which could benefit mankind. Little Athens, the model of all culture! from her we have learned eloquence, poetry, philosophy—the arts. If anything is great we try to make sure that it will compare with Athenian culture. Will you allow your community to share the fate of Carthage, or will you show that all your luxuries and good fruits shall be embellished by Attic salt in the future? It is for you to decide.



nor vegetable life could exist, and that below that are observed those

Geological Facts,

Which belong exclusively to the inorganic kingdom. But upon this horizon, animal and vegetable life originated; and in the course of time a mighty succession of changes took place; and animals and plants which have lived in succession upon the earth have been buried in the deposits formed under the agency of water upon that first primitive solid crust; and we call geological periods those successive stages in which a diversity of animals and plants are buried, and these stages, these successive levels in the solid envelope of the earth have received names. We call *azoic* all those deposits which underlie the forms where animal and vegetable life begins; and then we have these geological systems which I will represent by horizontal lines, which have followed one another up to the time when the condition of things was introduced which now prevail. We have here below what some geologists have called the *Taconic* system, or *Cambrian* system, or *Primordial* system. We have above that the *Silurian* system; we have above that the *Devonian*; above that the *Carboniferous*; above that the *Permian* system; then we have the *Triassic*, the *Jurassic*, the *Cretaceous*, the *Eocene*, *Miocene*, and *Pliocene* periods, and the present state of things.

And in each of these periods we have animals and plants which differ from one another as they differ from those now living. And now let us see in what order animals have arisen upon earth. It is not true that only the lowest made their appearance at first. We have from the beginning *polyps*, and through all times,

No one of these can be derived from them. Perhaps insects might—if it could be shown that they are really the descendants of any of these older forms of *articulates* known as *trilobites* all alike.

How is it that in *vertebrates* we have in the opinion of some—and here I will show you How Difficult it is to be Positive

At times—in the opinion of some naturalists we have fishes from the beginning to the present time; in the opinion of others, fishes do not begin before the *Devonian* age. We may say: "Well, are naturalists so ignorant that they cannot recognize a fish from another animal?" The difficulty is greater than it appears, for we do not find the remains of those animals as perfect specimens, as complete as we find the fish in the market. We find some of its parts, of its bones,—what are the remains of fish or the remains of *vertebrates*, which have been found there—spines and teeth. Now the spines of such fish may resemble the spines of some *crustacean*, for instance, of the king crab. The teeth are such as to resemble those which are found in the cups of the arms of cuttle fishes; and in consequence of that there are naturalists who say that the fishes, which are supposed to have lived then, were cuttle fishes; others who say that they were *crustaceans*. The certainty will be ascertained, when we have better specimens, which will be unmistakable, or when those spines and those teeth shall have been examined in such a way microscopically as to leave no doubt that the teeth are bona fide teeth of fishes, and not the cups of cuttle fish, and the spines are bona fide the spines of fish,



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TO POSTMASTERS.—The interests of P. Ms. and newspaper publishers are, or should be, mutual. We assist the public in a kindred line. Out of 1,000 P. Ms. we know that 990 are friends of the PRESS. We do our best to make them so. They have a regard for respectable newspapers above that of ordinary merchandise such as is creditable to both heart and brain. But we regret to say there are a few exceptions among postmasters in this respect. There is one, in one of the large towns of the State of Nevada. At his office our papers are thrown into a heap, and subscribers, (if not others) are served with the paper that comes first no matter whose name is on it. We invite that P. M. to correct this. Failing to do so, we invite our subscribers to make a written statement, verified by one or more witnesses, and send to Mr. Barstow, Postal Agent, San Francisco and ask for redress.

WELL APPRECIATED COURTESY.—The position of Entry Clerk at agricultural and other fairs is usually an annoying one, calculated to bring out the bad temper of the occupant of the position if he has any. He can not accommodate a half dozen applicants at once, as they often come together, and the consequence is that some or all of them are dissatisfied. At the recent State Fair, Sacramento, in the lower hall, we noticed such marked contrast to the usual management and success of Entry Clerk in the case of Mr. Geo. G. W. Morgan, that we take pleasure in testifying to his strict attention to his duties, and his universal kindness to exhibitors. We observed him repeatedly doing acts of kindness out of pure motives of goodness towards exhibitors, requiring but little effort on his part but of significant importance to them. It added to the satisfaction of that portion of the fair to be so treated, and we were specially requested by a delegation of the same to express their thanks publicly through the PRESS to Mr. Morgan.

PEARS.—C. W. Pomeroy, from his orchard at San José, has sent us a box of delicious pears. He will please accept our thanks.

ON FILE.—Grains of Science—engravings completed, will appear next week. L. R. D., Pine Grove.

The Liverpool Wheat Quotations Again.

In the absence of the principal proprietor and manager of the *S. F. Commercial Herald*, the editor in an unenviable style, (for a commercial journal at least,) indulges in a good deal of concentrated spits and vindictiveness towards us, for candidly questioning the reliability of the telegraphic Liverpool wheat quotations. In the course of his remarks he says:

"Our own opinion, backed by leading resident English houses here, is this: the quotations sent to California by the Western Union are the average prices of cargo parcels sold aboard in Liverpool, as is customary, while those in the London *Mark Lane Express* are dealers' quotations after the grain is landed and housed, with necessary expenses added."

If that was a real explanation of the discrepancy admitted by him in the quotations, it would be happily an accommodating one—accommodating to any amount of difference when we consider such definite items as "housing," "necessary expenses added," etc. However, the "Associated Press" manager in New York, who is supposed to hold one end of the cable, says:

"The standard quoted is that of California average wheat, and the prices given are sustained by the Liverpool weekly grain circulars. The higher quotations cited from the *Mark Lane Express*, as discrediting ours, evidently give prices of California club wheat."

The *Bulletin*, *Call* and *Alta* also disagree with the *Herald*. The *Bulletin* says:

"We suggested several days ago that the uniform difference between the *Mark Lane Express* and the telegraph, resulted from a different standard as to quality. This theory is confirmed by the facts now disclosed."

This Associated Press manager asserts that "the (telegraph) prices given, are maintained by the Liverpool weekly grain circulars," but the *Herald* asserts:

"If they are upon an average 2d below those of the *Mark Lane Express*, they are, as a general thing, higher than the private cypher telegrams received by our merchants, and to which we have access."

"To which we have access." Then he is in the "circle"—so far as they choose to have him. Are the quotations of cypher telegrams, and private circulars less truthful than the published reports of this established local journals? Yes, the world over, and *Mark Lane Express* on the English grain markets, has greater credit for truthful news than any other authority. It has maintained its reputation, too, many years longer than the (editorial) existence of its *S. F.* defamer.

Are there any Liverpool wheat quotations sent here by private telegrams, except in the interest of buyers? We cannot find that there are.

"If any charge of wrong-doing is to be laid at the door of the Western Union, it is that their notices of a rise or fall are sometimes rather late in reaching the Exchange."

A notable admission of the *Herald*—important and significant. Doubtless half a million dollars difference in trade per annum results from such delays in this city.

The Editor of the *Herald* calls us "bnsybodyes." Yes, why should we meddle in behalf of the farmers, who wish to know the truth or falsity of the telegraph quotations. Further the Editor accuses us of "systematically stealing" from "more enterprising contemporaries." We cannot better account for this than to believe that in his madness he goes begging the question at issue, and falsely and unprovokedly accuses us of one of his own thoroughly practiced faults—one of his most harmless and most pitiable perhaps, but certainly the one of all others most proverbial among all the craft, who know him long and well.

We are pleased to inform this *Herald* editor that we see more fully the necessity for publishing a fully reliable produce market report than when we commenced the only replete weekly report, independent of his, in *S. F.* We did not commence it to injure his business or to ruffle his feelings—but to benefit the community and profit ourselves. Our office is personally familiar with the markets, and independent from any unhealthy restraint. If we choose to compare from his own files certain fossilized quotations, with the record of sales for several months of some of our Front street firms, who express astonishment at his indifferent publication, a more astounding and unquestionable discrepancy would appear than in the telegram and *Mark Lane Express* quotations—greater, perhaps than the *Herald* editor can be made aware of until he can a little more "see himself as others see him."

If the telegraph is reporting the price of wheat aboard ships at the Liverpool docks, or outside the Golden Gate heads, as suits the occasion, is it not well that our public should be informed of it, and that more positively than by a mere "opinion."

The manager of the Associated Press has

shifted his reports so as to now read, for instance: "California average wheat, 13 shillings; California club wheat, 14 shillings"—instead of reporting as formerly, "California wheat, 13s. to 14s." It seems to us that this change is made by some one who manipulates the cables dispatches in New York, before distributing them over the Union, a recklessly expert news caterer, rather than a well informed market reporter. We have this best authority for saying there are scarcely half a dozen cargoes of California club wheat shipped to Liverpool per annum. It almost invariably brings 2s extra per cental, instead of 1s., as our daily telegrams intimates. Besides we hardly see how daily sales are made this year around from so small a number of cargoes. So little club wheat is sent, in fact, that no differences in prices of purchases of the same is publicly noted here in reports.

We have no quarrel with the telegraph—they accommodate first those who pay the most. Nor with the Merchants' Exchange, nor the Associated Press here—they cannot wholly own telegraphs. The Government should. The farmers should combine and buy quotations that are definite and reliable.

We shall still continue to question market quotations which we have reason to believe are giving false impressions. Whether intentional or not, they are injuries alike to the producer and the better class of buyers. Our reputation is not to be made or undone in an instant. The intelligent and discriminating readers of any honest journal will maintain it for its integrity, while they will as surely drop into oblivion the reckless and dishonest journalist.

Market for Cocoons.

We learn that a person has arrived from Italy, in the interest of certain silk merchants of that country, and is now in San Francisco, who will buy all the cocoons that he can obtain at reasonable prices. His purpose is not to ship the cocoons, but reel them here, and will make immediate preparations for so doing. His first purpose in coming was to obtain the spent cocoons from the reels and the perforated ones—those used for the production of eggs; but finding both of these quite insignificant in quantity, will turn his attention to cocoons in any condition.

We have not yet learned what price he will pay for the several varieties or qualities, but understand that he will expect to get them at a low figure at first, to enable him to extend the business from year to year, and paying more and more, as the quality of the cocoons shall determine.

Here now seems to be an opportunity for those who have cocoons on hand to dispose of them. It is just the market we have been seeking, and it is now at our doors, and we hope our silk growers will be enabled to realize sufficient for their labor to make the business a pecuniary success. We will make the effort to obtain an advertisement from the purchaser of cocoons, that will inform our patrons of the prices he will pay for kinds and qualities. If silk growers will inform us of their success the present year, and the quantities of cocoons on hand, it might facilitate their sales.

Our Fruit Varieties.

An Eastern correspondent, who intends emigrating to California the present winter, wishes to know if we have most of the best-approved varieties of summer and winter apples, and whether he had better not bring with him a few hundred trees of various kinds of fruits, some of which he thinks may not yet have reached our State. We can hardly put in a better answer to his inquiry than by presenting the following, which we clip from a Napa paper, speaking of fruits lately on exhibition at their Society's fair:

"Mr. J. M. Thompson makes an extremely fine display of fruits from his orchards at Suscol. The exhibition contains one hundred and fifteen different kinds of apples, alone, ranging from the mammoth Gloria Mundi, down to the smaller but more finely flavored varieties. Of these pears and grapes there are ninety-five different varieties, sixty-five of the former and thirty of the latter."

Now, if our correspondent will bear in mind that from June to the present time nearly as many varieties of early apples have ripened and gone as Mr. T. had on exhibition, he can very naturally conclude that we have nearly as many varieties here as he will ever want to cultivate.

Preparing for Winter.

Our Eastern exchanges are every day admonishing their readers of the approach of winter, and the necessity of due preparation for the usual months of frosts and snows. They give directions for the laying down and covering of half hardy grapevines and a large variety of tender plants. They even advise the putting into pits and cellars that common saccent the potato, to keep it from freezing, whilst here we only pile them up in sacks under any kind of covering that will turn the rain.

Even cabbages must be protected there from excessive cold, whilst here we are planting seed and gathering cabbages every month of the year. They are all through weeks ago, talking of strawberries except as things that were; here, they are yet in market at prices at which almost any one can indulge. We plant and gather peas every month of the year, with all the different salads; but we never bank up our houses to keep our cellars from the frost, or bestow the least extra care upon our barns, henneries or stables. We are a favored people, in a fruitful country with room for many more.

Doctored Wines.

An interesting revelation published by the College of Chemistry, explains the nature of the competition our California wines have to combat in London. The report says that the highest perfection of chemistry has been developed in wine-making, so that, by gradual substitution, the use of grapes in wine-making is now almost entirely unnecessary.

It would appear from this that even the term of "doctored" wines, will soon become obsolete; for instead of using a certain quantity of pure wine from the grape as a base on which to build the fabric of a spurious or "doctored" wine, even this will no longer be needed for the manufacture of any quantity of wine of a quality that will defy the taste of connoisseurs.

Perhaps a few of our wine makers may see in this another reason for converting their vineyards into vineyards for raisins, by grafting upon their present stocks the best approved varieties for the purpose. Our mind, however, does not run in the same groove with those who believe that great changes are to be brought about in the production of wines from purely substituted or artificial admixtures.

Connecticut Cattle Show.

What has happened to our staid old puritanic State, that we find a notice to the effect that at the second annual show of the Union Agricultural Society at Wallingford, to be held at Morse's Park, premiums are provided for horsemanship and foot-racing, for fast running horses and mules, and for trotting horses.

For the best women riders, three purses are offered. For a foot-race dash of half a mile, three premiums. For a running race, mile heats, three in five, three premiums; the same for mules; and in addition to this there are five separate contests to come off for trotting horses.

Are the "worthy sons of worthy sires" becoming so degenerate or enlightened, which is it, that it is no longer a sin to encourage the raising of fleet animals, or promote the healthy vigor of the human race by horsemanship and athletic exercises. English women are proverbial for their skill in horseback riding, and innocent field sports, including archery, running and croquet, and English women are younger at fifty than most American women at thirty or thirty-five years. We need more out-door exercise for the girl youth of our country if we would give them constitution and strength of body as an inheritance to transmit to their offspring.

SOLICITING AGENTS.—We have traveling soliciting agents and correspondents in the persons of Frank Chapin and L. P. McCarty, who are making the tour of Oregon and Washington Territory, and wherever else they may choose to direct their steps. We commend them to the attention of any of our present subscribers on whom they may call, and the public generally. Any courtesy that may be shown them, in giving them information of the agricultural, manufacturing, mechanical or mining progress and resources of the localities they may visit, either city, town or country, will be esteemed by us and reciprocated by the publication of such facts of interest as may be imparted to them.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING SEPTEMBER 24TH, 1872.*

DREDGING-MACHINE.—Andrew J. Gove, S. F., Cal.

ROULEAU-ENVELOPE.—Andrew J. Gove, S. F., Cal.

ORE-CRUSHER.—William P. Hammond, Napa City, Cal., assignor to himself and Henry Mygatt, same place.

COMBINED WATER-WHEEL AND SEWING-MACHINE.—Isaac Hyde, Oakland, assignor to Oscar J. Backus, S. F., Cal.

CAR-BRAKE.—James Charles Gibson, Sacramento, Cal.

TRACTION LOCOMOTIVE AND RAILWAY.—William B. Hyde, Oakland, Cal.

WASHING-MACHINE.—John S. Ord, Soquel, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s MINING AND SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of mention:

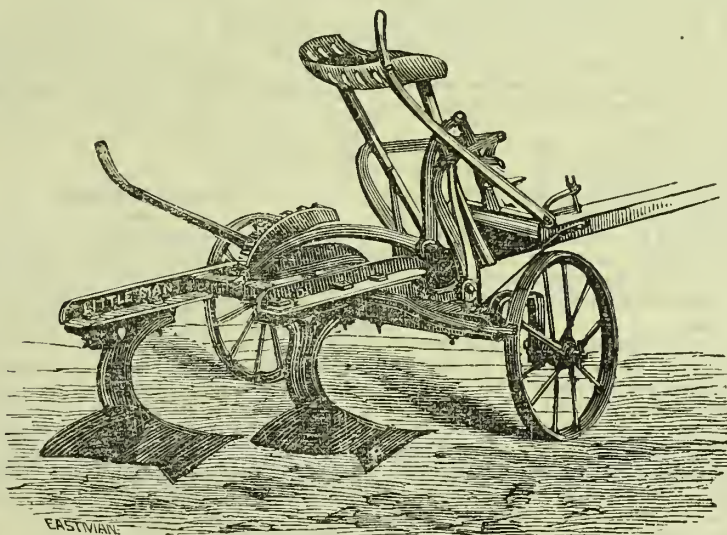
QUICKSILVER AND AMALGAM SAVING APPARATUS.—Joseph Potts, Treasure Hill, White Pine, Nevada. This invention is called an Electro-Galvanic Quicksilver and Amalgam-saving Apparatus, and is intended for that purpose in mining operations, more especially to save that portion which usually escapes down the sluices on account of its fineness or state of minute sub-division. This is accomplished by passing the pulp or tailings through a sluice or section of a sluice, which is provided with peculiarly-arranged riffles, the pulp or tailings being first distributed upon the floor or bottom of the sluice-box by means of a revolving hopper of novel construction. The riffles are made of copper, and riveted to the bottom of the box at an angle of 30°, and extend lengthwise of the box. A space of about one inch is left between the riffles in each row, of which there are ten. The riffles in each alternate row are riveted between the spaces of the upper row, so that there are five rows containing five such riffles, and five rows containing but four. In another box are another series of riffles, which run across the box, and are set at the same inclination as the box itself. On the upper side, these riffles are separated so as to allow the quicksilver and soft amalgam to pass through and finally run into the vessel for receiving it. The lowest riffle is not perforated, and the main quantity of water and sand is allowed to pass over it into the sluice below. The boxes, riffles, etc., are all coated with amalgam, and the copper boxes are enclosed in others of zinc. So, in the admission of tailings or water, however slightly acidulated, a galvanic action is set up. The whole apparatus may be enclosed in a wooden box, and kept under lock and key. The apparatus receives the tailings at the upper end in a hopper or revolving wheel. The tailings are thus distributed along the course of the riffles, and finally discharged from the sluice. In passing through these boxes and over the riffles the tailings are subjected to a galvanic action, which adds intensity to the volume and favors the amalgamation of the particles. The whole apparatus is charged with an additional current of electricity by ordinary batteries.

COIN ENVELOPE.—A. J. Gove, S. F., Cal. This little device will be appreciated by all Californians particularly, as it is an envelope, wrapper or package for containing silver coin in specific quantities, and especially silver half-dollars, in order to render them more convenient for handling as a commercial medium. Wherever silver in large quantities is used as a currency medium, and especially upon the Pacific Coast, where there is a superabundance of silver half-dollars, whatever lazy men may say to the contrary, it is customary, for the sake of convenience, to make what is known as "silver rolls," each of which usually contains forty half-dollars, thus making them into packages of \$20 each, known as \$20 rolls. The usual way of confining these pieces of silver in a roll is by means of a piece of paper, in which the roll is wrapped, thus concealing the contents of the package, and as the roll generally passes as current without examination, a chance is offered for dishonest persons to concoct fraudulent rolls. Numerous instances have occurred in which a piece of iron tubing was inserted in the wrapper, instead of the pieces of silver, and others in which counterfeit pieces were introduced with the genuine silver, thus perpetrating a fraud upon the public. This invention is a wrapper which can be very cheaply made, and through which the contents can be examined without unfolding the package. It is constructed of a piece of card-board or other stiff

wrapping material, which is cut the exact length desired to have the coin-roll, and wide enough to extend almost around the roll. The space between the two edges forms a slot the entire length of the roll, through which its contents can be examined without disturbing the wrapper. The edges are bound with strips of metal, made of waste pieces of tin or other metal. One or both ends of the wrapper can be removed by turning one end slightly; and then it can be used over and over again. It can also be used as an advertising medium, since advertisements can be placed upon it.

SELF-ACTING BRAKE.—Timothy Stebins, S. F., Cal. This invention provides an automatic brake or governor, which is more especially intended to be used in connection with elevators, and it consists in the employment of two or more shoes, which rotate within a stationary rim. These shoes are so connected with their axle that any increase of speed beyond the desired point will cause the shoes to move outward, so as to rub against the rim with more or less friction, according to speed, and thus retard the motion of the shaft and anything which may be connected with it. Suitable springs are connected with the shoes, and by their tension the speed of the machine is determined, as when the centrifugal force overcomes the spring the shoes are thrown against the interior of the rim, checking the speed.

IMPROVEMENT IN BELT-SHIFTERS.—Samuel Forsythe, S. F., Cal. This is designed to improve that class of shifting devices in which a cylinder provided with cam or spiral grooves is employed for shifting the blocks which carry the belt. It provides a spring-guard, which will limit the rotation of the shaft at certain



LITTLE GIANT GANG-PLOW.

points, and thus indicate when the belt has been properly placed, without requiring further attention from the workman.

AXLE-BOX.—Jonathan S. McClure, Sacramento, Cal. This improvement is more particularly applicable to the boxes which support the journals of railroad-car axles, but can also be used in boxes of all kinds which are likely to become heated by the revolution of the journal. A water-tank is attached to the box in such a manner as to keep the box cool and prevent it from being overheated by the friction of the journal; and there is also a novel arrangement for supplying oil to the journal for lubricating purposes. The arrangement is simple and easily applied to the ordinary axle-boxes of railroad cars. The same application can be employed on the stationary boxes of machinery for the same purpose and with equal benefit. The axle-boxes are connected with a water-tank by a pipe and a circulation of water is maintained between the part of the axle-box required to be kept cool and the tank as the water becomes heated.

MEDICATED TOWEL.—Lydia Stewart, S. F., Cal. This is rather a novel method of applying medicine externally to the human body, by means of an ordinary towel. The towel is to be used for drying the person after bathing, and it is claimed, will arrest cutaneous diseases, paralysis and local affections, while it imparts at the same time a healthful action to the skin and frees it from bad humors. A towel, prepared in the manner specified, will retain its virtues about two months, when the process will have to be repeated.

NARROW-GAUGE.—A movement is on foot to connect the city of Stockton, on the San Joaquin, with Visalia, in Tulare Valley, by a narrow-gauge railroad. It is to be called the People's Railroad, and a number of the principal business men of the former place subscribed liberally at a meeting recently held. A road of this description would be of incalculable benefit to the portion of country over which it is intended to run, and would materially assist the farming population on its line.

Ready's Gang-Plow.

We present our readers with an illustration of the now-celebrated gang-plow, invented and manufactured by W. B. Ready, of Sacramento. The cut, though not as fine as we could have wished, was not made expressly for our paper, but gives a fair representation of the implement.

We call it celebrated, because at the late grand plowing match at the State Fair, it was awarded the first premium for best work and lightest draft, over fifteen other gangs of different make. Mr. Ready is a well-known Sacramento inventor and practical mechanic, and, as far as we recollect, it is from such men that we have obtained nearly or quite every successful invention best meeting the wants of the farmers.

California gang-plows are justly celebrated wherever used on this Coast and are now being successfully introduced East in competition with their best patent gangs. Mr. Ready's plow has an iron frame, as is now the case with a majority of our latest improved gangs. It was almost the universal expression of the plowmen attending the match at Sacramento, that even in single plows, a wooden beam is behind the age.

Cattle Disease—Trichinae Spiralis.

It was but three weeks since, that we published an article on the subject of the Santa Cruz cattle disease, giving the opinion of a cel-

ebrated veterinary surgeon to the effect that it was undoubtedly caused by Trichinae, introduced into the animal with its food, by feeding among, or upon the same ground with hogs.

We now have something that looks very much like a corroboration of the surgeon's views of the matter.

The Visalia *Della* says that Sands Baker, of Tulare County, recently lost three head of fine cows and a bull, from eating sugar cane with swine. It appears that in eating, swine chew the cane and extract the juice, after which they eschew the stalk. The cattle picking it up and eating it are almost immediately seized with an itching sensation of the head, and approaching a fence or other object will rub their heads until they are bloody and the skin is worn off, all the time suffering extreme agony, bellowing and pawing with great ferocity, regardless of all that may be passing around them. They died in from eight to ten hours after the first infection.

We hear of so many cases in which cattle die from some heretofore unknown cause, except that it always occurs after having taken their food upon ground where hogs are allowed to run, the general diagnosis of the disease being so exactly similar, attended in all cases with a desire to rub the parts of the body most affected till nearly the skin itself is rubbed off, would seem to very nearly determine the disease to be the genuine *trichinae spiralis*; to prevent which, the utmost precaution should be observed in keeping all other animals as much as possible apart from the hogs.

THE GOODWIN PUMP AT THE STATE FAIR—Seemed to attract great attention, and to draw marked admiration for its operative tests. As a new California invention we are especially pleased to note its progress. We are told that important sales of pumps were made by Mr. West, one of the proprietors, at the Exhibition.

Mohair Manufacture.

A commendable effort is being made to establish silk manufactures in California, brought about to some extent by the attempts of enthusiastic individuals to grow the mulberry and produce raw silk. With the degree of success that has attended its production, our readers are perhaps as familiar as ourselves, and we regret to say that it has not come up to the expectations of many, and yet silk manufactures are to be established without delay.

There are already thousands of Angora goats, pure, full-blood, and high grades in California, and new herds are being introduced almost monthly; from all these the annual increase is simply immense, and the production of mohair must increase in like ratio, so that the clip of next spring will aggregate in California alone many thousand pounds. To this can be added the entire production of mohair in the Atlantic States, and no small quantity from Oregon, Washington Territory, Montana and other interior States and Territories.

The only direct cash market for our mohair is London; we must stand the cost of its shipment to that market; it will cost no more to freight it one way than the other. What we should do then is this: immediately start a manufactory of mohair goods in San Francisco. Gather at this point the entire production of the United States, Mexico, and Australia, and what might be needed in addition, to keep one small factory in operation obtain from the English market direct.

Mohair is quoted in the regular prices current there and can be purchased. If the competition should produce a rise in the market value there, it would be the same here and that is just what our mohair producers want. We want more for our mohair than English manufacturers who are making enormous profits from the business are willing to pay; and this we can get by putting ourselves in direct competition with them in the mohair markets of the world.

There are mohair growers in California alone sufficient to start a factory, from their united surplus means, or if not, there are solid men enough among them to command all the capital needed to start such an enterprise at once; and we hope the Goat Growers' Association of California will give the subject their early and serious consideration.

To Silk Manufacturers.

George Barstow, of this city, offers to give to any company which will establish a silk factory on his land in the western part of the city, a lot of ground of double the area covered by the factory. And as an appreciation of the efforts of the Neuman Bros. to establish the silk industry amongst us, he further offers, that in case they are employed in said factory, he will give to each of them in close proximity to the said factory, a lot of land for a home-stand, and the same to any three silk-weavers from Alsace or Lorraine who may be employed in the factory.

We have always understood that the Neumans were expert silk-weavers, and we shall be glad to hear that they succeed in obtaining positions in which they are sure to excel. We shall await with much interest the acceptance of the liberal offer of Mr. Barstow.

DEATH TO THE EVERGREENS.—All who have read the eastern agricultural papers the last year, are aware that the winter of 1871-2 was one of unusual severity; long continued cold froze the ground to a greater depth than for many years before, and almost completely destroyed the evergreens throughout a wide range of Atlantic coast country.

All kinds of theories and reasons have been advanced to account for it, but no two agreed in attributing it to the same cause, till the taking up of the dead trees from the nurseries and grounds disclosed the fact, that wherever the tree was possessed of a tap root, or deeply running roots, reaching below frost, that tree survived the cold; whilst those that had only horizontal roots, or roots near the surface were invariably killed.

There is no transplanted tree so perfect or so hardy as one that is grown from seed in the place in which it is to remain; no mutilation of its roots can be advantageous to its healthy development.

BEES.—J. L. Davis, of Delhi, Mich., has 150 stocks of bees.—*Western Rural*.

And J. S. Harbinson, of Sacramento, Cal., has more than two thousand stocks of bees.



Good Wishes are Never Lost.

He was always poor, but as he became old he became so poor—for he was unable to work—that he was compelled to go into the workhouse. He felt it was hard to do that; but he had no children to care for him. His wife had been long dead. He was alone, and weak and ill, and poor. So he went; and as it was a model workhouse, he was not uncomfortable in his new home. But now what could he do? It seemed less than ever; and yet still he did what he could? He lent his few books to those about him fond of reading and when able to do it, he read to some who could not read for themselves. Often and often he said, "Oh, I wish I could do more!" and though he was poor, everybody loved him.

One sunny day in early spring the poor man was sitting in the workhouse court. Around it bloomed some flowers, upon which he loved to look, for he thought they were God Almighty's picture-books, scattered by him over the world for any one to read who would. There he sat in the balmy air of the early spring—a green and lovely day, and almost as golden as summer. And as he sat he looked upon the flowers till they carried him back to the days of his childhood.

How the past years all came back upon him. He had always been poor, yet his life had not been wretched. For, from the days of his youth, he had, like Obadiah, feared the Lord. His life had not been useless, and yet he had done so little good in the world to what he had hoped, to what he had sought. And thinking over his life, he said to himself, hand folded in hand: "How little I have done! Some who began life with me have become rich; I have always been poor. Some have become rich in good works; one has gone over the sea as a missionary; another is a preacher at home; but I, how little I have done! And yet He who knows the heart, knows, that though I have done little, I have desired to do much." Thus he mused, and musing he fell asleep in the warm sunshine.

"Brother," said the dream-angel to him, "follow me." And the poor man followed him up the sunny air beyond the clouds and sun until in a few minutes, he passed through a glorious gate into a city where every house was a palace and every inhabitant an heir. High above every palace there rose, as a mountain rises above the little hills, a throne of light and one seated thereon, before whom the angel and the poor man bowed. With gracious voice, that King of the Glorious Land said to the angel, "Show my child from earth his mansion, and forget not the garden of eternal flowers."

So the angel led the poor man to his palace, and said, "This is thine! Here thou shalt be free from care and fear and tears; many are the mansions hereby; one is called Rest, the other Meditation, another Song, another Adoration, and there are many more. Here thou shalt dwell and never grow weary, and never be old, but rejoice in the beauty of immortal life."

Then the angel led him to a lovely garden near the palace, and said, "This is thy garden." And such a garden the poor man had never seen, no, not in his brightest dreams.

"Oh," he said, "how beautiful! But what do I hear?" he asked listening.

"Come hither," said the angel, leading to another part of the garden filled with flowers.

The dreamer followed, and there the air seemed full of the most beautiful and delicate music that ever fell upon a listener's ear.

"Look into these flowers," said the angel. And looking into them, the poor man raised his hands in delighted wonder, for in each flower's cup he saw a little angel crowned with stars, and touching a tiny golden harp into the softest, sweetest music. Never did such strains float upon sunny air as came out of those waving flower-cups to that poor man's ear! He was spell-bound in his happy wonder.

Then said the angel, "Learn the meaning of this garden. Many have been thy holy and charitable wishes. Often hast thou said, 'Oh, would that I could do more?' And thy heart has said it. Know

this, that for each such wish there sprang up in this garden one of the sweet flowers of sweetness and song. This is the garden wherein and for ever thou shalt find thy good wishes again; for a holy and loving desire blossoms up to the Lord in a flower that shall never perish. Thou hast done what thou couldst, and what thou hast desired to do but couldst not do shall be to thee an immortal flower, the source of sweetness and song."

Then that poor man knew that even good wishes are never lost, but are found after many days, unto the praise and honor of God forever.—*Little Folks.*

To Young Husbands.

EDS. PRESS:—A week or two since I saw a piece in your ever valuable paper, copied from the *Household* and addressed to "young house-keepers," that commenced by saying, "as a wife, do not expect too much of your husband."

Dear creatures, now tell me what is expected of the poor wife? She must leave father and mother and cleave unto the man she marries, who is made after the image of our creator, the stronger of the two, who takes us, and for that one day is willing to help us—the weaker vessel—bear all the ills of life; to love us and cherish us like a tender bud taken from the household tree, and how often, oh, how often, is that tender bud blasted, and over it the cold monument of indifference reared.

Before marriage we can't expect or ask too much of them; they have time for anything, if it is a ride, or a sail, or a walk, anything to show their love and devotion; but let the marriage ceremony be said, and there ends the romance, for it is tied up with the pink ribbon or the white, and laid away with the marriage certificate to mold and turn to ashes.

We no more find the shawl laid gently over our shoulders, nor the warm embrace nor welcome kiss; it is hurly burly, day in and day out, work, work from morning till night and then the wonder is we have not done this or that; never for once thinking we have carried a heavy heart all day, and that we could of done twice as much with a light one.

Now I don't mean that all men are so, but I do mean there are too many, and that too many pure women are yearly sacrificed on the altar of cold indifference. I have too often seen her left to her loneliness and work till she has almost gone crazy, and if the man would take the same time to ask himself if he had done all he could to keep his wife's love and affections, as he does to load his pistol, to shoot some one else for gaining them, there would be less murder and more good women in our country to-day. Now, Mr. Editor, I don't want you to think me a woman's rights woman, nor an old maid, for I have been ten years married; but I am an indignant woman and hope to live long enough to see some of this remedied.

MARY H.

Sonoma Co.

No Sabbath.

In a prize essay on the Sabbath, written by a journeyman printer in Scotland, which for singular power of language and beauty of expression has never been surpassed, there occurs the following passage. Read it, and then reflect for a while what a dreary and desolate page would this life present if the Sabbath were blotted out from our calculation:

"Yoke-fellow! think how the abstraction of the Sabbath would hopelessly enslave the working classes with whom we are identified. Think of labor going on in one monotonous and eternal cycle, limbs forever on the rack, the fingers forever straining, the brow forever sweating, the feet forever plodding, the brain forever throbbing, the shoulders forever drooping, the loins forever aching, and the restless mind forever scheming."

"Think of the beauty it would efface, the merry-heartedness it would extinguish, of the giant strength it would tame, of the resources of nature it would crush, of the sickness it would breed, of the projects it would wreck, of the groans it would extort, of the lives that it would immolate, and of the cheerless graves it would prematurely dig! See them toiling and moiling, sweating and fretting, grinding and hewing, weaving and spinning, strowing and gathering, mowing and reaping, razing and building, digging and planting, striving and struggling,—in the garden and in the field, in the granary and in the barn, in the factory and in the mill, in the warehouse and in the shop, on the mountain and in the ditch, on the road-

side and in the wood, in the city and in the country, on the sea and on the shore, in the day of brightness and of gloom. What a picture would the world present if we had no Sabbath!"

Happy Faces—How to Keep Them So.

Carry the radiance of your soul in your face. Let the world have the benefit of it. Let your cheerfulness be felt for good wherever you are, and let your smiles be scattered like sunbeams "on the just as well as the unjust." Such a disposition will yield you a rich reward, for its happy effects will come home to you and brighten your moments of thought.

Cheerfulness is a duty; it makes the mind clear, gives tone to thought, and adds grace and beauty to the countenance. Joubert says, "When you give, give with joy and smiling."

Smiles are little trifles, cheap articles, to be fraught with so many blessings both to the giver and receiver—pleasant little ripples to watch, as we stand on the shore of every-day life. They are our higher, better nature's responses to the emotions of the soul.

Let the children have the benefit of them; those little ones who need the sunshine of the heart to educate them, and would find a level for their buoyant natures in the cheerful, loving faces of those who lead them.

Let them not be kept from the middle aged, who need the encouragement they bring.

Give your smiles also to the aged. They come to them like the quiet rain of summer, making fresh and verdant the long, weary path of life. They look for them from you who are rejoicing in the fullness of life. Be gentle and indulgent to all. Love the true, the beautiful, the just, the holy; in short, be cheerful, and you will have a happy face as long as you live.—*Herald of Health.*

Home Influences.

The influences of home perpetuate themselves. The gentle grace of the mother lives in her daughters long after her head is pillowed in the dust of the earth; and fatherly kindness finds its echo in the nobility and courtesy of sons who come to wear his mantle and to fill his place; while on the other hand, from an unhappy, misgoverned and a disordered home, go forth persons who shall make other homes miserable, and perpetuate the sourness and sadness, the contentions and strifes and railings, which have made their own early lives so wretched and distorted.

Toward the cheerful home the children gather "as clouds and as doves to their windows;" while from the home which is the abode of discontent and strife and trouble, they fly forth as vultures to rend their prey.

A neat, clean, freshly aired, sweet, cheerful, well arranged house exerts a moral influence over its inmates, and makes the members of a family peaceable and considerate of each other's feelings and happiness. The connection is obvious between the state of mind thus produced, and respect for others, and for those higher duties and obligations which no law can enforce. On the contrary, a filthy, squalid, noxious dwelling, in which none of the decencies of life are observed, contributes to make its inhabitants selfish, sensual, and regardless of the feelings of others.

Life.

Life is beautifully compared to a fountain fed by a thousand streams, that perish if one is dried. It is a silver cord, twisted with a thousand strings, that part asunder if one be broken. Frail and thoughtless mortals are surrounded by innumerable dangers, which make it much more strange that they escape so long, than that they sometimes perish suddenly at last. We are encompassed with accidents every day, to crush the mouldering tenements which we inhabit. The seeds of disease are planted in our constitution by nature. The earth and atmosphere whence we draw our breath, are impregnated with death. Health is made to operate to its own destruction. The food that nourishes contains the elements of decay; the soul that animates it by vivifying fire tends to wear it out by its own action. Death lurks in ambush along our path. Notwithstanding this is the truth, so palpably confirmed by the daily example before our eyes, how little do we lay it to heart! We see our friends and neighbors perish among us, but how seldom does it occur in our thoughts that our knell shall, perhaps, give the next fruitless warning to the world!

Young Folks' Column.

Always Speak the Truth, Boy.

Tom Quayle had come to spend his holidays with his grandfather, who was an old soldier, with a pension for good and faithful service. Grandfather Quayle lived in a pretty cottage, to which he and his good old dame often welcomed their children and grandchildren. Grandfather Quayle had a good many strong feelings, and perhaps one of his strongest feelings was his hatred of anything like a lie.

One day Tom was telling him a story of a scrape that some of his school-fellows had got into, and how they had escaped punishment by making an excuse, which the master understood, as they intended he should, in one sense, in which it was not true, though the actual words could bear another meaning which was true.

Tom chuckled over this cleverness, as he thought it, of his companions, but his grandfather looked grave, and said, "Tom, my boy, never laugh at a lie; and remember that the essence of a lie is the wish to deceive. If you purposely use words that you know others will take in a meaning that misleads them, that is as much a lie as if you spoke a plain falsehood. There are no such things as 'white lies;' all lies are black, and stain your own soul. Believe the word of an old soldier, Tom, no really brave man will stoop to tell a lie. It is a mean, cowardly vice which is very displeasing to God, and which all good men hate. Speak the truth, whatever happens to you, and you will please God and gain the favor of your neighbors."

Beautiful Faith.

Birdie was only four years old, but she had already been taught that God loved her, and always took care of her. One day there was a very heavy thunder-storm, and Birdie's sisters and mamma even laid by their sewing, and drew their chairs into the middle of the room, pale and trembling with fear. But Birdie stood close by the window, watching the storm with bright eyes.

"O mamma! ain't that bu'ful!" she cries, clapping her hands with delight, as a vivid flash of lightning burst from the black clouds, and the thunder pealed and rattled over their heads.

"He talks very loud, don't he, mamma? S'pose it's so deaf Betsey can hear, and the ever doaf folks."

"O Birdie! dear, come straight away from that window," said one of her sisters, whose cheeks were blanched with fear.

"What for?" asked Birdie.

"Oh! because the lightning is so sharp and it thunders so loud."

But Birdie shook her head, and looking over her shoulder with a happy smile on her face, lisped out:

"If it funders, let it fundder? 'Tis God makes it fundder, and he'll take care of me. I ain't a bit afraid to hear God talk, Maizy."

Was not Birdie's faith beautiful? Mamma and sister did not soon forget the lesson.

GOOD HABITS.—Remember, boys, before you are twenty you must establish a character that will save you all your life. As habits grow stronger every year, any turning into a new path is more and more difficult; therefore it is often harder to unlearn than to learn; and on this account a famous flint-player used to charge double price to those pupils who had been taught before by a poor master. Try and reform a lazy, unthrifty, or drunken person, and in most cases you fail; for the bad habit, whatever it is, has so wound itself into the life, that it cannot be uprooted. The best habit of all is the habit of care in the formation of good habits.

A BOY'S BUSINESS.—It exactly suits the temperament of a real boy to be very busy about nothing. If the power, for instance, that is expended in play by a boy between the ages of 8 and 14 could be applied to some industry, we should see wonderful results. But a boy is like a galvanic battery that is not in connection with anything; he generates electricity and plays it off into the air with reckless prodigality, and I, for one, wouldn't have it otherwise. It is as much a boy's business to play off his energies into space as it is for a flower to blow or a catbird to sing snatches of all the other birds.—*Warner.*

It is position, and not possession that renders us happy.

GUILT is ever suspicious and always in fear.

DOMESTIC ECONOMY.

To Cook Mushrooms.

As there are, no doubt, many who would be pleased to learn of the many ways for cooking this fungus, we copy the following from an English paper:

The peasants of a great portion of Europe eat mushrooms raw, with salt and dry bread, and wholesome and good they are. The true flavor of mushrooms, nevertheless, is greatly heightened by cooking; and cook them how you may—a broil, a stew, or a fry, with the simple addition of butter, salt and pepper, and they are excellent. There is one rule that should always be observed in whatever mode they are cooked, and that is that they should be served up quickly and hot. The following modes of cooking mushrooms may prove useful at this season of the year:

MUSHROOMS AU GRATIN.—Take twelve large mushrooms, about two inches in diameter, pare the stalks, wash and drain the mushrooms on a cloth; cut off and chop the stalks. Put in a quart stew-pan an ounce of butter and half an ounce of flour; stir over the fire for two minutes; then add one pint of broth; stir till reduced to half the quantity. Drain the chopped stalks of the mushrooms thoroughly in a cloth; put them in the sauce with three tablespoonfuls of chopped and washed parsley, one tablespoonful of chopped and washed shallot, two pinches of salt, a small pinch of pepper; reduce on a brisk fire for eight minutes, put two tablespoonfuls of oil in a *sauté* pan; set the mushrooms in the hollow part outwards; fill them with the fine herbs, and sprinkle over them lightly a tablespoonful of raspings; put in a brisk oven for ten minutes, and serve.

CURRIED MUSHROOMS.—Peel and remove the stems from a dish of full-grown mushrooms, sprinkle with salt, and add a very little butter; stew them gently in a little good gravy or stock. Add four tablespoonfuls of cream, and one teaspoonful of curry powder, previously well mixed with two teaspoonfuls of wheat flour; mix carefully, and serve on a hot dish, with hot toast and hot plates attendant. Mind the "curry stuff is good," says an Indian friend, and not too much of it. The word "curry," by itself, it seems, being merely the Tamil word for "meat." The large, horse-mushroom, when half or three parts grown, and curried in this fashion, will be found to be delicious.

TO POT MUSHROOMS.—The small, open mushrooms suit best for potting. Trim and rub them; put into a stew-pan a quart of mushrooms, three ounces of butter, two teaspoonfuls of salt, and half a teaspoonful of Cayenne and mace, mixed, and stew for ten or fifteen minutes, or till the mushrooms are tender; take them carefully out and drain them perfectly on a sloping dish, and when cold press them into small pots, and pour clarified butter over them, in which state they will keep for a week or two. If required to be longer preserved, put writing paper over the butter, and over that put melted suet, which will effectually preserve them for many weeks, if kept in a dry, cool place.

TO PICKLE MUSHROOMS.—Select a number of small, sound, pasture-mushrooms, as nearly as possible alike in size; throw them for a few minutes into cold water; then drain them; cut off the stalks, and gently rub off the outer skin with a moist flannel dipped in salt; then boil the vinegar, adding to each quart two ounces of salt, half a nutmeg sliced, a drachm of mace, and an ounce of white pepper-corns; put the mushrooms into the vinegar for ten minutes over the fire; then pour the whole into small jars, taking care that the spices are equally divided; let them stand a day, then cover them.

ANOTHER METHOD.—In pickling mushrooms, take the buttons only, and while they are quite close cut the stem off even with the gills, and rub them quite clean. Lay them in salt and water for forty-eight hours, and then add pepper and vinegar, in which black pepper and a little mace have been boiled. The vinegar must be applied cold. So pickled they will keep for years.

MUSHROOM STEMS, if young and fresh, make a capital dish when the supply of mushrooms is limited. Rub them quite clean, and after washing them in salt and water, place them to the thickness of a shilling, then place them in a saucepan with sufficient milk to stew them tender; throw in a piece of butter and some flour for thickening, and salt and pepper to taste. Serve upon a toast of bread, in a hot dish, and add sippets of toasted bread. This makes a light and very delicate supper dish, and is not bad sauce to a boiled fowl.

BREAKFAST MUSHROOMS.—Clean a dozen or so of medium-sized, place two or three ounces of nice clean beef-dripping in the frying-pan, and with it a tablespoonful or more of nice beef gravy. Set the pan on a gentle fire, and as the dripping melts place in the mushrooms, adding salt and pepper to taste. In a few minutes they will be cooked, and being soaked in the gravy and served upon a hot plate, will form a capital dish. In the absence of gravy, a *soup-con* of "extractum carnis" may be substituted.

MUSHROOM SOUP.—Take a good quantity of

mushrooms, cut off the earthy end, and pick and wash them. Stew them with some butter, pepper, and salt in a little good stock till tender; take them out, and chop them up quite small; prepare a good stock as for any other soup, and add it to the mushrooms and the liquor they have been stewed in. Boil all together, and serve. If white soup be desired, use the white button mushrooms and a good veal stock, adding a spoonful of cream or a little milk, as the color may require.

MUSHROOMS AND TOAST.—Peel the mushrooms and take out the stems. Fry them over a quick fire. When the butter is melted take off the pan. Squeeze the juice of a lemon into it. Let the mushrooms fry again for some minutes. Add salt, pepper, spices and a spoonful of water, in which a clove or garlic, having been cut into pieces, has soaked for half an hour; let it stew. When the mushrooms are done, make a thickening of yolks of eggs. Pour the mushrooms on bread fried in butter, and laid in a dish ready for them.

BAKED MUSHROOMS.—Peel the tops of twenty mushrooms; cut off a portion of the stalks, and wipe them carefully with a piece of flannel dipped in salt. Lay the mushrooms in a tin dish, put a small piece of butter on the top of each, and season them with pepper and salt. Set the dish in the oven, and bake from twenty minutes to half an hour. When done, arrange them high in the center of a very hot dish, pour the sauce round them and serve quickly, and as hot as you possibly can.

MUSHROOMS A LA CREME.—Trim and rub half a pint of button mushrooms, dissolve two ounces of butter rolled in flower in a stew-pan, then put in the mushrooms a bunch of parsley, a teaspoonful of salt, half a teaspoonful each of white pepper and of powdered sugar, shake the pan round for ten minutes, then beat up the yolks of two eggs, with two tablespoonfuls of cream, and add by degrees to the mushrooms; in two or three minutes you can serve them in the sauce.

MUSHROOMS ON TOAST.—Put a pint of mushrooms into a stew-pan, with two ounces of butter rolled in flour; add a teaspoonful of salt, half a teaspoonful of white pepper, a blade of mace powdered and half a teaspoonful of grated lemon; stew till the butter is all absorbed, then add as much white *roux* as will moisten the mushrooms; fry a slice of bread in butter, to fit the dish, and as soon as the mushrooms are tender serve them on the toast.

TO STEW MUSHROOMS.—Trim and rub clean a half pint of large button mushrooms; put into a stew-pan two ounces of butter, shake over the fire until thoroughly melted; put in the mushrooms, a teaspoonful of salt, half as much pepper, and a small piece of mace pounded; stew till the mushrooms are tender, then serve them on a hot dish. They are usually sent in as a breakfast dish, thus prepared in butter.

MUSHROOMS A LA PROVENCALE.—Take mushrooms of good size. Remove the stems and soak them in olive oil. Cut up the stems with a clove of garlic and some parsley. Add meat of sausages, and two yolks of eggs to unite them. Dish the mushrooms, and garnish them with the forcemeat. Sprinkle them with fine oil, and dress them in an oven, or in a *four de campagne*.

MUSHROOMS EN RAGOUT.—Put into a stew-pan a little stock, a small quantity of vinegar, parsley and green onions chopped up, salt and spices. When this is about to boil, the mushrooms being cleaned, put them in. When done, remove them from the fire, and thicken with yolks of eggs.

MUSHROOMS WITH BACON.—Take some full-grown mushrooms, and, having cleaned them, procure a few rashers of nice streaky bacon, and fry it in the usual manner. When nearly done, add a dozen or so of mushrooms, and fry them slowly until they are cooked. In this process they will absorb all the fat of the bacon, and with the addition of a little salt and pepper, will form a most appetizing breakfast relish.

MUSHROOMS EN CAISSE.—Peel the mushrooms lightly, and cut them into pieces. Put them into cases of buttered paper, with a bit of butter, parsley, green onions and shallots chopped up, salt and pepper. Dress them on the gridiron over a gentle fire, and serve in the cases.

Practical Recipes.

SCOTCH CAKE.—One pound of fine flour, a half pound of fresh butter, a half pound of finely-sifted loaf sugar; mix well in a paste, roll out an inch thick in a square shape, pinch the edges so as to form small points; ornament with comfits and orange chips; bake in a quick oven. When of a pale lemon color, it is done. This is easy, and very nice.

SOUR MILK CAKE.—One cup of sour milk, two cups of sugar, two eggs, one cup of butter, one teaspoonful of soda, about a pint of flour.

PLUM CAKE.—Nine pounds of flour, nine eggs, three pounds of sugar, one pint of yeast, one spoonful of rose-water. Spice to your taste, wet with milk.

COOKIES.—Take one cup of sugar and two-thirds of a cup of butter. Add two eggs, seven tablespoonfuls of sweet milk, half a teaspoonful of soda, and spice to suit the taste. Roll out thin and sprinkle white sugar over them, before baking them.

SOFT GRAHAM BREAD.—Stir yeast or milk raising into warm skim milk; then stir in Graham flour enough to make a good batter as thick as can well be stirred with a spoon; put

into deep bake-dishes, and set in a warm place to rise, the same as kneaded bread; when light, bake moderately till there is a hard, brown crust over the top, which, if preferred, may be softened by covering with a damp cloth.

THE BEST ICE CREAM.—Our best confectioners, in making their cream use about eight ounces of loaf sugar to every quart of cream. To flavor four quarts of cream with vanilla requires a bean and a half boiled in a little milk. If with lemon, the outer rinds of three lemons should be grated very fine or six drops of oil of lemon to every four quarts of cream.

An Impressive Scene.

A singular scene was witnessed in the Paris Academie des Sciences at a sitting which occurred during the siege. Mr. Egger, Professor of Greek at the Sorbonne and member of the Academie des Belle Lettres, availed himself of the privilege granted to the members of different academies, and presented a long dissertation on a papyrus found in 1866, which gave a deal of information on the state of ancient Egyptian civilization. It related chiefly to the prices of articles used in those times. The bursting of the shells and the thunder of French artillery was distinctly heard during the reading.

It was an impressive scene, to see these learned men discussing a civilization which was swept from the earth so many centuries ago, at a time when their own country was threatened by ruin not less awful and perhaps more disgraceful. The members of the Academie continued their weekly meetings with perfect regularity throughout the bombardment. While everything else was turned upside down, while a dynasty was passing away, while sons and brothers were perishing around them, an enemy at their gates, want within their walls, and missiles of war threatening themselves and their household gods, these men continued their usual studies.

We are reminded of Archimedes at the siege of Syracuse, save that there we have but one man, while here it is a large body of the intellectual flower of the country. Some of the more active of the members are men who have attained that philosophic calm which not even the terrors of war can dispel, nothing diverts them from the even tenor of their way.—*Ex.*

AN EXPERIMENT WITH PAPER CAR WHEELS.—The Springfield *Republican* says the Connecticut River railroad company is about introducing for trial, a set of paper car wheels under the forward truck of one of its engines. These wheels have been known to car-builders for some time, but the demand for them has been moderate on account of their cost, notwithstanding the universally-admitted fact that they are safe and easy going. The wheels are manufactured by bringing a pressure of 350 tons upon sheets of common straw paper, which forces them into a compact mass, which is then turned perfectly round and the hub forced into a hole in the center, this requiring a pressure of 25 tons weight. The tire is of steel and has a one quarter inch bevel upon its inner edge, thus allowing the paper felling to be forced in, 250 tons pressure being required in the process. Two iron plates, one upon each side of the paper, are bolted together, which prevents the possibility of the filings coming out. The tire rests upon the paper only and partakes of its elasticity in consequence. Although these wheels are much more expensive than those in common use, the patentee claims that they are cheaper in the end, as they wear longer, injure the tracks less, and run with less noise than wheels of any other pattern.

THE BOTTOM OF THE MEDITERRANEAN SEA A DESERT.—Dr. Carpenter read an interesting paper before the late meeting of the British Association of Science on the temperature and other physical conditions of inland seas, especially considered in reference to geology. He stated his belief that a uniform glacial temperature would be found to prevail even in equatorial seas, if they went deep enough, and this cold could only be understood on the theory that there was a movement of cold water from the Poles along the bottom of the sea. He showed the inland character of the Mediterranean sea, and that the cold water of the Atlantic could not flow into it on account of the ridge which rose up and shut them off. Hence there was no circulation, and a good deal of finely divided mud, which choked marine life and rendered the bottom of the Mediterranean a desert. He next referred to the temperature of the Red Sea, and showed that at a great depth there was a winter temperature of over seventy degrees. Coral reefs could not grow at greater depth than twenty-eight fathoms, and this, he thought, was due to the cold water below.

The property of glycerine to preserve leather has been known for a long time; it is now proposed to employ it in tanning, to increase the elasticity and resistance of the leather. This system of tanning is particularly adapted to straps and belts of machinery, and it keeps them from drying and cracking. It is only necessary to immerse the leather, tanned in the usual manner, in a bath of glycerine, and to leave it for several weeks, when the pores will be impregnated with the greasy substance, and the leather will be found to be much more elastic and tenacious.

The Advance in Iron.

The mining, railroading and mechanical interests have all been taken by surprise at the great advance in the price of iron. Furnaces and rolling mills that had been lying idle for months and years, are all suddenly called into requisition, new ones are being constructed and put in operation, and still the price of iron goes up. We believe there is no good reason why it should be. There has been no material advance in the iron laborers' wages, no advance in the price of coal, and but little, if any, in the transportation of ores or the manufactured iron. We can see no great disparity between the demand and supply, and yet iron is advancing. It is thus without any good or legitimate cause, and therefore cannot long continue. This advance has, of course, affected the prices of agricultural machinery.

The following is the new process employed for making slate assume the appearance of marble, for decorating interiors. After being properly cut and trimmed, it is scoured with pumice stone, then rubbed with powdered pumice stone, and polished with felt. It is now ready to be transformed into marble. The slabs, having been painted with the ground-work color, are ready to dip. A vat containing water mixed with ox gall, on which the colors are floated, is at hand. A brush is dipped in the colors and sprinkled on the surface, then the water is fanned with a palm leaf and the brush drawn through several times. The mixed paint spreads on the surface of the water like veining in marble, and the slab is then lowered until it touches the surface, when the floating color adheres to it; it is then put to dry. After the application of colors, sundry bakings and polishings finish the work. This marbled slate is quite elegant, possessing sixteen times the strength of marble and scarcely distinguishable from it.

THE WORK OF THE TELEGRAPH.—The new Society of Telegraph Engineers in London have commenced publishing a journal of the progress of telegraphy. The first number contains an interesting paper on automatic telegraphs. Without the automatic apparatus it would be impossible to perform all the work. From the central station in London as many as 400,000 words are transmitted in a single night, and through five or six stations simultaneously, whereby it happens that the quantity of matter telegraphed is equal to a thousand columns of the *Times*! In the working of the telegraph some curious facts have been observed. A message sent through land-lines and an under-sea cable travels more quickly towards the place which has the longer land-line than in the opposite direction. On wires stretched east and west the speed is decreased about noon, a fact due, it is thought, to the diurnal variation in earth currents.

RAPID TELEGRAPHING.—According to the *Journal of Telegraphy* the average actual time of transmitting messages from New York to London, for one week, was 13 minutes 59½ seconds. This includes the long press and government dispatches. Every message has to be written four times. On one day the average time was only six minutes thirty-five seconds. The shortest average time was one minute four seconds. This is wonderful, yet steps are being taken to introduce improved instruments by which the time can be still further reduced.

The engines of the Cunard steamer *Scotia*, are of 5,000 horse-power, 100-inch cylinders, and 12-foot stroke; she burns 160 tons per day, and requires 1,900 tons for an Atlantic voyage. The new style of compound engines effects a saving of fifty per cent. in fuel; the owners of the *Scotia*, therefore, by substituting the new style of engines for the old, would save 1,000 tons of coal per voyage, and add 1,000 tons to the cargo capacity of the vessel.

ANOTHER MONSTER SHIP.—It is said that specifications are at present in the hands of several Clyde shipbuilders, for a vessel to be built for the National Steamship Company, of dimensions only second to the *Great Eastern*. Her length is to be 576 feet over all, and she is to be fifty feet beam and thirty-five feet in depth. It is expected that the great steamship will make the voyage from Liverpool to New York in seven days.

A new street-car has been constructed and put in operation between Ilion and Franklin, New York, propelled by steam, the engine occupying no more space than an ordinary cooking-stove, can be stopped when running six miles an hour in eight feet, uses one ton of coal to a thousand miles, and on a trial trip recently was propelled fifteen miles an hour.

In the course of a month or two there will be placed a line of very large and powerful steam tugs at both the entrances to the Straits of Magellan for the purpose of towing vessels through the straits, thus doing away with the difficult and often dangerous voyage round Cape Horn. The estimated cost of so towing a vessel is £200 to £250.

The result of experience with iron as a material for ship-building has not been favorable to it as a substitute for wood. Of the forty-two Atlantic steamers lost during the past thirty years, thirty-eight were of iron and only four of wood. Amongst coasting vessels an equally proportionate loss can be shown.

Our Agricultural Notes.

We have waded through a perfect flood of Exchanges from every part of the Pacific Coast, to glean our desired three or four columns of Agricultural Notes, short items and facts pertaining to agriculture, horticulture and stock growing. Since the season of our annual Fairs, there seems to be a perfect dearth of this kind of information, and the best we are enabled to do, is a little more than a single column.

We would like to hear from our exchanges all about the condition of the farming and manufacturing interests of their respective localities. The preparation for and commencement of fall plowing; the probable area, greater or less than last year likely to be devoted to wheat, cotton, ramie or any other valuable crop; the success that has attended the growing of fruits in all their infinite varieties and localities; the condition of the weather, prospect of rain or actual rain-fall, recurrence of early frosts and the exact date of the same, and a thousand other items that if brought together make one of the most interesting pages of the RURAL, at least so say numerous letters received from our Atlantic States subscribers.

We think we give our exchanges their full measure of value in return for the information we obtain from them, and we are pleased to be able to reciprocate fully any favors received. In our agricultural notes we are careful to give full credit to the source from whence received, and will be glad to spread before the world in our large circulation, all facts connected with the advantages and development of the several districts represented by our California exchanges, whenever made known to us through their columns.

All About Oregon.

[Written for the Press.]

We go out in a double capacity. In the first place to represent among the thrifty citizens of Oregon the interests of journals which we firmly believe that they in common with other citizens of this coast, will recognize as the standard authorities in their special departments. In the second place we come as an unprejudiced observer, not decided in what locality to make a permanent location, desiring to see things good and bad in their true light, and to place before the public in general and especially before those friends whom we may personally influence, an account which shall at least bear the stamp of fairness.

Authority for Opinions.

On those matters of which our previous experience has rendered us qualified to judge, we shall investigate carefully and report our conclusions. On others we shall furnish the most reliable information within our reach as it is given us, with the name of our authority. We shall not report—"one acre of land will keep a sheep, and two acres will support an ox,"—unless we find that sheep there are half as large as oxen. We shall be more likely to give an estimate of the amount of water in a stream, the number of feet fall available, the supply of material, demand for manufactured products, quality of surrounding country, and means of communication, etc., than to say in a word, "The water power is better than that of Lowell."

Our Present Belief.

We now think that the natural advantages of Oregon, if fairly stated in connection with its disadvantages are sufficient to induce a large and growing immigration. From what we already learn of its resources, making large allowances for exaggeration, it seems to have peculiar and almost unrivalled advantages in the line of agricultural manufactures and commerce. When the North Pacific Railroad, the artery of the Northwest is open, we shall see a good portion of the life-blood of the nation flowing that way.

We mean to tell our readers how Mr. Holladay pushes things in the Railroad line; how Mr. Cross cures those splendid hams; how Mr. Dufer conducts his dairy; how they get along at the Willamette Woolen Mills; and we mean to get some of these, or the thousand other live men whom we expect to meet, to write for the PRESS and keep up the reports of their Farmers Clubs which have proved of so much interest in California.

Let the people of Oregon give us generously of their support, remembering that one good strong College newspaper is better than a dozen half supported.

CANAL AND NARROW GAUGE R. R. COMBINED.—Among the designs exhibited at the late State Fair is one very modest in appearance, but full of merit, by George G. W. Morgan, of Sacramento. It is for a canal and single track, narrow gauge railroad combined. This plan, it appears, is in successful operation in Switzerland, and can be built at a very small expense. A canal would reclaim our waste lands, transport freight at a minimum rate, open up new towns and cities—like the Erie canal of New York—and be a never ending source of wealth to the State.—*Sacramento Union*.

Malaga Muscatelle.

EDS. RURAL PRESS:—Having been much pleased with a communication from W. A. Sanders, in your issue of October 5th, concerning raisins, I would remark that I have 26 acres of the Muscatelle grapes and have made some experiments in raisin culture. I thought, as he could not answer private correspondence on that subject, I would send you a sample of the Muscatelle grapes and a few raisins, not selected but taken as they come from the box.

Hoping that you will dispose of them to suit your taste, I remain yours, R. B. BLOWERS, Woodland, Yolo Co., Cal.

The grapes and raisins were received in excellent condition, and the donor will please accept our thanks for the generous gift. We have no where seen better specimens of the genuine Malaga Muscatelle than these from Woodland, whilst the raisins are of fair quality, thin skinned, pulpy and of good flavor; the drying could be improved upon.

We are glad to know that the raisin interest is everywhere receiving increased attention. It is just what will render the grape production of our State doubly valuable over its use for wine or brandy, to say nothing of the moral effect as between the general use of raisins and the products of fermentation.

AGRICULTURAL NOTES.

CONTRA COSTA.

Gazette, Oct. 19: ANOTHER CLUB.—The farmers of Danville and vicinity have effected the organization of a club, and will hold regular, stated meetings, of which we shall be glad to publish such reports as are forwarded to us, when not present in person at the meetings, as we sometimes hope to be.

BLUE STONE.—Mr. Best, of Marysville, has perfected an effective and cheap machine, by which blue-stoning of seed wheat can be done in a very thorough and expeditious manner. The wheat is fed by a hopper and run through the machine into sacks, and at the rate of a thousand bushels a day, if it is required. Mr. S. S. Johnson, of this place, has the agency of this new machine, and will have one here for inspection within a few days.

NAPA.

Reporter, Oct. 19: THE AGRICULTURAL FAIR. The fair at Vallejo, last week, was more than was expected. The interest was greater, and the display of articles, stock, etc., better than the managers expected, this being the first fair. The races formed an important feature in the fair, but did not engross the attention from other things.

THE VINTAGE is progressing well. The vine-growers are busy gathering the crops, and the cellars receiving and crushing the same. Much complaint is made that the cellars will not receive the grapes fast enough. In many vineyards the grapes are beginning to dry out, and consequently lose much of their weight.

HONEY DEW.—While in St. Helena, last week, we noticed a strange freak of nature. The honey dew falls so heavily in some places, as almost to cover the surface of the ground, while close by, no trace of it can be seen. It is noticed very abundant under the oaks—some of them—while under the same kind of oaks, only a few places distant, none at all falls. Where it does fall, it is more abundant than we ever noticed elsewhere—forming in large globules. We have read of the land where milk and honey flows, but in St. Helena it is wine and honey.

The same paper, of October 5th, thus sums up the results of the harvest in that vicinity: The yield of cereals has been lighter than was supposed before threshing commenced, but the quality is very fine. The grain is well filled, and we may expect a choice quality of flour. The farmers have been very busy housing and disposing of the crop, and the end is not yet. A great part of the crop in the upper portion of Napa Valley is shipped direct to Vallejo. Berryessa, Gordon, Wooden and the lower portions of Napa have either stored their grains at our warehouses, or shipped per schooner to Vallejo. Mr. Sheehy's warehouse is well-nigh full, and nearly as much as there is now on store has been shipped by this house to Vallejo. The capacity of the house is about 30,000 tons. The Banner warehouse, Ellis & Keyes proprietors, has a capacity of about 40,000 tons. They are nearly full, and unless they commence shipping will soon have to refuse much grain.

The corn crop is fair. It suffered considerably from drouth, yet more than an average yield is expected. Some of the corn fields up the valley on the bottom lands are as fine as the country can boast.

The fruit crop has been good. Peaches, apricots, plums, etc., now out of market, were, during this season, fine and plentiful, and brought good prices. Pears and apples are still plentiful, and the market is good. Many are laying in their winter supply. The grape crop is not proving as good as was expected. It is now well ascertained that the crop will fall far short of last year. The bunches, especially of the Missions, are not as well filled as last year. The spring frosts, though not doing the damage first supposed, have very materially injured the yield. The grape is usually smaller, but sweeter than last year. The grape-growers are

just now commencing in good earnest with the fall vintage.

Notwithstanding the shortness of the crop, the prices the wine-makers offer for grapes are much below last year's figures. Last year foreign varieties brought from \$25 to \$30; Mission \$20 per ton; this year, \$22.50 for foreign, and \$15 for Missions are the highest prices offered. Wine-makers say that so far the supply of wine has exceeded the demand, and that there is no sale for the old stock on hand. The grape-growers say that the Eastern markets are just beginning to demand our wines, and that fairer prices are now offered than ever before for good brands. Which is right, or which is magnified, is not for us to decide. If the wine-makers are imposing on the wine-growers, we know of but one remedy—make yourselves independent by establishing cooperative wine associations.

SAN DIEGO.

Union, Oct. 17: RAIN IN THE SAN MIGUEL MOUNTAIN.—A lively rain storm of an hour's duration, accompanied by thunder and lightning took place in the San Miguel mountain, last Sunday afternoon about half past one o'clock. The foot of the mountain is about 12 miles from town.

A BIG TURTLE CAPTURED IN THE KELP.—Captain Niles, while cruising around on Friday last, spied in the kelp a monster turtle trying to disengage itself from the kelp in which it was tangled. He made sail for the spot with the intention of helping the sea tortoise out of its difficulty by taking it aboard the yacht.

He found, however, that he had no small job on hand, for the animal—it is as much flesh as fish—weighed about 600 pounds. After effecting its capture, the Captain made his way to Culverwell & Jorres' wharf with his prize, where he has moored it until the steamer Orizaba sails for San Francisco. Kelp is a vegetable product, hence an agricultural note of this article.

SAN JOAQUIN.

Argus, Oct. 5: SHEARING.—Most of the wool-growers of this section of the country have brought their sheep down from their summer ranges in the mountains and are now actively engaged in shearing. One great drawback to sheep-shearing now is the scarcity of hands to shear. The price of wool has come down greatly since the spring clip was put in market, yet the price is high enough to make the business quite profitable to practical men who carry on the business in a proper manner.

Independent, Oct. 16: A NEW INVENTION.—Lumsden, the inventor, had on exhibition at our late District Fair, a machine for the manufacture of screwed boots, for which a special premium and diploma were awarded. The machine is a California invention, patented, and must be seen to be appreciated. Hundreds of thousands of dollars worth of French screwed boots are imported yearly to supply the demand, for the reason that there is no cheap machine to do the work in the United States. The French screw machine cost, we are told, \$400 each, thus placing it out of the power of poor men to do business on their own account. Mr. Lumsden's apparatus cost \$50, and is warranted to last a life-time.

YUBA.

Appeal, Oct. 16: THE JOHNSTON DISTILLERY. This distillery is now in successful operation, and is well supplied with grapes by the stockholders, who are allowed \$16 per ton for the same, though this is above the market price. The company is buying none from non-stockholders, and are forced to send their crops below, where the Mission variety sells for \$12 per ton, though foreign varieties, more suitable for wine, bring \$20—the price paid last year for common Mission. The Johnston Wine and Brandy Manufacturing Company, which uses a patent chamber for catching, condensing and purifying the vapors from the still, continues to extend its operations. In 1869, 4,500 gallons were made with the Johnston still, near Folsom; and in 1870, perhaps as much more; in 1871 a new still, in Sacramento, turned out 16,000 gallons; and, this year 40,000 gallons will be turned out under the Johnston patent, without the help of the new establishment in this city. An average ton of grape yields about 45 gallons of proof brandy. The expenses on a gallon of brandy are thus calculated: Federal tax, 65 cents gold; grapes, 33 cents; cask, 10 cents; handling, crushing, fermenting, distilling and putting into the cask, 22 cents; total, \$1.20. It is claimed that no small distillery can make brandy so cheaply, or so uniform in quality, or turn out a good article at one operation.

GOATS.—A herd of goats, numbering about 75, belonging to Mr. Rodolf of Butte County, were driven through the city yesterday to the Yuba ranch for pasture. These mammiferous quadrupeds of the genus *capra*, are more or less mixed and all being females are intended for breeding a purer Cashmere stock.

HOT WEATHER.—The last ten days in this city have been very warm from 9 A. M. till 5 P. M., and everybody is praying for the first shower. We are generally blessed with one or two dust-settlers about the 20th of October, and no one can say this season will prove an exception.

SOMETHING NEW.—We were shown yesterday at the Empire Foundry a model of an implement called a "grain elevator," to be used to raise grain laid down by the winds. It is intended to be attached to the front of a header. The "grain elevator," if found to be practical by service in the field, will be valuable in an economical point of view, as it will cost but a few dollars

and pick up many bushels of grain in a hundred-acre field.

October 19: LARGE GRANARIES.—We are informed that Dr. Glenn, of Jacinto, is building two granaries at that place. Each building will be 62x300 feet. This is necessary in order to protect the immense amount of grain raised in that vicinity, and which owing to the boats not coming up the river that far, will have to be stored until there is more water in the river. Dr. Glenn is the owner of sixty square miles of land and his crop of wheat this year amounted to 250,000 bushels. We think it would be a good investment for some person to build a house for the storing of grain in this town. The cost of a building 60x300 would not exceed \$2,500, and we have no doubt would be a paying investment, and also a great accommodation to our farmers.

List of Officers of the Agricultural Societies of California.

State Board of Agriculture.—President—CHAS. F. REED, Grafton, Yolo County. Directors—Coleman Younger, San Jose; R. S. Carey, Yolo; Chas. H. Rose, Sacramento; Wm. Blanding, San Francisco; E. J. Lewis, Tehama; W. F. Coleman, Sacramento; C. T. Wheeler, Sacramento; Robt. Hamilton, Sacramento; Edgar Mills, Sacramento. Officers of the Board—Recording Secretary, Robert Beck, P. O., Sacramento; Corresponding and Traveling Secretary, I. N. Hoag, Sacramento; Treasurer, R. T. Brown, Sacramento.

Southern District Agricultural Association.—Los Angeles.—President—L. J. Rose, Los Angeles; Vice Presidents—J. A. Johnston, Santa Barbara; A. J. Fisher, San Bernardino; George A. Johnston, San Diego; Wm. Baker, Fort Tejon; L. H. Titus, Los Angeles. Treasurer—J. W. Hittman, Los Angeles; Secretary—J. A. Fisher, Los Angeles; Trustees—John Reed, F. M. Slaughter, James Thompson, W. F. Edgar, T. D. Mott, J. G. Downey, J. S. Griffin, Wm. Ferguson, O. W. Childs, Los Angeles.

Northern District Agricultural, Horticultural and Mechanical Society.—President—S. T. Brewster, Marysville; Secretary—J. C. Donly, Marysville; Treasurer—M. Marcuse, Marysville; Vice Presidents—D. E. Knight, Marysville; P. Pumyea, Marysville; A. W. Johnston, Marysville; M. C. Duffrey, Marysville; Chas. Kent, Nevada; John Boggs, Colusa; E. C. Singletary, Colusa; J. R. Nickerson, Lincoln; Harmon Bay, Chico; R. E. Garland, Quincy; Dan T. Cole, Brush Creek; Thos. Dean, Yuba City; C. F. Reed, Knight's Landing; J. B. Frisbie, Suisun; J. B. McDonald, Marysville.

Santa Clara Agricultural Society.—President—W. C. Wilson, San Jose; Vice Presidents—Cary Peebles, San Jose; J. P. Sargent, Gilroy; Directors—Wm. B. O'Donnell, San Jose; S. B. Emerson, Mountain View; Treasurer—C. T. Ryland, San Jose; Secretary—George Givens, San Jose.

Sonoma & Marin Agricultural Society.—President—Lee Ellsworth, Petaluma; Vice Presidents—E. Denman, J. A. Rose, Petaluma; Treasurer—F. W. Longes, Petaluma; Secretary—I. Grover, Petaluma; Directors—H. Meehan, Petaluma; G. Watson, San Rafael.

Upper Sacramento Agricultural Society.—President—Harman Ray, Chico; Vice Presidents—G. C. Perkins, Oroville; G. F. Jones, Chico; Secretary—E. Haillet, Chico; Treasurer—C. L. Pond, Chico; Directors—D. M. Reavis, S. M. Sproul, Chico; T. L. Daniels, Oroville; R. M. Cochran, G. F. Nourse, C. A. Miller, G. B. Cosby, Chico; J. F. Martin, Dayton; G. W. Colby, J. L. Ruffe, Napa; M. Biggs, Hamilton; Wm. DeHaven, Chico; H. A. Rawson, Red Bluff; A. G. Townes, J. C. Tyler, Tehama; J. Boggs, Princeton; George Hoag, Jacinto; H. I. Glenn, Princeton; J. J. Rnie, Shasta; L. M. Breed, Susanville; M. B. Bramford, Quincy.

Siskiyou Co. Agricultural Society.—President—William McConnell, Yreka; Vice President Jas. Vance, Yreka; Secretary—J. M. Strauser, Yreka; Directors—William Irwin, Robert Wilson, Samuel Magoff, L. Swan, James Quinn, Yreka; Jesse Davis, J. W. Evans, Little Shasta; David Horn, Fort Jones; George Smith, Rough & Ready.

Solano and Napa Agricultural and Mechanical Arts Society.—President—A. M. Stevenson, Vacaville; Vice Presidents—J. B. Carrington, J. L. Heald, Vallejo; Nathan Coombs, Napa; James M. Thomson, Suscol; A. C. Palmer, Callistoga; M. R. Miller, Pleasant Valley; Secretary—John M. Gregory, Vallejo; Treasurer—J. B. Frisbie, Vallejo.

San Joaquin Valley Agricultural Society.—President—J. K. Doake, Stockton; Vice Presidents—D. F. Douglas, George Worst, Linden; Secretary—H. T. Compton, Stockton; Treasurer—T. K. Hook, Stockton; Directors—J. R. W. Hitchcock, French Camp; W. D. Ashley, Stockton.

Bay District Agricultural Association.—President—J. M. Duncan, San Francisco; Directors—S. B. Whipple, J. N. Killip, R. F. Morrow, H. R. Covey, C. S. Crittenden, William Ware, R. A. Finnigan, Oscar Lewis, S. L. Theller, W. Hendrickson, J. B. Dorr, San Francisco.

Contra Costa Agricultural Society.—President, G. P. Loucks; Vice-Presidents, G. M. Bryant and Chas. E. Howard; Directors, J. H. Hazeltine and Henry C. Gallagher; Secretary, O. F. Alley; Treasurer, S. W. Johnson.

The Mining & Scientific Press,

Started in 1869, is one of the oldest weekly journals now published in San Francisco. It has been conducted by its present proprietors for nine years, during which period it has been repeatedly enlarged and constantly improved. The active and steadfast efforts of its publishers have gained for its conduct an amount of practical experience greater than any other publishers have accumulated on this coast, of a weekly journal.

The sum paid by us for the best editorial talent obtainable for our special class journal; for engravings, for interesting news and correspondence, and for printing a large-sized, handsome sheet, is unequalled by that of any other American weekly west of the Mississippi. As a PRACTICAL MINING JOURNAL it has no rival on this Continent.

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Every Intelligent thinker in the land, in high or humble situation, who would avoid literary trash for genuine information, should SUBSCRIBE AT ONCE.

SEND US NOTICE.—In some instances, by order of agents or others, we have continued for a time to send this paper beyond the time paid for. As we do not intend to send it to a single individual who does not wish it, we earnestly request such specially treated subscribers, who may not wish the paper, to send in the amount of arrears with order to stop. A second hint will not be necessary if you give us your postoffice address with your name. Don't rely on P. M.'s to notify us. We cannot find the name on our large list by a subscriber's simply returning the paper without the town or city accompanying his name upon it. Papers returned are not so sure as letters to reach the publishers' desk.

Jambp

THE COLLEGE COURANT.—This excellent publication has recently been placed under new editorial management, and numbers among its contributors some of the most distinguished college professors in the country, such as President Chadbourne, of Williams College; Ex-President Woolsey, of Yale; President Barnard, of Columbia; President White, of Cornell University; Professor Winchell, of Michigan University; Professor Tyler, of the same; President Porter, of Yale; Professor Hitchcock, of Dartmouth, Professor Bascom, of Williams; Professor J. D. Dana, of Yale; Professor Dolbear, of Bethany; Professor Sewall, of Bowdoin; Professor Lacroix, of Ohio Wesleyan University, and Professor Marcy, of Northwestern University. The book-notices in this Journal are always good, and the editorials are on a variety of topics interesting to educated persons. It addresses itself, therefore, to all people of culture, especially to the nation's educated journalists, teachers and the college community. The subscription price of the *Journal*, which is published in New Haven, Conn., is \$4 per year, or it will be sent for three months on trial for \$1.

AND NOW COMES "OLD STUPIDITY" HERSELF. The *Commercial Herald* called us "busy bodies" and now the *Alta* prates of "stupidity," because we gave wheat quotations from *Mark Lane Express* and from telegraph reports of same dates, and showing a discrepancy between them. The *Herald* has very foolishly gone rabid, because it could not satisfactorily explain the reason of the discrepancy, while the *Alta*, after waiting for an expression of opinion from all the other dailies, is at last ready to attribute it to our "stupidity."

It was very "stupid" in us—as we understand the *Alta*—to have made any expose giving "brilliant" journals (like the *Alta*) so much trouble to explain away. And they have not explained it yet.

ON HAND.—Nut-Tree Planting, etc., before the Oakland F. H. and I. Club.

A New Potato.

The Late Rose Potatoes, grown by C. H. Dwinelle, of Oakland, and exhibited by DEWEY & CO., of the PACIFIC RURAL PRESS, are the first of this variety raised in California. As one of the latest of celebrated new varieties, we mention some of its peculiarities. It bears a strong resemblance to the Early Rose in form, but has its marked characteristics in maturing about three weeks later when planted side by side. The Late Rose is also hardier, healthier, a greater producer and a better keeper, retaining its good qualities throughout the season. Its growth in California the present season has been a favorable one, with every prospect of its maintaining here its excellent reputation established within the past two years in the Eastern States.—*Sacramento Union*, Sept. 26th.

The above potatoes, which were awarded a special premium at the State Fair, were samples from a small quantity raised this season. A portion of the same will be sold in small lots if desired. Price, 4 lbs. for \$1, sent by mail, prepaid. Address C. H. Dwinelle, Oakland, or care of this office.

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Can now be secured to advantage under the NEW LAW in the United States. Parties interested will be furnished with all information desired, and have their application intelligently prepared and promptly forwarded to the Patent Office, and their patents secured in good time, by DEWEY & CO., U. S. and Foreign Patent Agents, No. 338 Montgomery st., S. F. bp-16p

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Farmers, everywhere, write for your paper.

ALFALFA SEED.—We learn that the growing of Alfalfa seed has this year in California proved a failure, though the plant has made its usual vigorous growth. This failure to grow the seed at home, has caused a slight rise in the price asked, parties holding it at present at 17 cents a pound. There is also a scarcity just now, though large orders have gone to Chili, with the view of meeting a largely-increased demand the coming winter. California seed will probably be worth from 20 to 25 cents per pound.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]
SAN FRANCISCO, Thurs., A. M., Oct. 24.

FLOUR.—The interior and local demand is active, with a moderate inquiry for export. We quote prices as follows:

Superfine, \$4.00@4.25; Extra, in sacks, of 196 lbs. \$4.75@5.25; Oregon brands, \$4.75 @5.25 in sacks of 196 lbs.

WHEAT.—The market is firm with free receipts. Sales aggregate 60,000 sacks fair to choice, at \$1.50@1.62½. The range for shipping grades is \$1.55@1.60; Dark Coast, \$1.40 @1.45, and Bright Coast \$1.50@1.55, choice milling, \$1.60@1.62½ per 100 pounds.

The latest Liverpool market quotations dated Oct. 23d, are: average California wheat, 12s 11d; California Club wheat, 13s 6d.

BARLEY.—The market is steady. Bay, \$1.20 @1.22½; Coast, \$1.15@1.17½ per 100 pounds.

OATS.—Market is rather dull. Ordinary to choice, \$1.50 to \$1.85 per 100 lbs. Light feed, \$1.50@1.55; good do. \$1.60@1.65; heavy do. \$1.70@1.75; Oregon, \$1.80@1.85.

CORN.—Yellow \$1.37½ @1.50 per 100 lbs. **CORNMEAL.**—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$1.75@2.00 per 100 lbs.

RYE.—Is quiet at \$1.80 per 100 lbs.

STRAW.—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN.—Price is now \$20 per ton from the mill.

MIDDLINGS.—For feed, are selling at \$27.50 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been free during the week. Wild Out, \$15@16, and choice wheat, \$17@18 per ton. Quotable at close at \$10@18 ordinary to choice.

HONEY.—Best Los Angeles and San Diego sells at 20@22½c; other kinds 10@15c in comb; strained, 10c@15c. per lb.

BEESWAX.—Quiet at 33@35c per lb. **POTATOES.**—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from \$1.15 to 1.62½. Carolina, 75c. per 100 lbs.

ONIONS.—Quotable at \$1.75@2.00 per 100 lbs.

WOOL.—The market continues dull. Sales of 350,000 lbs. Fall at current rates. Spring is neglected and nominal. Fall, 11@14c. for burry, and 15@18c. for clear; 19@20c. for choice. **TALLOW.**—Good quality of Cal. 8@8½c.

SEEDS.—Flax 3c.; Canary, 4½c. Mustard, 1@3c. per lb.

PROVISIONS.—Following are jobbing quotations: California Bacon 13@14c per lb.; Eastern do. 12@13 for heavy and 13½@15 for sugar-cured Breakfast; Cal. Hams 14½@15½; Eastern do, 19@20c; California Smoked Beef, 12½@13c. per lb.

BEANS.—The following are jobbing rates: Pea \$2.75@2.80 Small White \$2.75; Small Butter, \$2.62½; large \$2.75. Bayo, \$2.75@3.00; Pink, \$2.75@2.80 per ctl.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8 Pecan, 20c per lb.; Hickory, 12c; Brazil, 16c. Chili Walnuts, 12½c.; French Almonds, 25 @30c.; Princess Almonds, 35@40c.; Cocoanuts, \$10.00 per 100.

HOPS.—California are dull and nominal at 25@30c per lb.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 8½@9 per lb. do. 2d quality 6@7 per lb.; do. 3d do. 4½@6c.

VEAL.—Quotable at 7@11c.

LAMB.—Scarce at 9c.

MUTTON.—Quiet at 6½@7c. per lb.

PORK.—Undressed grain-fed is quotable at 6@6½c. dressed, grain-fed, 8@9c. per lb.

POULTRY.—Live Turkeys, 20@22c. per lb.; Hens \$8.50@9.00; Roosters, \$6.00@7.00 per dozen; Spring Chickens, \$4.50@5.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 per dozen.

WILD GAME.—Quail, \$1.75@2.00; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, 50c.@75c.; Mallard Ducks, \$4.50@5.50; Teal, \$2.00@2.50; English Snipe, \$2.00@3.00, small, \$1; Venison, 8@9c. per lb.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 30@65c., per lb. Inferior and ordinary roll is plentiful, but dull at 30@45c.; choice scarce at 60@70c. New firkin is quotable at 25@35c.; pickled, 30@40c.; Eastern firkin 18@27½c.

CHEESE.—New California, 10@15c; Eastern at 14@16c. per lb.

Eggs.—California fresh, are sold at 52½c.; Oregon, 40c.; Eastern, 20@30c. per doz.

LARD.—California 12@13. Eastern in cases

13@13½c.; do in tes. 11½@12c.; in kegs, 12@12½c. per lb.

HIDES.—Sales for the week embrace 1,100 Cal. dry at 17@18c., and 1,050 salted at 8@9.

FRUIT MARKET.

Tahiti Oranges, M 45 00	—	—	—	—	—
Limes, M 12 50	15 00	—	—	—	—
Apple, Lemons, M 1 00	1 50	—	—	—	—
Acid, do, M 1 00	1 50	—	—	—	—
Bananas, M 10 00	12 00	—	—	—	—
Pineapples, M 10 00	12 00	—	—	—	—
Apples, Bell, M 1 25	1 50	—	—	—	—
King, do, M 1 25	1 50	—	—	—	—
R. I. Greening, M 1 25	1 50	—	—	—	—
Northern Spy, M 1 25	1 50	—	—	—	—
Baldwin, M 1 25	1 50	—	—	—	—
Saratoga, M 1 25	1 50	—	—	—	—
Spitzenberg, M 1 25	1 50	—	—	—	—
Pears, Bartlett, M 1 25	1 50	—	—	—	—
Seckels, do, M 1 25	1 50	—	—	—	—
Dutchess, do, M 1 25	1 50	—	—	—	—
Fall Butter, M 1 00	1 25	—	—	—	—
Beurre d'Alger, M 1 00	1 25	—	—	—	—
Beurre d'Orleans, M 1 00	1 25	—	—	—	—
Peaches, Comm, M 1 00	1 25	—	—	—	—
Apricots, M 1 00	1 25	—	—	—	—
Nectarines, M 1 00	1 25	—	—	—	—
Plums, M 1 00	1 25	—	—	—	—

DRIED FRUIT.

Apples, M 1 00	1 25	—	—	—	—
Pears, M 1 00	1 25	—	—	—	—
Plums, M 1 00	1 25	—	—	—	—
White, M 1 00	1 25	—	—	—	—

VEGETABLES.

Cucumbers, M 1 00	1 25	—	—	—	—
Summer Squash, M 1 00	1 25	—	—	—	—
Tomatoes, river, M 1 00	1 25	—	—	—	—
Tomatoes, bay, M 1 00	1 25	—	—	—	—
String Beans, M 1 00	1 25	—	—	—	—
Lima Beans, M 1 00	1 25	—	—	—	—
Peas, M 1 00	1 25	—	—	—	—
Peppers, M 1 00	1 25	—	—	—	—
Okra, M 1 00	1 25	—	—	—	—

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES.—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING.—English Standard Wheat bags, hand sewed, 15½c.; Flour sacks 8½@9½c. for qrs. and 13½@14c. for hlfs. Standard Gunnies are jobbing at 18½c.; Wool 70@75c.; Barley sacks 16c.@18c.; Hessians, 40-inch goods, 12@12½c. per yard.

BUILDING AND FENCING MATERIALS.—There is an improvement in the lumber trade in consequence of preparations for the approaching rains. Export trade is light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$18@19; do. surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, M 1 00	1 25	—	—	—	—
Rough refuse, M 1 00	1 25	—	—	—	—
Rough clear, M 1 00	1 25	—	—	—	—
Rough clear refuse, M 1 00	1 25	—	—	—	—
Rustic, M 1 00	1 25	—	—	—	—
Rustic refuse, M 1 00	1 25	—	—	—	—
Surfaced, M 1 00	1 25	—	—	—	—
Surfaced refuse, M 1 00	1 25	—	—	—	—
Flooring, M 1 00	1 25	—	—	—	—
Flooring refuse, M 1 00	1 25	—	—	—	—
Beaded flooring, M 1 00	1 25	—	—	—	—
Beaded flooring refuse, M 1 00	1 25	—	—	—	—
Half-inch Siding, M 1 00	1 25	—	—	—	—
Half-inch Siding refuse, M 1 00	1 25	—	—	—	—
Half-inch Surfaced, M 1 00	1 25	—	—	—	—
Half-inch Surfaced refuse, M 1 00	1 25	—	—	—	—
Half-inch Battens, M 1 00	1 25	—	—	—	—
Pickets, rough, M 1 00	1 25	—	—	—	—
Pickets, rough, pointed, M 1 00	1 25	—	—	—	—
Pickets, fancy, pointed, M 1 00	1 25	—	—	—	—
Shingles, M 1 00	1 25	—	—	—	—

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—					
Rough, M 1 00	1 25	—	—	—	—
Flooring and Stepping, M 1 00	1 25	—	—	—	—
Flooring, narrow, M 1 00	1 25	—	—	—	—
Flooring, second quality, M 1 00	1 25	—	—	—	—
Laths, M 1 00	1 25	—	—	—	—
Furring, M 1 00	1 25	—	—	—	—
Redwood—					
Rough, M 1 00	1 25	—	—	—	—
Rough refuse, M 1 00	1 25	—	—	—	—
Rough Pickets, M 1 00	1 25	—	—	—	—
Rough Pickets, pointed, M 1 00	1 25	—	—	—	—
Fancy Pickets, M 1 00	1 25	—	—	—	—
Siding, M 1 00	1 25	—	—	—	—
Tongued and Grooved, M 1 00	1 25	—	—	—	—
do do refuse, M 1 00	1 25	—	—	—	—
Half-inch surfaced, M 1 00	1 25	—	—	—	—
Rustic, M 1 00	1 25	—	—	—	—
Battens, M 1 00	1 25	—	—	—	—
Shingles, M 1 00	1 25	—	—	—	—
Sugar Pine is jobbing at \$50@60 for clear and \$35@45 for second quality.					

COFFEE.—Costa Rica 19@19½c; Guatemala, 18c. Java 23c; Manilla, 18½c; Rio 19½c@20; Ground Coffee in cases 30c; Chicory, 10c.

SPICES.—Allspice 14@15c. Cloves 20@22c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19@20c. Ground Spices—Allspice \$1.00 @1.50; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod new, in bundles at 6½c.; Salmon in bbls. \$5.00@6.00, hf do. \$3.50@4.00; Case Salmon, \$3.00 for 2½ lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.00@2.25; Mess, \$2.50; Extra mess, \$3.00.

NAILS.—Quotable at \$6.00@9.00 for assorted sizes.

RICE.—Sales of China No. 1 at 6½@7c. and No. 2 at 5½@6c. per lb; Siam, quotable at 5½ @6c in mats; Japan, 5½@6c. per lb.

SOAP.—The prices for local brands are 5@10c. and Castile, 11½@12c per lb.

SUGAR.—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c. and Granulated 12c; Golden C. 10½c; Extra Golden C. 11c; Hawaiian 8@10c. as extremes per lb.

SYRUP.—Prices may be given as follows: 42½c in bbls, 45c in hf bbls, and 50c in kegs.

SALT.—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

TEA.—We quote as follows for bulk descriptions: Amoy—Common to fair, 30@

45c.; superior to fine, 55@65c.; extra fine, 75@85c. Foochow—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Souchow and Congou—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75@85c. Japans—Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55@75c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, Oct. 24, 1872.

MISCELLANEOUS.					
Butter, Cal. fr. do	60	@ 65	Wheat, sds, 22 3/4	8 1/2 @	9 1/2
do Oregon, do	60	@	Flour cks, qr....	9	@
Honey, do	20	30	do Hll	13 1/2	@ 14
Cheese, do	20	30	Potato 4 1/2 Bage	18 1/2	@
Swiss Cheese, do	50	@	Second-hand do	12 1/2	@ 16
Eggs, Cal., doz.	65	@ 65	Deer Skins, B. B.	15	@ 22
do Oregon, doz	65	@	Sheep skins, w/ on	50	@ 75
Lard, do	18	@ 20	Sheep skins, plain	1 50	@ 5 50
Sugar, cr. 7 1/2 lb	100	@	Goatskins, each	25	@ 50
Brown, 8 to 10 lbs.	100	@	Dry Cal. Hides.	17	@ 18
Beet, do	12	@	Salted do....	8	@ 9
Sugar, Map, do	30	@	Dry Mex. Hides.	17 1/2	@
Plums, dried, lb	15	@ 30	Salted do	9 1/2	@ 10
Peaches, dried, 1 1/2	12	@	Codfish, dry, B. 10	10	@ 12 1/2
Wool Sacks, new	70	@	Live Oak Wood.	@ 10	@ 00
			Tallow.....	8	@ 8 1/2

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The Fruits and Fruit Trees of America, or the Culture, Propagation, and Management in the Garden and Orchard, of Fruit Trees generally, with descriptions of all the finest varieties of Fruit, Native and Foreign, cultivated in this country. By A. J. DOWNING. Illustrated: 1088 pages; 1869. The best authority, and only complete work. Price, in cloth and gilt, \$5, post paid, by DEWEY & Co., this office.

New American Farm Book—originally by R. L. Allen; revised by Lewis F. Allen, 1871. Embracing information on all general subjects pertaining to Farming and all branches of Husbandry—a wide range, yet very fully and ably treated. 526 pages. Price \$3, post paid. Address DEWEY & Co., this office.

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The steamer "Reform" makes three trips per week from the Ranch to San Francisco.

Price, \$12,000—Terms, Cash.

For further particulars inquire of
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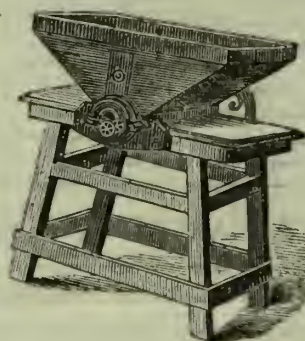
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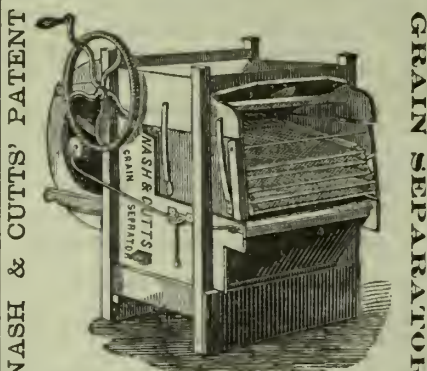
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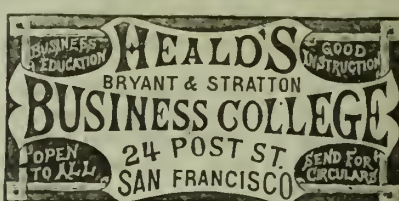
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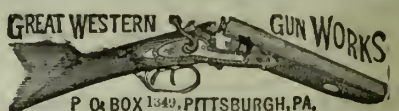
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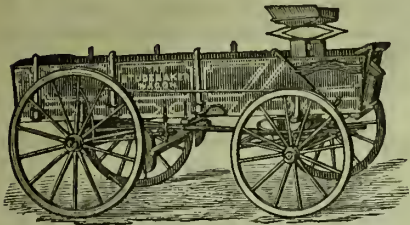
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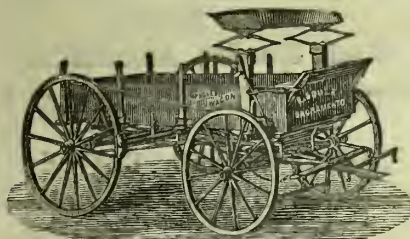
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The following are some of the reasons why these
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They will plow any kind of soil, and leave the ground
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Premium of \$40 for the best Gang Plow, after a fair test
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This Plow is thoroughly made by practical men who
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Cotswold Sheep and An-
gora Goats.

A large lot of Angora Goats and Cotswold Sheep for
sale. Also 100 Southdown and Cotswold graded Rams,
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All of the above will be sold on reasonable terms and
delivered on the cars at Watsonville free of charge.

JUST ARRIVED!

Eighty-five head of Choice, Pure Breed Angora Goats—
47 Bucks and 38 Ewes—the largest importation ever
made to this coast, mostly from the flock of Richard
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2v4-3m

Watsonville, Santa Cruz Co., Cal.

TO SHEEP BREEDERS!

And all such as are interested in raising FINE STOCK,
attention is invited to the flock of Severance & Peet,
consisting of

80 Thoroughbred Spanish Merino Rams,
and 200 Yearling and two-year old Ewes,

Just imported from Addison County, Vermont. These
Sheep were all selected from noted flocks by one who
has bred this variety of Sheep for fifteen years, and are
superior in the combination of qualities that go to make
up a perfect Sheep. A portion of this flock will be
offered for sale on reasonable terms.

NOW IS THE TIME TO BUY,

As this variety is rapidly advancing in the East.

May be seen and examined at the CITY GARDENS,
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FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to re-
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and the Eastern States, consisting of Short-horned
Durham, Devon and Alderney Cattle; Cotswold, Span-
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shire and Essex Swine. All of which will be sold on
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Seventy-five head of the Silesian Sheep have arrived
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Petersen's Patent Bee-Hive.

This HIVE is a California invention, simple in its
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enough for the amateur or professional beekeeper.
Among the paramount objects secured by this Hive are
the facility it affords of examining at all times the
stores of the bees, and the taking away of any surplus,
or supplying whatever may be wanting. Also the
presence and state of health of the queen bee; in fact,
in all sorts of emergencies; increasing the number of bees
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special importance to the progress of bee science, can
be thoroughly examined with reference to the behavior
and habits of the different bees, queens, drones and
workers, although there is no glass used in its con-
struction.

Persons familiar with the habits of bees know that
one of their most necessary and frequent employments
is the expulsion of the over-heated and foul air from
the hive. To do this, the bees station themselves at or
near the opening in the hive, turning their heads in-
wards, take hold with their feet and move their wings
with such rapidity as to cause a considerable current of
air, frequently causing a draft strong enough to be per-
ceptibly felt outside the hive. The improvements in
this hive consist in providing it with suitable openings
both above and below, by means of which the necessary
ventilation can be secured and regulated. One Hive
has a gable roof, and at intervals in the upper edge of
the side walls saw cuts or kerfs are provided which will
be sufficiently wide to afford a passage for the air. A
strip is secured between the projecting eaves and side
of the hive so as to leave a triangular space extending
from end to end of the hive, and thus providing
a passage for the air. By stopping up the ends of
this passage the ventilation is shut off. Near the
bottom of the hive is a false bottom, the side
edges of which are also provided with saw cuts
or kerfs. At short intervals and in the lower edge of
the sides of the hives other kerfs are cut so as to break
joints with the first mentioned. The frames are made
in the usual manner, except that the upper corners are
rounded and project slightly, so that they will fit into a
groove in the upper part of the hive and be suspended
there, and they can be turned slightly so as to come out
easily. There is sufficient space over them to admit the
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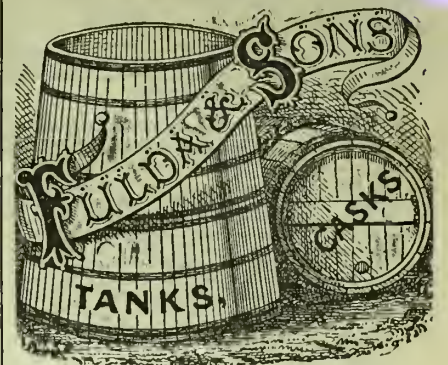
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days. The following is our price list of ordinary

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made of 2 inch sawed lumber clear of knots and sap—
a discount made if the lumber is not steamed.

1,000 to 2,000 gallons, bound with 5 hoops 1 1/2 x 1/2
and 1 hoop 1 1/2 x 3-16.

2,500 to 4,500 gallons, bound with 4 hoops 2 x 1/2 and 2
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2 hoop 2 1/2 x 3-16.

7,500 to 15,000 gallons, 6 hoops, 2 1/2 x 1/2 and 2 hoops 2 1/2
x 3-16.

15,000 to 20,000 gallons, bound with 8 hoops 3x1/2 and
3 hoops 3x3-16.

PRICE, - - From 1 1/2 to 3 cts. per Gall.

Small tanks also made to order, also tanks of any
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Relieve the Draft of the Team,

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gone into the business; and as the H & L AXLE
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As any of the inferior compounds now being forced
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is on the red cover of the package, and take no other.
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This Beater, as will be seen by refer-
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can with a cone bottom and a cone
dasher, the lower portion of the dasher
being perforated with very small holes,
as shown. Under this arrangement the
upper portion, when forced down, fills
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LIGHT FROM THE WEST.—The spirit of progress has somewhat upset our old notions on the subject of light. We used to look to the East for knowledge in the arts, sciences, religion and everything else. We were accustomed to receive all good things from the Orient and all evil things as well. Plagues and contagious diseases, as well as literature and science, followed the course of the sun, and came to us from Europe and Asia. But lately we are reversing this order of things, for here comes to us from San Francisco the SCIENTIFIC PRESS, one of the very best papers of its kind in the world—fully up in the latest discoveries and inventions, and altogether a most valuable and ably conducted journal.—*Industrial Age*, St. Louis.



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The CALIFORNIA LABOR AND EMPLOYMENT EXCHANGE, having ample opportunities to dispose of farms or business places to the many immigrants who daily arrive in California, and whose first steps are invariably directed toward this institution, has opened a Land Department in connection with its Labor and Employment office.

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637 CLAY STREET,
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"Male and Female Labor sent to all parts of the country." 17v4-2am3m

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FOR SALE,
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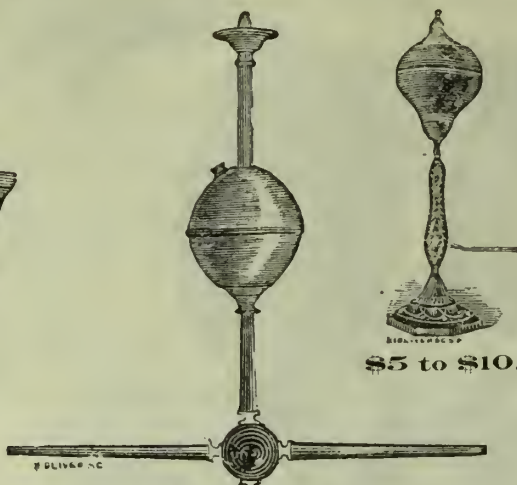
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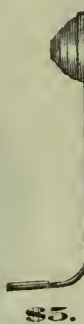
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\$10 to \$13.



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\$5.

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Is suitable for city or country; just the thing for Churches, Dwellings, Stores, Hotels, Mills, Stables, Streets or any place where a light is required. Try it and you will use no other light.

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It Can Not Be Exploded.

Each Burner generating its own gas only as fast as consumed, rendering Explosion impossible. The Burner can be Regulated to give as much or as little Light as desired.

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17v4-113p

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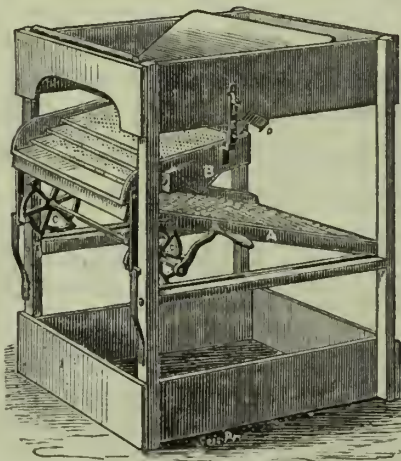
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This Plow was awarded the First Premium and Gold Medal at the great Plowing Match at the State Fair, 1872. Fifteen Gangs entered, including the Eureka, American Chief, Sweepstake, and others of notoriety. It has wrought Iron Beam, Iron Wheels, Cast Steel Moulds and Shafts. It is neat, simple, strong and durable, and warranted to run light, and lifts out of the ground easier than any other Gang known to the trade. Extras furnished and warranted to fit.

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For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all part of the State. For particulars address

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BEWARE OF IMITATIONS.

Persons in the country can be snited with the BRAZILLIAN PEBBLE SPECTACLES by forwarding one of their old glasses in a letter; or, if they have never worn glasses, they will please state the fact, and age, health, etc. Ordinary glasses to suit all sights can be procured in the same manner. 16v4-3m-awup

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Fruits when only three feet high. Very ornamental. Fruit of excellent quality.

Priced Catalogue sent free on application. Address

THOS. A. GAREY,

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Box 265.

17v4-3m



The Carpenter Bee.

The interesting and instructive engraving which we present this week, we obtain from that excellent monthly the *Journal of the Farm*, and believe it will be examined with interest; because it serves to illustrate the wonderful wisdom or instinct that attaches to one species of the insect world.

An agreeable writer in the *Schoolday Visitor* says of it: "It is called the Carpenter Bee, a solitary bee whose earnest life excites as much wonder and admiration of the student of nature as that of its honey-producing relative.

In the illustration, the naturalist has exposed the interior of the cells of this insect's home, containing the developed larva or grub, and its food. The grub in the lowest cell first comes to maturity, because the first egg is there deposited, and the partition is constructed which separates it from the chamber immediately above it, before the second egg is laid, and its chamber is filled with appropriate aliment. You see, also, the opening immediately under the lowest cell, which serves as the outlet through which the insect passes when it is ready to bathe its violet wings in the clear sunshine, and the entrance tube at the top, placed at such an angle that the rain cannot enter the perpendicular tube in which are the nursery chambers of the young.

The manner in which it makes its many-storied house, and fills its chambers with provision for its offspring is wonderful. Single-handed and untiringly she plies her horn-like jaws, digging out chip by chip till her long tube is prepared. Can you imagine what her thoughts are as she prosecutes her work, and slowly penetrates the half-decayed wood in which she intends to deposit her eggs? Is she reflecting upon the necessity of providing a safe and comfortable home for her innocent and helpless offspring? Is she thinking of the multitude of insects ever ready to devour the food her solicitude purposes to store up for her own household and that she must protect it from their depredations? I cannot answer these questions. And I know that insects are not supposed to think at all.

But still I cannot resist the evidence here afforded of the foresight and maternal care of the mother bee. In the structure of this remarkable habitation, intelligence and design are manifested. And in the size of the tube—its length—the capacity of each chamber, and the amount of food deposited for the nourishment of the little occupant, there marks a calculating power very closely resembling the mathematical operations of the mind. The food, consisting of the pollen of flowers mixed with honey, provided by the insect, makes one think of the mother who, with the greatest care, provides for her offspring the food best adapted for its nourishment. In this instance is seen the wonderful beneficence of the Creator in so instructing the mother insect that without any previous training, she makes all necessary provision for the birth, growth and full development of her progeny.

In their grub state the young spend their time in their narrow chambers shut out from

the light of day. Here they are wholly devoted to self. And, as though their supreme selfishness was known to the mother bee, she has divided her cylindrical home into chambers, so that each worm is "monarch of all it surveys," and cannot intrude upon the rights of others. It is when fully equipped for its higher life that its selfishness gives place to the disinterestedness of maternal instinct, when, forgetful of self, it consecrates all its energies to the con-

The Canada Horse Disease.

We know there is an unusual and we think quite unnecessary alarm in California in regard to an epidemic or disease among horses now very prevalent in many of the Eastern Atlantic cities. It has extended so far as to be a serious impediment to business in many places and seems to be not gradually but very rapidly working its way westward, and at last accounts

attended with any very great fatality as yet.

Diagnosis or Symptoms.

The disease is of the nature of catarrh, with fever, accompanied by slight inflammation of the throat and bronchial tubes. It is evidently the result of some atmospheric influence. Although very alarming, the complaint is not attended, if rationally treated, with any great fatality. The disease appears to take from ten to thirty days to run its course, according to the severity of the attack. It is characterized by a discharge from the nostrils, severe hacking cough, quickened circulation and labored breathing.

Impure air or exposure increases the symptoms and the lungs become affected which is the great danger from this disease.

On a calculation, it appears that when rational means of cure and treatment have been adopted, there has been a small percentage only of loss.

The disease is best treated by giving plenty of fresh air, keeping the stable clean and well ventilated, and feeding with easily digested food, with small doses of mild febrifuge medicine morning and evening. It is preferable to work mildly affected animals, rather than keep them standing in close stables, breathing impure air.

When the cough is very severe mustard applications to the windpipe are found of great benefit in allaying irritation. Stimulants have been found preferable to sedatives in the treatment, therefore bleeding and purgatives are inadvisable. Fresh air is essential.

We have it on the authority of Dr. A. Smith, Veterinary Surgeon of the Ontario Veterinary College, whose diagnosis and treatment have been entirely successful, that the disease has nearly disappeared from the city.

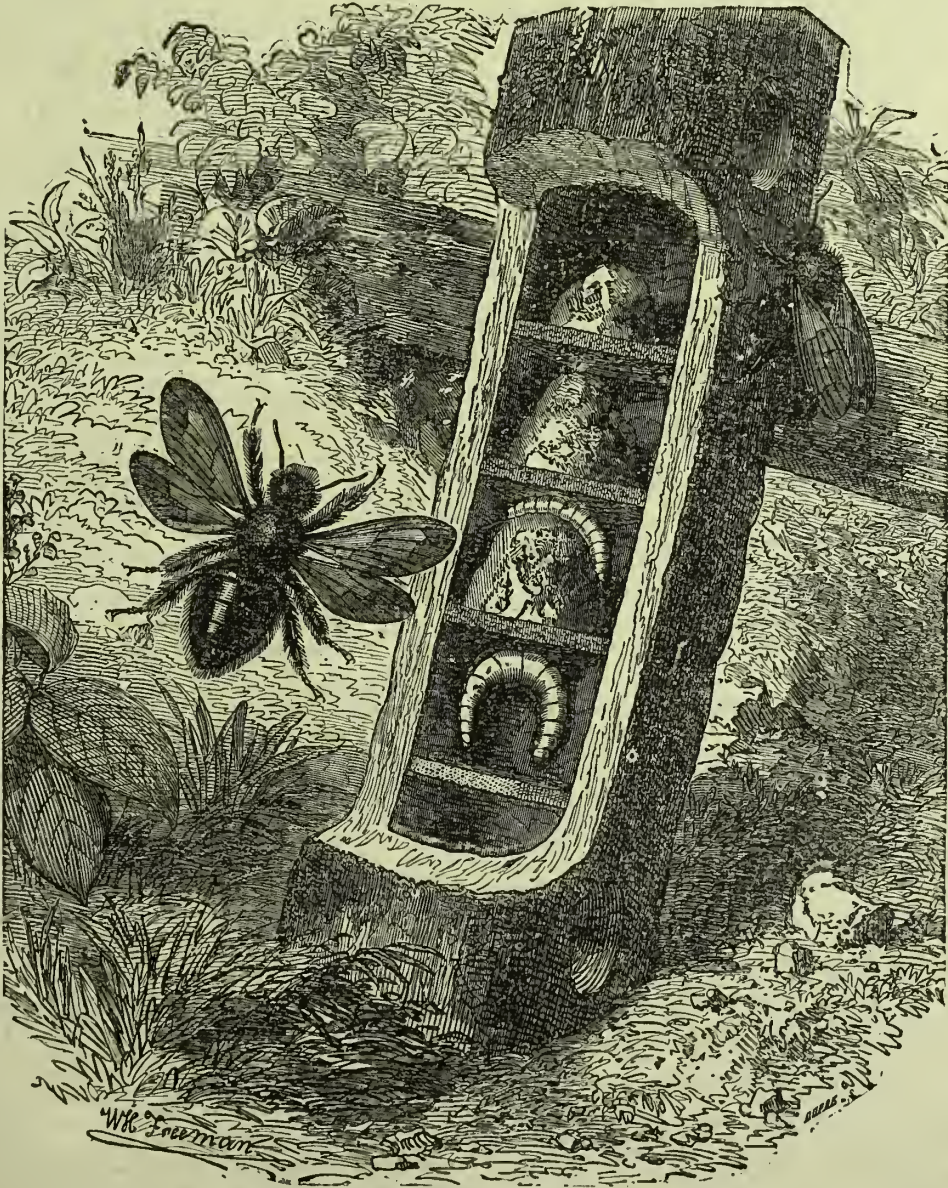
A recent report of the nature of the disease, as shown in the East, says the premonitory symptoms are dullness and watery discharge from the nose, speedily followed by a severe hacking cough. The pulse is quickened and the mouth hot; the ears and legs are extremely cold; the discharge from the nose increases and becomes a greenish yellow color, and breathing increased, and in some cases labored and severe.

Anti-cruelty Berge, of New York, suggests as a remedy for the prevailing horse disease, complete rest, warm blankets, non-exposure to drafts of air, disinfectants, total absence of bleeding and prostrating cathartics; twenty or thirty drops of tincture of iron in a gill of Jamaica rum, diluted with water, may be given every four hours in order to preserve the strength of the horse, or tincture of arnica will produce relief; a plaster bound around the throat composed of one portion of cayenne pepper, two of flax-seed, mixed with sugar, is excellent.

The Disease in Brooklyn, N. Y.

A few fatal cases have been reported, but it is not definitely settled whether they were caused by the epidemic. Medical authority states that, under the most favorable circumstances, the disease runs from seven to ten days.

A Buffalo date of Oct. 25, says: The horse disease has passed the crisis here, and is now abating. But few horses have died, and the death of those is to be attributed more to hard usage than to the disease. The canal horses have almost entirely recovered, and no boats are stopped now. The disease is however breaking out in other cities.



THE CARPENTER BEE, (XYLOCOPA).

struction of a home and the providing of food for its offspring.

ROAD SIDE TREES.

Our farmers throughout the length and breadth of our great valleys are alive to the importance of planting trees by the road sides, and are making everyday inquiry as to the kinds best adapted to the circumstances of exposure to strong winter winds and the heat and dust of summer. And it would be well for those who propose extensive setting for other purposes than shade, ornament or wind breakers, to bear in mind or inquire into the effect, that the dust of our rainless summers has upon fruit trees and the leaf of the mulberry for the feeding of silkworms.

The radish originated in China and Japan.

had reached St. Louis, St. Joseph and Omaha on the Mississippi.

We believe the disease to be an epidemic resulting from certain atmospheric conditions that can be met in no better way than adopting a course of ventilation and purification of the stables in which large number of horses are kept. This precaution can do no harm; it may do some good, though we are inclined to think that the wide plains and the mountain ranges between us and the Mississippi, with the strong wind currents and frosts that prevail at this season of the year, will present an impassable barrier beyond which it will not extend the present winter, if it ever does.

It seems to have created a good deal of alarm at the east and yet has not been

CORRESPONDENCE.

The Durhams of Oregon.

[Written for the Press.]

We think that other breeders will hardly feel hurt to have us class the herd of S. G. Reed, of Portland, as the Durhams of Oregon. This gentleman, possessing a large capital and a natural taste for fine stock, procured the services of a herdsman, who was the son of one of Scotland's most famous breeders, the originator of the celebrated Palled stock, and who was himself brought up under the tuition of the Booths and the Bates', and has had extensive experience in England, New Zealand, California and Oregon. Indeed, we have never conversed with a cattle breeder who seemed so thoroughly enthusiastic, well informed, and full of his subject as Mr. Wm. Watson.

The Booth and the Bates Blood.

We have heard of the Booths and the Bates' strains of Durham, but never knew fully what those words signified in that relation. It seems that these two families of English breeders have been engaged, the one for 80 and the other for 70 years in breeding, each a particular family of Durhams—choosing the best animals to begin with and then breeding to the best, without relation to the affinity; but never introducing any new blood. The object has been to get the type so thoroughly established that the characteristics of the parent shall be impressed upon the offspring as certainly as the stamp of the mint upon the coin.

Mr. Watson's favorite is the Booth blood, but he says each has been bred with equal care, each is held in equal esteem in England, and each brings an equally good price.

Purity of Blood the Key to Fancy Prices.

Now comes the part of the business that is harder to see the reason of. If a Booth animal has even 1-16 of Bates' blood or vice versa it is comparatively worthless, though it may be in every respect save purity of blood a better animal. There is no doubt of the Durham blood being perfect in either case.

Booth and Bates' Marks.

The Booths are fuller about the heart, have white waxen horns generally inclined downward and are copper colored about the nose with coarser muzzle and chops, and with longer, thicker and softer hair.

The Bates' horns are black at the tip, with a black shade about the muzzle and the feet, and with horns more erect. In regard to other points I did not understand that one was more inclined to a particular excellence than the other.

In Waterloo Rose and Weeping Willow, two fine heifers, we were shown the truth of the old saying, "Blood will tell." They are both nearly pure Booth blood, but both have taken their characteristics from Water Witch, a Bates ancestor 4 generations back, as though they had never a strain of any other blood in them. We suppose the Booth blood would be just as likely to lay dormant for two or three generations, and then show itself in the offspring.

The Herd.

The leader of the herd is the famous Governor General—22 mo's old, red roan, weighing 1520 lbs., calved at the place of M. A. Cochran of Compton, Canada, got by General Napier, now of Glen Flora farm Waukegan, Ills. He was bred by Wm. Lorr, of Aylesby Manor, Lincolnshire, Eng., and is a pure Booth. He is of John Booth, of Killerby's famous Mantalina tribe.

Gov. Gen. is well known through the East, having been shown at five Fairs last year, and taken every premium for which he could be entered, and he has taken everything where he has been shown in Oregon.

Honeysuckle, a red and white cow of Booth's famous Isabella and Medora tribes is a great acquisition to any herd, and all the more valuable because the strain of blood is gone at the fountain head.

By her side is the priceless calf, Lord of the Valley, 3 mo's old, red and white, got by the famous Royal Commander, bred by Thomas Booth, of Warley, England. This calf is an extraordinary animal, both in beauty and blood. Rose Sovereign, red roan, 5 years old was bought as a barren heifer, but upon bringing her here, and reducing her condition they have succeeded in getting from her the beautiful calf, Rose of Oregon, by Gov. General. Mr. Watson says it is quite common for cows that have proved barren in the old country to produce here upon being brought down in condition. Rose Sovereign is of the Hope and Hamlet tribes or the Booth strain of Durham blood—"Wheels within Wheels." Then come the descendants of Robert Colling's famous cow Princess. Pet Gwynne and Phillis Gwynne both out of Nell Gwynne. At the Earl of Aylesford's sale last year nine of this strain of blood averaged 123£. 9s. each. The Glossy Tribe is represented by Glossy Woodbine, who won the fifty guinea challenge cup at Purdon, as the best yearling heifer in Ireland, and Glossy 5th, no less glossy than the last, with her fine young roan heifer calf, Glossy 6th by Gov. General.

Hillhouse Rose is a roan yearling heifer, who was the champion heifer calf in the Eastern States last Fall. She took 1st premium as year-

ling heifer at Salem, and sweepstakes as best cow in the yard. She was from Baddon Rose by Col. King's Old Sam, the champion aged bull of America.

Rosedale is out of the pure Bates' cow Lady Thorndale, by the celebrated bull Bismarck.

Primrose IX, a descendant of Mount Hood, out of Fanny XXIX and Bell-flower, a roan yearling heifer by Gen. Napier, out of Warley Flower, were not in a condition to come to the show, but are among the best show cattle in the herd. They are both pure Booth heifers.

Purchases—Last year Mr. Reed and Mr. Watson went East together to attend the shows, visit the herds and make purchases of stock. They bought of Mr. A. Cochran the famous breeder of Compton, Canada, the whole of his last importation from Great Britain 17 in number. They bought from J. Q. Gibb, of Compton, Canada, a herd of five young Ayrshires, all of which had taken prizes in Scotland, and were as good as could be had.

Sales.—The herd, having only recently been started, the sales have not yet been many, but enough to show that Oregon men can appreciate good stock.

Dr. Tolmer paid \$1,500 for Central Pacific, a calf 10 mo's old to go to Vancouver.

R. R. Thompson, of Portland, paid \$1,000 for New Years Day. Mr. Fish bought Web-foot Prince at \$500.

The Leader of the Ayrshires is Earl of Lorne, who took the 1st prize at Salem and was second for the sweepstakes as the best bull in the yard. He is spotted and shows very fine points. The cows are as follows:

Blooming Daisy, spotted; Heather Belle, spotted; Mary Belle, red; and Heather Belle red and white. Mary Belle won the sweepstakes in Scotland. The calf Lady Mars is from Heather Belle, by Mr. Gibbs' champion bull Mars for which he has refused \$3,000.

Blooming Daisy has the s. c. c. Cowslip by Earl of Lorne, and Beauty has the r. and w. b. c. Dairyman by Earl of Lorne. These calves are 3 rare specimens of Ayrshires.

We think there is no doubt but that the Ayrshire is destined to take as high standing for milking qualities as the Durham does for beef.

Reed's Leicesters and Cotswolds are of noble blood as well as his cattle. The Leicesters are of the pure Bakewell Leicester blood from Lord Bolworth's celebrated flock in Scotland. The ancestors of these were taken to New Zealand where Mr. Watson had charge of a little flock of 55,000 sheep. This blood has been kept scrupulously pure in its travels from Scotland to New Zealand and thence to California, then to Oregon.

The Cotswolds 34 in number are direct from Messrs. Garne in Gloucestershire, England.

These varieties of sheep have generally been kept in small flocks in good pastures, and it may be for this reason that they are so noted for rapid increase. Mr. W. tells us that almost any breed of ewes will generally bear doublets if put upon very high feed about three weeks before tupping time. Mr. Reed has some very noted Berkshire pigs, and many choice varieties of fowls.

The cattle are all recorded both in England and American herd books, and for the convenience of our readers we may hope to receive from Mr. Watson their numbers and references. He has promised to furnish us with items and articles occasionally. We are counting largely upon that promise, feeling that so far at least Oregon will be well represented. We may expect to see these cattle at Sacramento in 1874.

Oregon City.

Was the first city of Oregon and men are here who used to be boys together with Grant and Sherman and Hooker and Dent when they were stationed at Vancouver. It seemed strange to see middle-aged men pointing to the ground, covered by great factories and surrounded by a hive of industry, as the battle-field where they struggled with the Indians, in the days when the Hudson's Bay Company held sway here. Such a one is Thomas Channan, a busy, thriving merchant well known in "Frisco." He has three floors of a building 30x80 filled with tools, medicines, dry goods, hardware, groceries and "whatever you please, name." His tea comes direct from Japan in nice pound packages, all printed with his name. The printed papers for next year's crop of tea have gone from San Francisco already. His trade amounts to \$150,000 to \$200,000 per year.

This city is twelve miles above Portland, has excellent facilities of communication both by rail and river, only a few rods apart, has one of the finest water powers anywhere, and is in the midst of iron mines and good agricultural territory. We shall find out more accurately in regard to its various resources, and the great lock that is being built here and report in our next.

Transplanting Orange Trees.

Eos. PRESS.—It is quite possible some of the suggestions contained in this article may have appeared heretofore but, at the risk of being accused of rehashing, we think best to offer some seasonable items for consideration by horticulturists.

Although the orange family are not conifers yet in some respects they should be treated similarly as to time of transplanting. This family forms an exception—in the handling and transplanting—in this, they appear to do better to await their starting in growth before moving, and in the puddling or stirring the water in the excavation where the tree is to be set. It is also considered that the distances

should be greater than has heretofore been used for both orange and walnut trees, say fifty feet, and that the most economical distribution is the alternate or quincunx style of arrangement—the form can be better understood by placing a row of bullets or small circular objects on the table—and then so placing another row as to have each fit closely into the spaces between. But when so large a distance is used it is supposed that some quick growing tree as the almond or peach can be grown between the more backward varieties.

F. M. S.

Oregon City—Public Works and Manufactures.

[Written for the Press.]

The Lock and Dam Swindle

As the political papers call it, is the great enterprise of the place; has been employing about 600 men since May 1st, and will last till New Years. The work is 3,600 feet long and will cost upwards of \$500,000. The estimates are various, some running as high as \$800,000. The State appropriated a subsidy of \$200,000 and the contract was first let at a rate that would have cost about \$250,000. The work was of unexpected difficulty, and after spending about \$50,000 the contractors failed, and it came into the hands of the company last May. They have secured the services of able engineers, and finished the work so far in a substantial manner that reflects credit upon the State and all concerned.

The Object of the Work

Is to lock the river steamers around the falls of the Willamette. There are steamers of light draught, and about 150 tons burthen, running on the river and at present the freight all has to be transferred to boats below at the basin, built for that purpose and owned by Mr. Ben. Holladay. The locks are designed to avoid the transfer and furnish a splendid water power to the extent of 4,000 horse power.

There are four basins besides the guard lock, each of which changes the levee 10 feet. They are made large enough to pass a boat 200 feet long, and 40 feet wide. The breakwater is made by bolting heavy timbers to the solid rock with a strong bolt every foot, and then the other timbers are both bolted and dovetailed together and the whole is filled with rock for ballast.

The Tonnage

Passing Oregon City was reported in 1871 at 4,200 tons, but when there is a good crop and cheap transit it may be expected to increase very much. A leading miller estimates the surplus wheat crop of the Willamette Valley for this year at five million bushels. From the most careful estimate we can make, founded upon the information of engineers and millers, the water power at this place is sufficient to grind the above crop in 25 days. At low water the power of the river here is from 16,000 to 20,000 horse power counting upon 40 feet full. Only a very small fraction of this is used.

Mill Sites at the Locks.

Extend for a distance of 2,000 feet varying in depth from a few feet back to 400 feet. The land has been made from the rocks of the excavation and is above extreme high water mark.

A Gate of 40,000 Pounds

Is easily opened or closed by one man pushing with his hand, so perfectly is it poised. It is hung upon rods passing over an iron bracket fastened to the top of the wall. The walls of the guard locks are 19 feet high, 10 feet wide at bottom and 5 feet at top laid up with large hewn stone in hydraulic cement. The other locks were cut most of the depth through the solid stone, in some places 50 feet deep. There is the thunder of frequent blasts to be heard and the continual puffing of the steam pumps and derricks. The officers of the Company are D. Goldsmith, President; J. M. King, Secretary; Joseph Teal, Treasurer; J. D. Smith, Superintendent and Chief Engineer; E. G. Tilton, Assistant Engineer; J. A. Lesord, Superintendent of wood and iron work; J. E. Parker, Foreman of Excavations, and George Clark and D. McCarty, Superintendents of Masonry.

The Thorough Nature of the Work

Is an established fact whatever may be thought of the work done at Salem. We find the newspapers and the people very much divided upon the subject, one part holding that its purchase by the State offers the only security against a monopoly of the carrying trade, and the other party holding that its purchase is a piece of extravagance and will impose an unendurable tax.

The Oregon Wooden Ware Co.

Was established about 1st of January, 1872, and began manufacturing in May. They make tubs, firkins, pails, wash-boards, broom-handles and mops. They propose to furnish a full assortment of wooden ware as soon as they can get ready, making it a point to do one thing at a time and that well. They have a fine set of machinery sent out by B. D. Whitney, Winchendon, Mass. With the machinery came the gentlemanly and accomplished mechanic, Mr. C. E. Clark, who has had many years experience both in the manufacture and sale of wooden ware.

Their pails are almost all of ash and impart no taste to the water. There is a plenty of the finest cedar to be had here as well, which is much

used for tubs. The ash costs them only \$4 per cord, and the cedar \$5 at the factory. Their machinery, their goods and the prices that they are able to give convince us that they will soon be able to supply Oregon with wooden ware, and have some to spare. They employ 11 hands and do all work by machinery.

The Clackamas Paper Mill

Lies on a river of the same name, two miles below Oregon City, and is owned chiefly by H. L. Pittock of the *Oregonian*. They have plenty of water, with a fall of ten feet. They employ from eight to 20 hands, and manufacture printing, manilla, wrapping and carpet papers. Nearly all the newspapers in the State are supplied with stock here. They have a very fine set of steam-drying machinery. The mill turns out \$60,000 worth of stock per year. William Lewthwaite is superintendent.

There is at Oregon City a factory which manufactures sash, doors and blinds, and all kinds of furniture. Maple, alder and ash make very good furniture, and there is very fine curly maple to be had for fine work. Alder works beautifully, takes a fine finish, is light and tough. We cannot see why a large business cannot be done here in that line, as either of these kinds of lumber can be had in large lots at \$20 to \$30 per thousand feet. Cedar for doors, sash and blinds is quite as cheap.

The woolen factory employs 100 hands. We may have occasion to speak of it more fully in the *Mercantile Director*.

A Natural Curiosity.

Just back of Oregon City, the cliffs, which may once have been the banks of the river, are nearly perpendicular. Directly east of the Odd Fellows' Hall, within a few feet of the top, may be seen a round hole, of 3¼ feet in diameter. This extends directly back into the rock for 60 feet. How it came there, wiser men may tell. From the shape of the hole we should have guessed that the rock had been deposited around the trunk of some fallen tree. But, unfortunately for the theory it is not the way that rock of such a volcanic nature as this seems to be was deposited.

Iron Works

Are situated at Oswego, three miles below Oregon City, on the left banks of the Willamette. They have extensive works, and manufacture a very superior quality of charcoal iron. The ore, charcoal and water-power are plenty there. So far, lime has come mainly from Santa Cruz, they tell me. It is hoped that it can be furnished near at home before long. It is hoped that the furnaces will soon be in blast again, and the improvements on the Swalatin River ought to do a great deal for the place.

A Lumber Mill

At Oregon City is capable of sawing 1,000 feet of lumber per hour. Logs cost \$5 per thousand feet, and lumber sells in the rough at \$12 to \$14 per thousand feet.

Two Flouring Mills

Are at work a great part of the time on orders for China. One of them has seven run of stone.

Tempering Steel.

All sorts of mixtures and methods of tempering steel have been invented, and the sales of patent rights thereto have, in many cases, brought in fortunes to the patentees. One of the most promising, profitable, and apparently excellent of these patented processes, according to the *Scientific American*, is that of German & Siegfried, owned by the Steel Refining and tempering Company, Boston, Mass. Congress has appropriated ten thousand dollars to pay for the right of its use in the Government shops. It is said to impart an extraordinary hardness and durability to the poorest qualities of steel.

The following description of the process is from Siegfried's specification, patent of July 16, 1872:

"I first heat the steel to a cherry red in a clean smith's fire, and then cover the steel with chloride of sodium (common salt), prying the fire also by throwing in salt. I work the steel in this condition and while subjected to this treatment, until it is brought into nearly its finished form. I then substitute for the salt a compound composed of the following ingredients and in about the following proportions: One part, by weight, of each of the following substances: Chloride of sodium, sulphate of copper, sal ammoniac, and sal soda, together with one-half part, by weight, of pure nitrate of potassa, the ingredients being pulverized and mixed. I alternately heat the steel and treat it by covering it with this mixture and hammering until it is thoroughly refined and brought into its finished form. I then return it to the fire and heat it slowly to a cherry red, and then plunge it into a bath composed of the following ingredients in substantially the following proportions for the required quantity; of rain water, one gallon; of alum, one ounce and a half; of sal soda, one ounce and a half; of sulphate of copper, one ounce and a half; of nitrate of potassa, one ounce; and of chloride of sodium, six ounces. These quantities and proportions are stated as being what I regard as practically the best, and it is manifest that they may be slightly changed without departing from the principle of my invention."

What he claims in his patent is the successive processes or steps of the process, with the use of the materials or their equivalents, substantially as set forth above.

FARM HINTS.

To Provide Against Droughts.

The following extract is from a report by W. W. Daniels, Professor of Agriculture in the University of Wisconsin, which we find in the *Western Farmer*: While there is no means of preventing the recurrence to these extremes of climate [wet and dry seasons], and perhaps no means of modifying their effects that will be universal in its application, there is a remedy general in its nature, which is within the reach of all farmers. It is the adoption of a better system of culture, better and deeper plowing, better cultivating and better manuring.

The stratum of soil needs to be deepened, to be more thoroughly pulverized and to be made richer. Any means that may be adopted that will accomplish these ends will be of value as a remedy against drought.

There is another means of preventing the evil effects of both droughts and floods upon all clay lands or upon those having a clay subsoil, and which at the same time increases the productiveness of the soil so as to pay well for its adoption. It is underdraining. The effect of underdraining is to pulverize the soil by natural means to nearly or quite the depth of the drains, and by this deep pulverization the soil is enabled successfully to withstand droughts so severe as to ruin crops upon similar land undrained, while the drains beneath the surface form a ready means of escape for the surplus water of wet seasons. In the adoption of a thorough system of underdraining upon all heavy soils will be found the most effectual remedy, and the one most general in its application, against such extremes as those of the past three seasons.

COMPOST HEAPS AND AMMONIA.—The experiments of Dr. Voelcker at the Royal Agricultural College at Cirencester, England, have established the fact that the escape of ammonia from large heaps of manure goes on but slightly; for the reason that during the decomposition of the manure certain organic acids are formed at the same time the ammonia is evolved, and then immediately unite with the ammonia, forming non-volatile compounds. There is an active escape of ammonia from the interior of the pile, where the heat is too great for the chemical changes above referred to; but as it approaches the exterior of the heap, where the heat is so much less, the ammonia is completely taken up by the organic acids and retained. There will be but trifling escape of ammonia when there is sufficient moisture to retain it, for water absorbs and retains many hundred times its bulk of ammonia gas at ordinary temperatures. These non-volatile compounds, from being highly soluble in water, are liable to be washed away by rain-storms giving the well known dark color to the drainings of manure heaps.

WHITE APPLE TOMATO.—In the *Rural Southland* we find a tomato mentioned as new, with this name. This is its first year of fruiting, and it is declared promising. Dr. Swazey says of it:—"The plant is a hardy, vigorous, drought-defying grower, and a prolific and continuous bearer—equaling in all these respects the common red and yellow plum tomato. The fruit is of a beautiful creamy-white color, medium in size, of a regular, slightly oblate, apple shape, with a smooth, tender skin and a flesh at once so almost melting in texture, so deliciously fruity in flavor, so devoid of that rank tomato twang that most people are not particularly partial to, so solid and so rich, that one will have to look long and wide before finding another variety that will so completely come up to the highest standard of a first-class table tomato. As a Southerner we are proud of it because it is said to be a Southern variety—and were it not we should esteem it as we do now, the best salad tomato in cultivation."

TO GRASS A BANK.—A German method is: For each square rod to be planted take half a pound of lawn grass seed and mix it intimately, and thoroughly, with six cubic feet of good dry garden earth and loam. This is placed in a tub, and liquid manure, diluted with about two-thirds of water, is added and well stirred in, so as to bring the whole to the consistency of mortar. The slope is to be cleaned and made perfectly smooth, and then well watered, after which the paste just mentioned is to be applied with a trowel, and made even and thin as possible. Should it crack by exposure to the air, it is to be again watered and smoothed up, day by day, until the grass makes its appearance, which will be in from eight to fourteen days, and the whole declivity will soon be covered with a close carpet of green.

HOW TO TELL A GOOD OX.—A good ox should have a long, lean face and bright hazel eyes, which show capability to receive instruction and disposition to obey it. Large nostrils denote the capacity of the ox to work on a hot day. Very large horns at the base denote laziness. Full breast, straight back, wide ribs—by which is meant the ribs that round out nearly as wide as the hip bones—and wide gambrel are evidences of strength. Straight knees, broad toes pointing straight forward, show an ox can travel on hard road or pavement. They should be well matched, especially in disposition and speed.

Keeping Apples in Plaster.

Mr. Lyman Cate, of Oakland county, Michigan, has been experimenting the past few years with apples, and finds those packed in plaster keep much longer than any other way he has tried. He uses flour barrels, and finds them preferable to apple barrels, as they are made tighter. He first covers the bottom of the barrel with plaster, then a layer of apples, then covers with plaster, and so on till the barrel is full; then puts the head in and drives the hoops tight. The plaster being of a cold nature, keeps the fruit at an even temperature, and being fine and dry, packs so close as to keep the apples air-tight. He had Northern Spy and Swaar almost as fresh in May as when they were picked, and found no decayed ones, and thinks they would have kept till early apples were ripe, had he not used them. Will put up several barrels for next spring and summer use; is satisfied that our best varieties, such as Steel's Red Winter, Wagner, and Seek-no farther will keep several months longer than putting them up without plaster, and will retain their flavor much better besides.

MOLASSES AS CATTLE FOOD.—Of all possible occasional additions to the ordinary feed of milk cows, M. Flocking, of Dirschauerfelde, finds that none has so marked an effect in increasing the yield of milk as common molasses. The quantity given by him to each cow was a half litre (almost exactly a wine-pint) daily, and the consequent increase in the yield of milk varied from a half litre to one litre per cow, at times when a decrease to about the same amount is ordinarily looked for, namely, in the four to eight weeks before calving. At other periods the increase was greater, *ceteris paribus*. The cost of each portion was less than a penny—the article being procured in bulk from a neighboring sugar manufactory. The mode of giving it to the cows was by mixing it with their rape-cake in water.

A TEST AS TO SOIL.—In order to prove the kind of soil best adapted to the growth of cotton, in Kern County, Mr. Stine planted cotton seed in three different locations, in the vicinity of Bakersfield—first, on a sandy loam; second, on soil strongly impregnated with alkali; and third, on a clay or "adobe" soil. That which was planted on the alkali soil, the *Courier* says was a month in advance of the rest. From the outset the plants exhibited a remarkable vigor, and continued steadily to flourish with the results above mentioned. Many of the alkali lands of the State have been considered almost worthless. This proof of their value for cotton raising will give them an importance that they never before possessed.

CALIFORNIA CHESTNUTS.—The *Call* has been shown a chestnut of the Italian variety, of California growth, of surprising dimensions. The circumference of the specimen exhibited is fully three inches. This chestnut was raised by Mr. Henry Ginina, in Sonoma City. This gentleman planted a chestnut orchard from the seeds seven years ago, which has flourished finely, and is now bearing liberally of fruit of the general size and character above described. Doubtless chestnut trees would do equally well in most other of the valley lands of the State, and their cultivation is at least worthy a trial.

METALLIC SOAP FOR CANVAS.—The following is highly recommended as a cheap and simple process for coating canvas for wagon covers, tents, awnings, etc. It renders it impermeable to moisture, without making it stiff and liable to break. Soft soap is to be dissolved in hot water, and a solution of sulphate of iron added. The sulphuric acid combines with the potash of the soap, and the oxide of iron is precipitated with the fatty acid as insoluble iron soap. This is washed and dried, mixed with linseed oil. Dissolved India-rubber added to the oil very greatly improves the paint.

THE RINDERPEST.—Prof. Law expresses the opinion that the rinderpest, under our present *laissez faire* system, bids fair at no distant date to spread over the whole North American Continent.

ANTI-DUST RAILROAD CARS.—A few weeks since, says the *Philadelphia Record*, an anti-dust experiment was made on the fast 2 o'clock express cars to Atlantic City. There was ten well-filled cars in the train, each having a canvas apron on both sides, covering the space between it and the rails. The end of these aprons lapped, thus forming a continual canvass from one end of the train to the other. On a part of the trip the speed attained was about forty miles per hour. There was not the least particle of dust in the first seven cars, but there appeared to be something like dust in the eighth, ninth and tenth cars, but not enough to show on the garments of the passengers.

ANOTHER IMMENSE BRIDGE.—It is proposed to throw an immense bridge over the Hudson river at Poughkeepsie. The bridge will be composed of five spans of five hundred feet each, and it will be one hundred and twenty feet in height. It will connect New England with the coal-fields of Pennsylvania.

WEIGHT OF WOODS.—Ebony wood weighs 83 pounds to the cubic foot; lignumvite, the same; hickory, 52 pounds; birch, 45 pounds; beech, 40; yellow pine, 38; cedar, 28; white pine, 35; and cork, 15.

MISCELLANEOUS.

Dust Explosions in Flour Mills.

Sometime in July last a singular and terrific explosion occurred in the Tradeston Flour Mills, near Glasgow, Scotland, whereby the mill was utterly demolished and the ruins set on fire. The peculiarities and philosophy of this explosion are referred to in the *Engineer* substantially as follows:

The fire was caused by an explosion which originated in the exhaust, and traveling through the various conduits of the mill, like fire damp in a mine, set fire to the woodwork. The occurrence caused some sensation at the time, not because explosions of the kind were previously altogether unknown, but because in this instance the attention of the comparatively uninformed public was attracted by the unusual gravity of the accident. A searching investigation into the circumstances which probably led to the explosion, was made by Professor Rankine and Dr. Macadam. After having examined witnesses and documents relating to the history of fires and explosions of a like nature, they reported that the primary cause of the explosion was the accidental stoppage of the feed of one of the pair of stones, which led to their becoming heated and striking fire. The fire thus generated inflamed the finely divided dust which was diffused through the air in the exhaust conduits and then passed on to the exhaust box.

This sudden ignition or flashing of the extremely inflammable dust diffused through the air would produce a very high temperature in the gaseous products of the combustion, and this would necessarily be accompanied by a great and sudden increase in pressure and bulk, constituting in fact an explosion. The first effect of the explosion was to burst the exhaust box and allow the diffusion of dust and flame throughout the mill. A second explosion followed, and the mill was reduced to ruins. No explosive or other foreign material was used in the manufacture of the flour, and the steam-boilers were found uninjured. No blame has been traced to the proprietors of the mill, or to any one in their employment.

Direct experiments were instituted by Professor Rankine and Dr. Macadam with the view to ascertaining the inflammability and explosiveness of this mixture of air and dust. They have also calculated that when the theoretical proportions best suited to produce an explosion are exactly realized, the pressure of the resulting gaseous products, if confined in a limited space, suddenly becomes equal to about eight times that of the atmosphere. It is probable that in this instance, these theoretical conditions may not have been exactly reached, but still it is certain that a very great destructive pressure was produced.

Now, the question naturally arises, what precaution should be taken to guard against such accidents in the future, or at all events to mitigate against their destructive effects. The problem does not seem a very difficult one. The danger does not lie in the grinding process proper, but in the plans for storing up the dangerous flour-dust. So long as the grinding operations are carried on in the simple manner pursued in small mills, where the stones are simply hoarded in, and where there is no exhaust, there can only be a limited amount of dust to inflame. But it is otherwise when the exhaust is employed and the fine dust is drawn up into an exhaust-box. There the flame drawn up from the stones must inevitably lead to a more serious explosion, and where many pairs of stones are connected with the same exhaust the danger is enormously increased. It is accordingly recommended that all receptacles in which the dust is collected shall be lightly constructed and placed outside the buildings, in order that any explosion which might occur in them should free itself at once and not be induced to travel back into the mill.

The word "receptacle" is understood to include exhaust-boxes, stove-rooms, smut-rooms and exhaust-fans. The report also contains a suggestion that the well-known principle of extinguishing a flame by causing it to pass a large cooling surface might be adopted, and in fact the dust should be made to pass through a number of metal tubes instead of through the exhaust-trunk. It is, however, pointed out that cold surfaces are also apt to cause a condensation upon them of moisture in the air, and consequently the tube system would perhaps be open to the disadvantage of being liable to become clogged by pasty depositions.

Naked lights should not be used in a dusty atmosphere, and all gas-jets should be protected with gauze. Finally, as the emission of highly-heated particles from the stones is rendered more probable by the entry of nails and pieces of iron with the grain, it is strongly advised that the use of magnets to collect these metallic intruders should be made universal.

It appears that these accidents are of very frequent occurrence in England, and their number has increased since the introduction of the exhaust. The fact, however, appears to be little known to the general public.

RIVET HOLES.—Mr. J. Cochrane states that a series of experiments made by him on the relative loss of strength consequent upon punching or drilling the rivet holes in plates and bars, shows no advantage gained by drilling providing the punching is done with due care.

The secret pleasure of a generous act is the great mind's great bribe.

Mechanical Skill in China.

A most remarkable evidence of the mechanical science and skill of the Chinese so far back as 1600 years ago is to be found in their suspended bridges, the invention of which is assigned to the Han dynasty. According to the concurrent testimony of all their historical and geographical writers, Sangleang, the commander of the army under Baou-tsoo, the first of the Hans, undertook and completed the formation of the roads through the mountainous province of Shense, to the west of the capital. Hitherto its lofty hills and deep valleys had rendered the communication difficult and circuitous. With a body of one hundred thousand laborers he cut passages over the mountains, throwing the removed soil into the valleys, and where this was not sufficient to raise the road to the required height he constructed bridges which rested on pillars or abutments. In another place he conceived and accomplished the daring project of suspending a bridge from one mountain to another across a deep chasm.

These bridges, which were called by the Chinese writers, very appropriately, flying bridges, and represented to be numerous at the present day, are sometimes so high that they cannot be traversed without alarm. One still existing in Shense stretches four hundred feet from mountain to mountain, over a chasm of five hundred feet. Most of these flying bridges are so wide that four horsemen can ride on them abreast, and halustrades are placed on each side to protect travelers. It is by no means improbable (as M. Panthier suggests), as the missionaries to China made known the fact more than a century ago, that the Chinese had suspended bridges, that the ideas may have been taken from thence for similar construction by European engineers.

How Trees are Killed by Lightning.

All who have examined a tree which has been destroyed by a "thunderbolt" will have noticed not only how the layers of the wood have been shattered and separated into strips, as if full of wind shakes, but also the dryness, hardness, and bitterness of the wood, as though it had been through the process of curing in a kiln. This is attributed to the instantaneous reduction of the sap—the moisture within the wood—into steam. When this moisture is abundant, as in May or early June, the amount and force of the steam not only bursts and separates the layers and fibers, but rends the trunk in pieces or throws of a portion of it, down a line of greatest power or of least resistance. And when the amount of steam thus suddenly generated is less, owing to the drier condition of the steam from continual evaporation and leaf exhalation, there may be no external trace of the lightning stroke; yet the leaves will wither in a few days, showing that the stem has been rendered incapable of conveying supplies, and the tree will either partially or entirely die. Still lighter discharges may be conducted down the moist stem, without any lesion or hurt.—*Building News*.

CAUSE OF CHANGE OF COLOR IN FISHES.—A short paper was recently read at Brighton, Eng., by M. Georges Pouchet, on the mechanism of the changes of color in fishes and crustacea. The author referred to the fact that fishes often change in color according to the color of the objects by which they are surrounded; but he explained that this does not take place when the fish is deprived of the nerves that preside over the peculiar corpuscles to which the color is due. The change does not take place in blind turbot; and in the seaing turbot, if the nerves are divided which communicate between the eye and the skin, the change does not occur. If the fifth nerve is divided the change takes place all over the body except the part to which that nerve is distributed. These experiments, M. Pouchet said, show that the change of color is dependent upon impressions received by the nervous system through the organs of vision.

TO RENDER GLUE WATERPROOF.—The liability of glued articles to come to pieces when exposed to the action of water, especially hot water, is familiar to every one. By adding to the water with which the glue is mixed when required for use a small quantity of hichromate of potash, and afterwards exposing the part to which it is applied to light, the glue is rendered insoluble, and articles fastened with it resist the action of water. The proportion of hichromate of potash to be taken must be determined by experiment, but for most purposes one-fiftieth of the amount of glue employed will be sufficient.

A BEAUTIFUL EXPERIMENT.—When fifteen to twenty grammes of granulated silver is introduced into a perfectly dry tube of hard white glass, with from thirty to forty grammes of bisulphide of carbon, and then hermetically sealed, on warming gently and then shaking in the dark, sparks are observed in the liquid, which by continued shaking may be rendered quite luminous. Pouring water on the tube causes the luminosity to disappear, but on shaking it becomes visible. This is a beautiful experiment. Iron and aluminum produce similar effects, while platinum, copper, and zinc do not.

FARMERS IN COUNCIL.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

The adjourned meeting of this Club was held at the Chemical Lecture Room of the University, on Monday evening, Oct. 14th.

Professor Carr called the meeting to order. The minutes of the previous meeting being read and adopted, Mr. Pryal under the head of new business moved and Mr. Bagge seconded that a committee be appointed to take charge of the matter of raising subscriptions for

Drinking Fount.

The fount would not cost more than \$130, and they could raise it by subscription among themselves.

Mr. Dewey—"The one in Sacramento cost \$300."

Mr. Pryal—"Neither the pipe nor the water will be any cost, as Mr. Chabot will supply them. We can have one of those patent stone fountains with a couple of cups handy, so that the San Francisco people when they come over here, may not be obliged to go into the bar-rooms."

The motion to appoint a committee was carried, and Prof. Carr subsequently appointed Messrs. Pryal, Bagge and Dwinelle.

Nut Tree Culture.

The subject for discussion during the evening, that of nut tree culture, was then entered upon.

Mr. Pryal referring to the great interest taken in this matter for the last three or four years, said that there were some English walnuts planted close to his place two or three years ago, which were very fine and which bore abundantly. They grew splendidly around the bay. At Mr. Peralta's place, they were 35 to 40 feet high, but he was not certain whether they were English or Spanish walnuts. They had been bearing now for three years. A gentleman had come to Oakland to purchase the fruit on the tree.

In answer to questions by Dr. Carr as to the yield and the

Method of Cultivation.

Mr. Pryal answered; that he did not know the yield, but he planted them in the fall in sand or a sandy loam, most generally about two inches deep and four apart in the row in seed beds. They were taken up next fall and planted in a nursery row four or five feet apart, and eighteen inches in the row.

Dr. Carr—"Do you plant after the rain?" Mr. Pryal—"They are left a year in the nursery. They are two years from the seed bed before being planted. They are then about two and a half feet high. The first year or two they do not thrive, but as they grow older they gain rapidly. The wood is very valuable. I have seen Spanish chestnuts in Greenwich Park, London, forty and fifty feet high. The fruit commands a high price."

Mr. Pryal also stated in answer to Dr. Carr that they would take

Twelve to Fourteen Years in Growing. Although some said twenty-five, but he believed that they would not take more than twelve or fourteen years here.

Mr. Bagge had seen some four years old standing only three feet high.

Mr. Pryal said that the chestnuts he referred to were very large and prolific. They grew on rolling ground like that of our foothills. He had seen them twenty-two years ago.

In answer to Mr. Dewey he said that a light covering of straw was a good way to protect them from the weather. But after they had grown somewhat there was no damage to be apprehended from this source. It was necessary to plant them soon after gathering, and to protect them from the sun so as that they should not become too dry. Last year he had bought some in San Francisco and planted them in very fine soil but very few came up.

Mr. Dwinelle thought that

A Hundred Years Hence,

Nut-growing would be one of the great sources of industrial revenue to the State. He had noticed those spoken of by Mr. Pryal and a number of others, particularly those of S. A. Allen. At his father's place, at Berkeley, they had two of the Broad Leaved English Prolific but they were not bearing yet. They had two Spanish chestnuts one of which was six feet high and only three or four years old, and they had quite a number of small ones about two years old. He thought there would be

No Trouble in Raising

Chestnuts or walnuts either. Walnuts were a very important article of commerce, and there ought to be more attention paid to the cultivation of the walnut tree than there was. It grows gracefully, furnishes a very valuable crop, and leaves through the summer when there was need of it for a shade tree. In Europe they use the woods for almost everything, use the fruit on the table, and express it for oils. It has been introduced into Europe and England from Persia many centuries ago, and grows extensively in all the countries bordering on the Mediterranean. The chestnut has much handsomer foliage than the walnut and makes as good an ornamental and shade tree, keeps its leaves much longer, is very durable and light. Most of us from the Eastern States are used to the forests of chestnuts there and know what the wood is good for. The Spanish chestnut grows as large as the New England one in three or four years. I know of

Nothing Better for the People to Grow

Than nut-trees. I believe that not many farmers have a proper appreciation of the value of nut-tree cultivation. They ought to plant a row around their lot, and this would not only enhance its value, but would tend to make the country look more beautiful. Nothing gives me greater pleasure than a little lot thus planted, which I pass every day near Temescal as I come in from Berkeley.

Mrs. Carr said that her attention had been attracted by the Blue Gum trees that she had seen cultivated about a field in the same neighborhood. She had always thought a good deal of

The Blue Gum and the Butternut.

At Mr. Charles Howard's place at San Mateo, a good many butternuts had been started, but there seemed to be some fears of their being blighted. Both the blue-gum and the butternut were very desirable timber trees. One of the most desirable trees for this country was the black walnut. Mr. ——— has more than any one else, save General Bidwell.

Dr. Gibbons said that he had seen forty or fifty acres covered with the young shoots of the California Chesnut,

Which he had seen grow on the hills near Monterey, sixty feet high, and twelve in diameter. The upper surface of the leaves was of a silvery green, and the lower of a silvery white. Every burr contains four or five small nuts, like those of the hazel. The squirrels and small birds, which are very fond of them, monopolize the crop before it is ripe, and he had never found a ripe nut in a burr yet. He felt an interest in the manner of sprouting these nuts. Mr. Pryal has told you that they should not be allowed to dry after dropping from the tree. See what nature does in the oak, where the acorns germinate in immense numbers in four or five weeks after dropping from the tree, being hidden under the fallen leaves. Last year, when the rains continued long, there was scarcely an oak tree round the country that had not its nursery of young trees around it. A gentleman drew my attention to this matter last year, who said that nurserymen do not understand it. He planted them six inches in the ground and got nothing. Water must get near the nut to accomplish the process of oxidation, without which it will not open, and cannot germinate. It

Must Not Be Buried too Deep.

For then the water may get at it, or if it does it will rot. Let us place them in the ground with two or three inches of soil, keep them wet all the time, and we have all the conditions of germination. If we gave more attention to the experimental points of germination we would learn more than we know now.

Dr. Carr expressed a wish to hear from Mr. Montandon, who said that he did not know much about the cultivation of nut-trees in this country. He, however, would not like to see them planted round gentlemen's places. But trees were grown most successfully on the hills. Mr. Pryal had talked about planting them in the fall, but then you have a continual war against the rats and mice. Nurserymen in Europe plant in the spring, which is the proper time. If planted then they will germinate in six weeks; if planted in the fall they will not germinate for six months. In planting, nut-trees ought to be isolated.

Mr. Pryal had planted them in the spring and fall. In the fall they are a failure. Several years ago I had two thousand, and no one would buy them, but now they are a very valuable tree.

Mr. Dwinelle thought

The Best Method

Was to gather them in moderately-sized bags and place them in the shade, where they would not be exposed to the heat of the sun till towards spring. They would gather moisture enough from the air, as the air around the Bay was always moist. They should then be buried an inch or an inch and a half in nursery beds, rows, and they will then begin to grow. If they are packed in adobe soil, especially if it is wet, every one would be killed.

Mr. Hyatt stated that in the East they are laid on the ground during the winter and exposed to the frosts. This was done on the Illinois prairies with successful results. Here we would be obliged to use ice. The finest nut-trees he had seen were at Mr. Wolfskill's, Solano Co., where they were planted on the roadside and round the orchard. They were fifteen years old, bore very well, and were as large as English oaks around the body. He thought they were English walnuts. The almonds and the olives there do remarkably well. The Wolfskills were first located in Los Angeles several years before this country was annexed to the United States. He thought freezing was the best method of preparing nuts for germination, as burying them in the ground they would be liable to rot, and if they had no moisture they would not come to anything. He was a good deal interested in the cultivation of the cocoanut, which he had tried in China, but for some reason or other, without success. He had also tried it in California without success. But I think that this climate is adapted to it. One of the Messrs. Collins, of Santa Barbara, said they cultivate nut-trees; they get their seed from Los Angeles, plant them in the fall in prepared beds, and in two years they put them out in orchards. One gentleman at San Buenaventura has an orchard of two acres, which this year have averaged 20 to 30 lbs. per tree. They are sold at 25c. per lb. In Los Angeles the finest walnuts are called the Wolfskill. Some orchards have brought \$100 for

a single tree. Walnuts pay better than almonds, they say; but walnuts take ten years to bear where almonds take only five.

Mrs. Carr thought that the cultivation of dwarf trees would be very desirable.

Mr. Bagge spoke of

The Cultivation of Filberts.

He had planted some years ago which began to bear eight years after planting. They grow more like a bush than a tree. Some had been planted in Oakland and might yet be seen near the corner of Fourth and Adeline streets. He noticed the sides exposed to the wind did not bear.

Mr. Pryal thought that twenty-five years hence California would

Supply the World With Nuts.

They should be planted in sheltered places and on the sides of hills.

Mr. Dwinelle said his father had imported filberts but for some reason or other they had failed. In the county of Kent, in England, they are grown in large quantities and sometimes yield as much as 3,000 pounds per acre. A gentleman had some difficulty with them and he had planted wild hazel among them, the pollen from which had a better fertilizing effect than that borne from the filberts themselves.

Mr. Bagge thought that where the hazel grew was also the best place for the filbert.

Mr. Dwinelle spoke of the ravages of weevil among the filberts. Sometimes they ruin whole orchards. He had observed on one occasion on coming from the geysers several trees with little wind holes in them that he felt sure were traceable to this cause.

Mr. Dewey wanted to know something about the sale of green nuts; perhaps Mr. Pryal or Mr. Bagge could tell him.

Mr. Dwinelle thought the almond was the best. It should be taken when hardly ripe, when it is easy to remove the brown skin envelop from the kernel. It is then much sweeter. They make walnut catsup of green walnuts. There are a great many varieties of the latter, some almost twice as large as the others. He thought that it was almost useless to take buds from the upper part of the shoots. They must be taken then from the best new buds and then they are almost always sure of succeeding.

Mr. Dwinelle said that they had two English dwarf prolific, and that they did not bear nearly as well as they might be expected to do. He did not know what stuff was used for grafting. They had to graft Spanish and Italian chestnuts on various kinds of walnuts, but they seemed to do almost as well without.

Mrs. Carr said that what Mr. Hyatt had said about

Cocoanuts

Reminded her that she knew a gentleman at Santa Clara who found no difficulty in sprouting them by placing them on soft mud. There were some from eighteen inches to two feet, four or five years old. She has tried the same experiment but as she could not conveniently use artificial heat, had not succeeded. They required artificial heat, the same temperature as the banana.

Mr. Hyatt said he had tried that way but had not succeeded. He supposed that it was the want of experience in China that caused the failure, as the climate was similar to that of Java.

Mrs. Carr suggested the trial of tulo lands for their cultivation as being warm lands.

Mr. Hyatt—I know they grow near salt water. In Java they germinate while lying on stone seats, paved walks, etc.

Dr. Gibbons spoke of the *Corylaeus Roskata*, and how the pollen falls on the female flowers in the middle of Nov. The danger was then from the squirrels and flying foxes. The *Pinus Tuberculata* might do as a sheltering tree. It stood the wind on rocks which were perfectly bare.

President Carr gave a very interesting account of his visit to the Santa Cruz Fair and of the Napa and Solano Fair at Vallejo. At the Santa Cruz Fair there was in particular a splendid display of grapes. He had visited the ranch of Mr. Jervis who had the finest grapes he had seen in the State. President Carr spoke at some length on the necessity of united action by the various clubs in matters of common interest.

A Horticultural Library.

After some discussion and after a suggestion by Mr. Pryal as to the holding of a fair next season for the purchase of books for a Horticultural Library, a motion was made and carried that the Librarian be instructed to communicate with our representatives in Congress in order to obtain copies of all the reports of the Department of Agriculture.

After some discussion as to the night on which meetings should be held, a vote was taken, when it was decided by a large majority that the Club would continue to hold its meetings on Friday, as heretofore.

Adjourned to Friday, the 25th inst.

THE VACAVILLE HORTICULTURAL AND AGRICULTURAL ASSOCIATION—Met at Vacaville, Oct. 26th, it being a regular meeting; there being no room prepared for the association in which to hold forth, the members of the association gathered together in an old passenger car of the V. R. R. Co., and was called to order by J. K. Miller, one of the Vice Presidents, and without transacting any business, the meeting adjourned to meet at Oak Dale schoolhouse, on Saturday, the 2d day of November.

J. H.

Vacaville, Oct. 28th, 1872.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

President Casey presiding, Saturday, Oct. 26.

The question adopted for discussion at the next meeting is, Resolved: That all questions selected by this club for discussion shall have a direct and special bearing on agricultural and horticultural interests.

Rust in Grain.

Prof. J. O. Hawkins addressed the club on the subject of rust. He said he had been led to investigate the subject by hearing the remark made, "That whoever would find a preventive against rust would benefit the agricultural interests more than any invention of machinery." He considers rust a chemical action or change. Blue stone prevents smut and why not something prevent rust. He would like to have some of our farmers try

Quick Lime.

Sow it on the grain about the time it covers the ground, and again when about to blossom. He has a theory of his own and perhaps time will do good. A disease is not dangerous so long as it remains on the outside, but if it strikes in to the vitals it is apt to prove fatal. So with rust. So long as it remains on the outside there is no danger of the crop, but if the rust reaches the inside of the straw the crop will prove a failure. He had examined many fields and had invariably noticed that the grain made a crop on odds how badly it was rusted on the outside, even if the head was covered with rust, so long as the rust did not strike in.

Report of Committee on Taxation.

The report, as published in the PACIFIC RURAL PRESS of to-day was taken up and discussed.

Mr. Settle don't want a test case unless the other clubs assist us in conducting it.

Mr. O. Cottle thinks we can't raise the necessary funds to test the legality of assessing growing crops.

Mr. Hobson is of the same opinion, and considers all we can do is to keep ourselves informed and apply to the next Legislature for relief.

Mr. Cottle offered as a substitute that our Secretary correspond with the State Board of Equalization on the subject and see if the desired result could not be obtained, for another year at least, it being undoubtedly the desire of the great majority of voters that growing crops shall not be taxed.

Mr. Holloway thinks we had better not attack the State Board alone, but get help.

Mr. Cottle did not propose to attack the State Board, but perhaps all that will be needed is to present the case just as it is, and show them that the people desired the order to tax growing crops rescinded.

Mr. Holloway thinks the State Board unapproachable by a few, but if many act it will give power to the movement.

Mr. Kennedy thought the better course would be to correspond with the other clubs, on the propriety of having the Board of Managers of the California Farmers' Union consider the matter, and act upon it if they find it advisable.

Mr. Ware strongly seconded the idea of the last speaker, and urged that the matter be referred to the managers of the Farmers' Union.

Mr. Holloway thinks it a shame to have all this quibbling; that we ought to go ahead and act like men.

Mr. Cottle was willing that the matter be referred to the Farmers' Union but did object to doing anything that would involve us financially. Money was too hard to get. We had tried that before. He did not believe in going out begging from outsiders.

Mr. Herring did not consider it would be begging to ask farmers for money to test the legality of this tax on growing crops.

Money.

Mr. Hobson don't see how we are to raise the money to test the law.

Mr. Cadwell looks at it in the same way, and considers that all we better do at present is consult with other Clubs on the subject. Holloway, Jr., thinks we can do something right away and should do it.

Mr. Cadwell is opposed to beginning a thing without we make provisions for carrying it through. Mr. Cottle thinks we propose everything, but without we go about it in a different manner will accomplish nothing.

Holloway don't believe in all this talk, but wants to act—we never had needed money yet but it had been forth coming.

Mr. Cottle said, yes, and a few of us knew where it came from. Mr. Ware thought there appeared to be a determination on the part of some of us to entirely ignore the State Union, he did not know why it was; one member had accused him of going contrary to his instructions. If he had been instructed by the Club he was not aware of it, but even if he had acted contrary to his instructions, there were no grounds for believing that the other delegates had been instructed, and it was treating the other Clubs with contempt to entirely ignore their State organization, for considering just such questions as this. Perhaps we can test the matter ourselves, but it certainly can be better done by a union of the Clubs.

Mr. Holloway did not know officially of any such Organization as a State Farmer's Union, but was willing to receive help even from that

source. Mr. Cottle thinks we better wait then till we know that we have a head in the shape of a State Organization. Mr. Herring thought those who oppose the report ought to have a head put on them.

Several amendments and substitutes were offered and lost. Mr. Haskell moved to strike out the last half of the report, which was carried. On the vote being taken the report was rejected and the Committee discharged.

The President called Vice-President Haskell to the Chair, and said he would now resign his office. Then he and Mr. J. F. Holloway left the hall. Secretary Herring (with an oath) said he was disgusted with the whole affair, and did not know as he would have anything more to do with the Club.

H. L. Holloway did not see how it was that part of the very men, who had signed that report, had voted against it.

Mr. Haskell said that we had not all expressed ourselves as opposed to the tax, but had only stated our honest differences of opinion as to the course to be pursued, and if we could not consult together in a friendly manner, there was something wrong.

He was a little afraid that on the part of two or three there was a slight disposition manifested to rule or ruin, for which he was sorry. He was satisfied that every one who had opposed the report had done so from pure motives. Mr. Ware said he was one of the Committee, who had signed the report and then voted against it, because he found that it was not advisable to adopt it; among other things, he had opposed it because he saw the design was to ignore the managers of the State Farmer's Union. He had supposed the report was to go to that Organization.

Several other members explained why they had opposed the report, the general reason was that they thought something better could be done. Their only desire was to do the best that could be done for the interests of the Club. Mr. Hobson was sorry that any had left feeling aggrieved. It is too bad that we can't like men express our honest differences of opinion, without some feeling offended because they can't have it all their own way. He had seen the like of this in other Societies, but hoped that on proper reflection everything would proceed harmoniously.

The Chairman was glad to hear so much good feeling expressed, and hoped that everything would proceed satisfactorily.

Adjourned to meet as usual.

Napa County Farmers' Club.

Club met Saturday, Oct. 19th, pursuant to adjournment. President Fisher in the chair.

The President requested the Secretary to read from the *California Agriculturist* a part of Mr. W. H. Rector's speech concerning the grain monopoly.

Mr. Ralph Ellis being invited to address the Club, said: It is a fact that the farmers of this State have suffered at the hands of speculators. There are grain rings, and sack rings, and rings of every kind, and they all bleed the farmer. Capital is concentrated in the hands of these men in San Francisco, and so long as this is the case they are able to control the market to some extent, and they will do it. The only possible remedy is to concentrate capital in the hands of the farmers. This is the object, he understood, of these organizations. When their plan is perfected, then the farmers through their own agents, can buy wheat, build warehouses, charter ships, and market their own produce to their own advantage. Though he is a middleman himself he is glad to see the farmers moving, and would heartily coöperate with them. Their interests and his are identical; for when they do well, he does well. He had no matured plan to suggest, but thought they were doing well in the organization of Clubs throughout the State, and the formation of a central body. They are getting their intelligence and wealth into position to do something for themselves. The wealth of the State is really in the hands of the farmers; it only needs to be concentrated and made available. He is not a practical farmer, but as a wheat man, educated to the business from his boyhood, his opportunities for observation had been quite extensive. He knows from an experience of several years in the valley that our wheat is deteriorating in quality, and the average yield is declining. The principal reason was the lack of a system of rotation of crops. He has now in store wheat of the eighteenth consecutive crop. This is simply suicidal. There must be a change. Nonsense to complain of worn-out land. In the Genesee Valley, in the State of New York, the soil has been cultivated for one hundred years, and still raises the best wheat that goes to the New York market; but it isn't put in wheat every year.

Mr. Gridley thought that the paper read was erroneous in some particulars. He had shipped wheat to Liverpool on his own account, and had obtained an advance of \$1.45 per cental,

when it was quoted in San Francisco at \$1.65. He felt confident that if a shipment were made by a club, that would be responsible for any loss by a decline in the prices, the full quoted price at time of shipment might be had in advance. One great difficulty with the farmers is that they live too fast—they spend their crops before they get them, and hence are always in a pinch for money and liable to be caught out.

The President asked Mr. Ellis for his opinion as to the shipment of grain in bulk. Mr. Ellis replied: It is a fact that California wheat is dryer and absorbs more moisture than any other in the world; hence, shipped in bulk, and exposed to a long sea voyage, it becomes so impregnated with the salt moisture, and the fetid scents about the vessel that it does not make good flour. This is the judgment of good millers with whom he had conversed. Aside from these reasons he knew of none why grain might not as well be carried in bulk. Of course our ships would have to be remodeled, and adapted to the use, but that is easily done. The matter should be thoroughly tested.

Mr. Gridley did not think the reason given sufficient. At least the experiment was worth making, for if it be demonstrated that sacks may be dispensed with, millions of dollars will be saved annually to the people of this State.

[CORRECTION.—In quoting Mr. Gridley's remarks last week we made him say, "If we have a full crop in California next year and no better prices in Europe, and no better facilities for shipping, we must take 75 cents per cental for our grain." His exact language we cannot now recall, but the idea intended to be conveyed was that other things being the same, in case of a probable decline in Europe (for prices there are now above the average), we must expect less for our grain than we are now getting.—ED. REGISTER.]

The President suggested that the Club hear as to the best kinds of wheat to raise. As there were present some gentlemen of large experience, he would like to hear from them. It is said that some kinds of wheat have been introduced that stand rust. He would like to hear from those who have tried them.

Mr. Duhig said he tried "Siberian," "Chili," "Australian" and "Club." The "Club" he did not like; and had better success with the "Australian" than the "Chili." The "Siberian" had come from the Salinas Valley, and when rust had taken everything in that valley, it was the only wheat that was not affected. Since he had been trying it in this valley we had no rust, so that he could not tell how it would do. He thought some qualities of soil were more subject to rust than others. For instance grain rusted on adobe when it did on no other. He learned that Starr Bros., of Vallejo, have some "Genesee" wheat to distribute for trial. But it is a fall wheat, and the fact that it comes a month later than our ordinary wheat is, in his opinion, fatal to it.

Mr. Ellis has in his warehouse some "Excelsior" wheat, a new variety in this section. He did not know how it would stand rust; but it is a beautiful grain.

Mr. Fisher remarked that he thought the proper preparation of soil had something to do with the quality of wheat. Did not think deep plowing was necessary—indeed it was impracticable in most of our California soil. He approved of subsoiling.

Mr. Robison thought that shallow plowed land stood drouth better. From three to five inches is deep enough; as then the roots of the grain would strike into the solid moist ground below, and not be dependent on the surface moisture. He remarked that he did not think fall wheat a success in this country. The difficulty with "Genesee" is that it comes in a month too late.

Mr. Mansfield thought that kind of land, e. g., heavy, clammy—required deep plowing, but it is not necessary on light soils. Summer fallowing should be deep.

Mr. McClure said that in the East the deep plowing theory held good, but not here. On land of his that had only been lightly cultivated for three years, vegetation grows as rank as if it had been plowed twenty inches. He had not plowed his vineyard for three years and never had such a yield as this season. His experience agreed with Mr. Mansfield's that heavy soils were better plowed deep.

Mr. Dewese also favored shallow plowing. He had plowed only three or four inches while his neighbor had plowed the same land to the beam; he raised 14 bushels to the acre, while his neighbor had only 7.

Mr. Bramlette mentioned an instance in which he and a neighbor had plowed in the same field, one shallow, the other deep. The result was in favor of the shallow plowing. Another instance on the San Joaquin, where his neighbor's land, plowed deep, dried out and he had no crop, while he, B., obtained a fair yield. It is a good idea to stir the soil thoroughly every few years.

Mr. Thompson had farmed on the San Joaquin and in this valley. Over three, four or five inches is a good rule; here land might be plowed deeper. Had never compared results of deep and shallow plowing, very accurately.

Mr. Fisher said it had been his experience that shallow plowing stood drouth better than deep. He thought thorough pulverization better than deep plowing.

It was announced that the "Labor Question" would be discussed next Saturday, (26th), and a general invitation is extended to all who feel interested in the subject.—Napa Register.

Santa Cruz Farmers' Club.

The Club met on Saturday afternoon, Oct. 19th, President Mattison in the chair.

The Executive Committee made the following report: The second Annual Fair, under the auspices of the Farmers' Club, opened at the Skating Rink, on Thursday evening, October 12th. The Fair was under the charge of the following committees:

The Farmers' Club Executive Committee: B. Cahoon, chairman; R. H. Swain, J. S. Mattison, D. M. Locke, Martin Kinsley, John Morgan, F. Adams, John Wood and Roger Conant.

Ladies' Executive Committee on arrangement of articles:

Santa Cruz.

Mrs. E. H. Heacock, Mrs. F. H. Fullman, Mrs. E. Bernheim, Mrs. A. H. Crown, Mrs. J. M. Cutler, Mrs. H. Poland, Mrs. A. P. Jordan, Mrs. Gilbert, Mrs. West, Mrs. Lemon, Mrs. D. M. Locke, Mrs. F. M. Bailey, Mrs. Blackburn, Mrs. J. Boston, Miss Lizzie Bennett, Miss Emily J. Johnson, Miss Mary Wood, Miss Belle Eggert and Miss Ida Lemon.

Sequel.

Mrs. Edwin Cahoon, Mrs. H. H. Hobbs, Mrs. Benjamin F. Porter, Mrs. Uriah W. Thompson. Watsonville.

Mrs. John Porter. The interior was admirably arranged for the reception of the articles. On either side of the room tables were arranged with wide walks between them, so that the people could walk without crowding or disarranging the tables. Down the centre of the hall were two long tables, which were principally devoted to works of art. Between the two centre tables was a fine monument beautifully decorated with evergreens and flowers. From the ceiling and directly over it was a hanging basket, made of green leaves and flowers, adding much to the effect. The credit of building and decorating the monument, belongs to Mr. B. Cahoon and his family, and they deserve a great deal of credit for their taste in its complete arrangement. The exhibition of fancy articles was very large, and added greatly to the attraction of the Fair. The ladies deserve great credit for the skill and taste exhibited in this department. The fruit and vegetable department was very creditable, although not by any means equal to last year. The department of fine arts contained many choice paintings and engravings. The large number of quilts on exhibition was a good indication that the people of Santa Cruz never sleep cold. There was a large number of rugs, showing a great deal of taste and skill in their design.

The exhibition of grapes was the finest ever exhibited at any Fair in this State.

On Friday evening, Prof. Wm. B. Ewer, of the PACIFIC RURAL PRESS, delivered an excellent address. On Saturday afternoon, Prof. Bolander, State Superintendent of Public Instruction, delivered an interesting address on Education, and on Saturday evening, Prof. E. S. Carr delivered the annual address. It was full of excellent thoughts, and contained many practical suggestions well worthy the attention of all who had the pleasure of listening to it.

The Rink was crowded daily, the entire three days of the Fair, and the deep interest manifested in its success, is greatly to the credit of the people of Santa Cruz.

Financially the Fair was a success. We are unable at present to give the exact amount, but it is sufficient to say that the Club will realize a handsome sum, after all expenses are paid.

The Committee cannot but express regret that any articles placed on exhibition should have been stolen from the tables. On all such occasions, accidents of this kind must necessarily happen. In future, steps will be taken to prevent those sleight of hand from following their trade to advantage, and at the expense of the Exhibition and the Club.

In closing the report the Committee cannot but express its regret at the little interest taken in this Fair by our mechanics and hardware merchants. Not a single implement of agriculture was placed on exhibition, which does not speak well for our county. The display of fruit, with the exception of the grape department, and of vegetables and grain, was not what it should have been, and the committee trust that the like will not occur at our future fairs.

The great success which attended our efforts was owing, in a great measure to the deep interest, which the ladies of the county took in the Fair. The thanks of the Club are due to the ladies, especially to those who composed the Committee on general arrangements.

There may be some mistakes in the report. It would be surprising if they did not occur. If so, they will be corrected.

On motion the report was received and ordered placed on file.

C. N. West was proposed and elected a member of the Club.

On motion it was resolved that the thanks of this Club be tendered to Prof. E. S. Carr, Wm. B. Ewer and H. N. Bolander for their able addresses delivered during the Fair, also to all ladies and gentlemen who in any way contributed to the success of the Fair. Also special thanks to the members of the Ladies' Executive Committee on Arrangements, for the great assistance rendered by them in the arrangements of articles placed on exhibition during the Fair.

Mr. Humphrey offered the following amendment to the Constitution:

After the word "thereafter," insert the following: "Should any member fail to pay the above annual dues, at the expiration of the year, he shall be deprived of all privileges of membership until the same be paid."

The Club then adjourned.

ROGER CONANT, Secretary.

Selection of Seed.

This is a matter that involves several important considerations, among them are variety, perfect development, full maturity, health of germ and freedom from all other seeds than the kind desired. The question of variety can only be determined by a careful investigation into the character of the climate and the nature of the soil; and these investigations must be experimental, not merely speculative.

Thus of different varieties of wheat there is a great diversity of opinion even in the same neighborhood, when there is little or no difference in the quality of the soil and none in the character of the climate. The diversity probably depends more on the style of preparation and mode of cultivating the soil than any other circumstance, and therefore the opinion of any one man as to the merit of his favorite variety, is not always legitimate evidence of the propriety of its general use.

In cases of this sort there is no better way than for each cultivator to test the matter for himself by accurate experiment which shall determine the adaptedness of the several varieties to the length of the growing season, early and late sowing, and the dryness of winter and spring.

Most farmers are of opinion that an occasional change of variety is productive of vigor and perfection of growth, as though their land became weary of growing the same old sort for years in succession. We indorse the opinion as applied to our system or lack of system in cultivation, though not that part which endows the soil with the caprices of the human heart. And yet the "change-of-seed" theory has long since been exploded in England and France, where reliance is placed solely on adaptability of variety and proper cultivation.

Bouquet in Water.

In Snow & Roos' art store, S. F., our attention was recently called to the following device by which beautiful flowers can be kept in their fullest perfection of bloom for many days, for the adornment of the parlor, or their cheering influence by the bedside of the sick, and yet free from the deleterious effects attributed to their exhalations in close apartments.

Procure a clean, white, glass jar, with a large opening, and a bouquet of flowers that will just easily pass into it without disarrangement. Fill a bucket or other vessel which is large enough to contain the jar when turned on its side, with clear, pure water. Place the bouquet in the jar with its stem towards the opening. Carefully lay the jar in and entirely under the water, and allow it to fill, permitting all the air bubbles to escape.

While yet under water, apply to the opening of the jar a dish or common plate, that will fit perfectly to it or nearly so, and invert the whole or bring the dish to the bottom, still under the water. Now on lifting it out, the water will be retained in the jar, by simple atmospheric pressure and the bouquet completely immersed, will keep perfectly for three or four days and very finely for six days or more, depending on the kind of flowers used.

After immersion for a time, globules of air or gas attach themselves to the leaves and flowers, like beads of silver, and presenting a beautiful appearance.

DRY HOP YEAST.—Those who have made a trial of the National Yeast Co.'s Dry Hop Yeast, pronounce it an excellent preparation wholesome and nutritious, as well as reliable and uniform in its action. Further in regard to it we refer to an advertisement in another column.

RAILROADS.—It is estimated that the total capital invested in railroads in the United States is \$3,000,000,000, which exceeds that in British railroads, which cost £510,000,000, but with this additional important consideration, that the investment of our money gave us at the close of 1871 no less than 62,000 miles, while the former only gave to Great Britain 14,700 miles.

Oregon Agriculture.

[Written for the Press.]

In the good old times when apples brought 20 cents per pound and sold at the mines for a dollar each

Farming about Oregon City

Was a source of princely revenue. We see the vestiges of that day in houses that were large and fine, built when lumber came from California at \$75 per M., and carpenters wages were \$12 per day. Now some of those same orchards look as though their friends had forsaken them and places are offered for sale at prices which astonish us.

Great Bargains

Are offered in real estate—for instance: Two miles east of Oregon City, in a good neighborhood, with good schools and in a healthy place, lies a farm of 269 acres, with 20 acres of orchard having 60 varieties of apples, 40 acres of cleared and fenced land cropped, a house that cost 20 years since \$10,000, a barn 30x60 with 16 ft. posts, a large apple house with double walls. Of the wood land 100 acres is well watered for pasture land, 40 acres of young fir trees standing so thick that you cannot see two rods into the thicket, the other 60 acres has larger trees and more scattered. Once the farm would have brought \$20,000, now it is offered for \$4,000. With good treatment that quality of land produces 1½ to 2 tons of hay per acre, 75 to 100 bushels potatoes, 30 bushels of wheat, and does well in peas or oats. Apple trees that bore all they could hold up the third year from planting and have had no care for years are still bearing fruit but "don't go a cent on beauty."

A Fine System of Treatment

Was recommended to us by which the apple trees could be in great measure restored; "Turn in the cows and let them browse off the lower limbs and it will make them look nice. I corralled a part of my orchard last year and am going to corral another piece next year."

We found two orchards that would look well in any country and the owner of one of them said he had tried "elbowgrease." The trees had been cultivated and trimmed and the owner seemed to have plenty of money. In the adjoining orchard we noticed a Dix pear tree planted about 13 years since, which was a foot through at the ground, with bark perfectly smooth and looking as all the other pear trees in that orchard did—very healthy. Prunes do better here than almost any other place. They are laying up their nice apples to send to San Francisco when those raised further south are gone.

A Chance for a Cider Maker

Seems good here where there is plenty of water power, plenty of apples, and cider bringing 20 cents per gallon, and could be sold in quantity from the press at from 12 to 15 cents. Apples for cider would vary from 10 to 25 cents per bushel. They are making cider in a small way with nut mills and lever presses that will yield two gallons of cider to the bushel, taking half and leaving half, you see.

A Cheap Dry House,

We found on the place of Mr. Hunsaker which was simply a double brick arch about twelve feet long, with the chimney by the side of the door, thus making the heat pass under the whole surface of the dryer. Above the arches was a wooden frame with shelves sliding in to hold the fruit. This cost about \$100; would dry forty bushels of apples per day and consume about 1½ cords of firewood per week. He had a parer that would pare, quarter and core 25 to 30 bushels of fruit per day. The parer is fastened to a board that slides in a groove, and when the apple is pared carries it against a tin shaped so as to quarter and core at one process. The apple is not driven through at the first push, or the fork would hit the tin, but is left sticking to the tin half down and pushed through by the next apple.

Clearing Land

Is a business that we have enquired very closely to find the cost of. Different estimates vary from \$10 to \$150 per acre. When they take the small first stand so close together and burn the debris left after taking off the wood, they can get a good crop of wheat without plowing, and by seeding down with clover and timothy can get good pasturage for four or five years after the wheat is off. By that time the stumps can be easily pulled up and the land plowed.

A Little Profit all the Time.

The wood brings \$3 per cord at Oregon City, and at that rate it will pay for clearing and burning, and some to spare, where it is within two or three miles of the town. Managed in this way there seems to be a profit every year.

Clearing Heavy Timber.

If one undertakes to clear a heavy piece of timber from stumps and roots the first season, as some near the river has been cleared, that is a work for the giants, and we show no sign of incredulity when they tell us it costs \$150 per acre. Not far back are Railroad and Government lands that can be taken up at \$2.50 per acre, and they tell us that some good land is left.

We can see no special inducements for labor-

ers to come here hoping for extreme wages, but for those who have a little ahead it seems a good place to invest with a hope of getting a cheap and healthy home. For those who have capital, and strength, and energy, to restore a dilapidated farm, we have seen no better promises of good returns. Those who have been looking up farms tell us that we have not begun to see good bargains yet. We write specifically of what chances we see, that we may give people an insight of what kind of chances they may hope to find, not thinking that we have seen the best chances.

Wages

At the locks, for stone-cutters and masons, have been brought up to \$6 per day by the demand for their labor in California. Carpenters get \$3@3.50, common laborers \$2@2.50, per day, and Chinamen, \$25@35 per month. In the factories and shops they get fair hands at \$1.12½ for Chinamen and \$1.75 for white men, at steady jobs. Mechanics of course get better wages but are not apt to have steady work.

There have been between 200 and 300 persons buried at the cemeteries here. Considering that this is the oldest town in the State, that it has had a pretty steady population of about 1,200, and that a part of the deaths were caused by a steamboat explosion, we think this a good showing. The death rate cannot certainly be much higher than one to one hundred and fifty.

The Cotton Plantations.

The cotton plantations are upon the Merced river bottom, from three to seven miles below Snelling's, and mostly in the vicinity of Hope-ton, the latter a small place where there is a post-office, a store, a blacksmith shop, and a dozen or more other houses.

Col. J. M. Strong has 200 acres of cotton planted this year, upon the farm known as the Stockard place, six miles below Snelling's. The Buckley Brothers have 250 acres of cotton planted on their farm, next below Strong's. J. B. Coconaur has from 12 to 15 acres of cotton on the south side of the river near Col. Strong's place. C. S. Peck, three miles below Snellings has 75 acres of cotton on his farm, a short distance above. Claiborne Dean in the same vicinity, has 25 acres of cotton, and Mr. Farrell has five acres. His farm adjoins that of Peck. A. B. Anderson, the hotel keeper at Snellings, has a few rows of cotton in his garden, which people passing through the town who have not come to visit the large plantation can readily examine.

The Crop.

I have visited and examined with much interest all these plantations, excepting the small one of Mr. Farrell. I would say generally that there is very little difference in the condition of the crops upon any of these plantations. In every one of them it is apparent from the most casual inspection that no plant ever grew more luxuriously, and in every possible way evinced the complete adaptation of the soil and climate in which it was placed, to its growth and the maturity of its fruit, than do the cotton plants here. They are evidently healthy, strong and vigorous. The amount of growth made in a single season is remarkably large. Many of the stalks are over an inch in diameter, and from four to six feet high, with abundance of branches. The number of bolls upon a branch is large, in fact, sometimes out of all proportion to the size of the plant, for branches half an inch in diameter are frequently seen broken down from the main stalk by the weight of the bolls they contain. The bulk of the bolls are well advanced towards maturity and beyond the reach of damage from frost. On the strongest plants the lowest branches are so loaded down that the bolls lie upon the ground and are also shaded from the sun. Usually these bolls are not yet open. The bolls upon the next branches above are now beginning to open well, so as to be ready for picking. On the branches above these again the bolls are from as large as pigeon's eggs to full size; but not yet opening, while at the tops of the plant and on the ends of the branches, new leaves are yet putting out; blossoms are still opening, and squares forming, which, of course, will not reach maturity before the plant is killed by frost. Now, however, the plants are full of vitality and will mature, all but the latest sets of blossoms and bolls. A single frost would open these fruits of all the bolls formed, and render the entire crop ready for picking. This is on the moister land, where irrigation was applied.

On the small patches, where the soil is light and thin, and underlaid by gravel which has drained it of moisture, the growth of the plant has often ceased, the leaves are yellow and drying up rapidly, no new leaves or blossoms and squares, and all—or very near all—the bolls are completely open and ready for picking. On these patches, where a good stand of plants was obtained, the cotton will average, at least, twenty good, perfected bolls to the plant. Where it is a little better, there will be many bolls already matured, or nearly so, and ten or a dozen more that will yet mature and open.

There are occasional small patches of drift sand, where the stand was lost entirely, and the land is bare, or nearly so. Whenever a few plants in such cases survived, and stand pretty much by themselves, the growth is remarkably vigorous and rank.

The patches upon which the crop was lost by the drifting of the sand and by extreme dryness are not numerous, very small and of little importance. The patches upon which the plants

started well but have now matured and ceased growth and are only developing or have already developed and opened all the bolls formed, are also small and not sufficient yet to justify the employment of any large number of cotton pickers. In these patches the plants are from eighteen inches to three feet high.

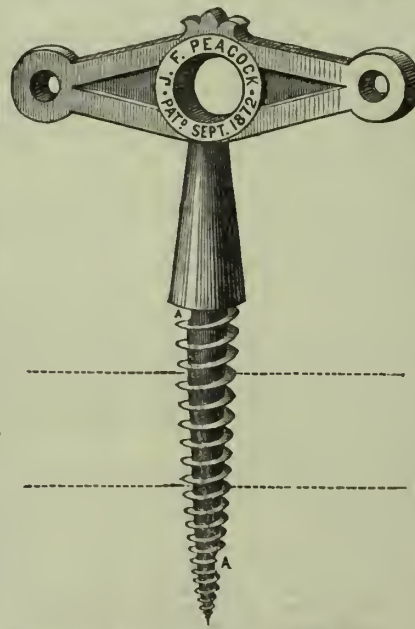
On the moister lands where no irrigation has been applied, the plants throughout, stand from three to five feet in height with plenty of side branches. On lands that are still damper, and those where irrigation has been applied, the growth is extremely rank, the plants are five and six feet high, the branches are so thick as to shade the ground completely, though the rows are four feet apart, the branches interlock so thickly as to render it difficult to pass between them. Upon such plants the number of bolls and squares is enormous and the blossoms continue to open. Mr. Buckley assured me he had counted over four hundred bolls and squares upon a single plant, about twenty five more than the largest number observed in any instance last year. In fact it is not desirable to have so rigorous a growth as irrigation produces, and even this year the Buckley Bros. did not irrigate at all, while upon other plantations sometimes only portions of the crop were irrigated, and next year, if similar to this, little or no irrigation will be used on any of the Merced cotton farms.

Cotton Picking—Splendid Results.

Mr. Strong commenced picking on September 26th, and has a pile of seed-cotton in his barn over thirty feet long, twelve feet wide and five feet high. Mr. Peck had five hands picking during the past week. Mr. Coconaur had a couple of hands picking on Friday for the first time. The Buckley Bros. say that this year the stand is finer, larger, and looks better in every way than last season, and promises a larger yield. Samples of the staple you have already seen are of superior quality. Last year the crop upon their farm yielded twenty-one or twenty-two thousand pounds of ginned cotton, the area cultivated being fifty-one acres, being at the rate of 400 pounds per acre. Every one who sees the crop speaks well and favorably concerning it. All pronounce it entirely successful and no longer experimental, being quite as sure and safe as any other crop. People from the cotton-growing regions of the Southern States all say they never saw better looking or more promising cotton-fields, and many say they never saw their equal.—*Cor. Bulletin.*

A Gimlet Ventiduct.

The cut which is shown herewith is an illustration of a device which is called by the inventor a "gimlet ventiduct." Its object is to provide a ready means of giving a vent to barrels, casks and other liquid-containing vessels.



PEACOCK'S PATENT VENTIDUCT.

It will also answer for a sampling faucet. As the cut shows, the handle and lower part have the appearance of a common gimlet with the screw part rather enlarged. At the extremity of the shank is a gimlet, or other pointed screw, whose base where it joins the shank is of smaller diameter than the shank, and the shoulder thus formed is beveled inward, as shown.

A hole passes diagonally through this screw, commencing at a point near the shoulder and passing out at the side of the screw near the point, as may be seen by reference to the cut, or a groove is made upon one side of the screw, which will serve the same purpose. The screw is to be bored through a cork, if convenient, or it can be bored directly through the wood of the barrel, and when turned down so as to bind the beveled or saucer-shaped shoulder against the wood or cork, a perfect air and water-tight joint is produced; but when it is desired to give a vent to the barrel or sample its contents, the screw can be turned backwards until the outer opening of the vent passage is upon the outside

of the barrel, while the opposite end communicates with the interior, thus allowing the passage through it of either air or liquid, as desired.

The combination of this vent screw with the handle and shank provides a neat, convenient and useful implement; but if desired, the handle could be dispensed with and a square end be made upon the shank, so that it could be turned by an ordinary wrench. The faucet ventiduct can be made of either wood or metal, and the screw can be provided with any suitable style of screw-thread and penetrating point. This little device will be found of great use to wine men and others who have liquids of any kind stored in casks or barrels. It is the invention of Mr. J. F. Peacock, of Reno, Nevada, who procured his patent through our agency.

San Luis Obispo County.

Editors Press.—Is it not a reflection upon our progressive age that you can go in no conceivable direction without seeing the effect of defective legislation? And occasionally the dispensers of justice feel most terribly these deficiencies. As we were passing northward from the Arroyo Grande, the substantial improvements began to attract our attention. Both sides of the road, the fields fenced with well constructed enclosures, but no houses visible. We could not understand it; but after traversing mile after mile, a green corn field, also one of beets; led us to conclude that we must be in the vicinity of one of the immense dairies of California. It proved to be that of the Steele Brothers, extending some 12 miles along the road, and divided for convenience into lots of from 40 to 400 acres. The fences for the most part were made of split rails from the Cottonwood oak or aspen, and must have cost a deal of labor in the getting out and putting up, for with trifling exceptions the fencing is hard to split, and long distances to transport.

There are two or more grants or ranches in the possession of these dairymen in this vicinity, but the homestead place has been lost to them of late by some legerdemain, together with all their valuable improvements. One of these gentlemen, Hon. George Steele, occupied a judicial position in another county, and is without doubt well versed in the law, yet this did not protect his well earned and dear bought possessions. How long are the people to submit to the expensive farce of law without justice?

Ten miles north of the little town of San Luis is the little home rancho of J. H. Hollister, one of the pioneer shepherds. This patriarch has a well cultivated garden, an orchard, with bounteous fields of grain and hay. We found him in the midst of his pets, a flock of fine American merinoes, with which he has just returned. These sheep are selected from the best Vermont breeders, such as Hammond, Drew, Wright, Victor, etc., and some from the Ohio flocks of the same blood, such as Henry Newell and others. It sounded natural to hear the familiar shepherds' call once more (after the lapse of 30 years), with which our representative California wool grower drew his carriers of the "golden fleece" towards him, and with endearing words caressed them.

For my part this pastoral life would appear an endless and uncloying enjoyment.

Now let us leave the vicinity of San Luis proper, and wander through the beautifully diversified regions of the Moro, Cambria and Santa Rosa creek, all of which are to the north and westward of the town, and within thirty miles. It is difficult sometimes to give reasons for the nomenclature of particular places. The Moro for instance. It may be from a fancied resemblance to the famous Moro Castle near Havnna, but at all events there is a bold rocky island, rising several hundred feet out of the ocean, and protects the little harbor where schooners disembark and take on their cargo, and where it is said larger vessels may do the same if well managed. Another spur of the Coast Range here terminates in the Pacific, and is only one of the many which find a similar submergence, forming a series of long triangular slopes, with the sharp point always northward, and narrowing down until the traveler must seek some gorge or pass to get inland, or "take water." Up such a pass, although not as steep as usual, one finds their way in 15 miles travel from the Moro to Cambria. Five miles south of this last named point, the first pines within sight, and near the ocean, occur. There is always something peculiarly grateful to the eye in the graceful outline and beautiful tint and foliage of the pine, possibly it may be a reminiscence of the lullabys which were chanted on our native hills, that always carry us back in imagination to the halcyon youthful days and make the pine and cedar wherever encountered, appear like old, old friends.

F. M. S.

AN INGENUOUS APPARATUS has been invented by a French physician, by which the heart is made to register photographically its own pulsations. Such, it is said, is the peculiarity of the apparatus, in its adaptation to different uses, that it may be modified so as to register the variations of the respiration, the irregular action of coughing, and similar physiological phenomena.

USEFUL INFORMATION.

Water—What Might Happen.

Water is the great mechanical power in nature. It is the great leveler; it moves mountains and fills valleys. All our stratified rocks, sandstones, slates, and limestones were formed by the action of water. To the solvent power of water and its chemical action we owe our useful minerals, our metallic deposits, our iron, copper, zinc, gold and silver ores, and even coal. To its physical properties—its relations to heat, we owe all the phenomena of clouds, dew, rain, fog, snow, and frost. It supports the plants and brings them their mineral food from the soil, and protects them from excessive heat. Animals are equally dependent upon it. Yet after all, it is only the agent of the sun; it is sun power that makes plants grow; it is sun power that moves everything in the world, and water is merely the sun's agent.

The loss of water upon the earth would produce the same condition of things on the earth that we notice now in the moon. Although we have such a vast quantity of water, yet it is only 1-240,000 part of the earth, or 0.0042 per cent. The crystalline rocks at the earth's surface now contain a larger quantity of water than this, and the moment our earth cools enough to absorb four-thousandths of one per cent. of moisture, the ocean will disappear. If we should lose our ocean, we shall lose our atmosphere also; the openings or pores in the rocks will receive it by gravitation, and we shall have the same condition of things as now exists in the moon.

HOW TO PHOTOGRAPH LEAVES.—Get two bits' worth bi-chromate of potash from the druggist and dissolve it in a two-ounce vial of soft water; pour off some of the liquid into a shallow dish; on this float a piece of ordinary writing-paper until it is thoroughly and evenly moistened. Take it from the water and let it become nearly dry in the dark; it will then be of a bright yellow color. On this prepared paper place the leaf to be photographed, and under it a piece of soft black cloth, and several thicknesses of newspaper. Put the whole between two pieces of glass and fasten together at the edge (say with spring clothes-pins). Now expose to a bright sun-light, placing the glass so that the sun will directly fall upon the leaf. In a few minutes it will begin to turn black; but it requires from thirty minutes to several hours (according to the light, etc.) to produce a perfect print. When the print has become dark enough, take the paper out and put it in clear water, which must be changed every few minutes till the yellow part becomes perfectly white. If the work is well done, the veins of the leaf will appear very distinct.

CEMENT FOR FIXING GLASS LETTERS.—Some say a solution of shellac in methylated spirits will be sufficient, and also water-proof. Others recommend the following cement: Powdered orange shellac, 1 oz.; alcohol, 2 oz. Place the containing bottle in a warm place. Agitate frequently until all the lac is dissolved. Apply cold. This will resist wet, and will cement strongly metals, wood, porcelain, glass, etc.

Then, again, it is said a thick solution of marine glue in naphtha will answer perfectly if color is no object. But the glass must be chemically clean, and this is not always easy. The least trace of soap or grease will spoil the adhesion of any cement. Try soda or ammonia, followed by whitening and water, clean clothes, and plenty of rubbing, and let the cement dry on the letters till the surface just begins to be "tacky" before you apply them. Many excellent recipes fail on a first trial, from the omission of some minute precautions which are of more importance than some suppose.

SUMMER TEMPERATURE OF SAN FRANCISCO AND PHILADELPHIA.—The hottest noon-day temperature of July, at Philadelphia, was 98°, and the coldest 69°. The warmest noon-day temperature at San Francisco was 69°, with the exception of a single day when it was 71°. The coldest was 60°. So the warmest days in the latter place correspond almost exactly with the coldest in the former. Whilst Philadelphians were dropping in the street from sun-stroke, San Franciscans, though more than two degrees farther from the Pole, clad in cloth and flannels, were buttoning their coats and shivering in the chill wind.

CURIOUS FACTS ABOUT OXIDE OF IRON.—Oxide of iron when freshly formed freely absorbs the sulphuretted hydrogen or foul gas, thus forming the black sulphide of iron; this, when exposed to the atmosphere, deposits its sulphur, and by the absorption of oxygen becomes converted again into the oxide of iron. The sulphur which it had before taken in as sulphuretted hydrogen is thus set free among the particles of oxides, which, by a succession of foulings and re-oxidations, becomes so charged and clogged with inert sulphur that the air loses the power to restore it.

TO BLEACH FEATHERS.—First clean from greasy matter, then place the feathers in a dilute solution of bichromate of potassa, to which a little nitric acid has been added. The greenish deposit of sesquioxide which ensues may be removed by weak sulphuric acid, when the feathers will be left perfectly white.

WHAT SOME PEOPLE DRINK.—Dr. Hodges, of Belfast, has recently had occasion to analyze several samples of "whiskey," and has published the results of his examination in the *Dublin Evening Mail*. A bottle of whiskey, described as a fair sample of the drink sold in low-class public houses, was on examination found to be heavily adulterated with naphtha, cayenne pepper and vitriol. Another sample was composed almost entirely of naphtha, slightly colored with genuine whiskey; and a third detectable compound had not even a "coloring" of the genuine spirit, being a pleasing combination of cayenne pepper, oil of vitriol, alcohol, and sulphate of copper, which could be produced by any amateur chemist at the rate of one penny per gallon. After this, one is not surprised to learn that the physical results of the consumption of this diabolical decoction are "frightful."

NEW-FIBROUS MATERIAL.—J. Schreiber & Co. of San Francisco have recently taken out a patent for the working of the inner bark of Port Orford cedar into material suitable for upholsterers' stock and paper stock. The bark has a long and tough fibre, is quite soft and elastic when beaten up or otherwise prepared. Pulu is going out of use as a cheap bedding material. If cedar bark is cleaner and better it may come into extensive use. There is an abundance of this bark wherever there are sawmills in operation. A clean, soft, elastic and cheap bedding material has long been wanted. It is possible that this want is to be met in the new preparation of cedar bark.

AN EXTRAORDINARY LAKE.—Lake Kenka, or Crooked Lake, situated in the center of the grape region of Western New York, is 487 feet above the level of the Atlantic. Its length is 22 miles and its greatest breadth 1½ miles. The outlet which flows into Seneca lake has a descent of 270 feet in 7 miles. Once every year, usually in May, the lake purifies its waters by throwing to the surface a yellow substance, which extends and smells like sulphur and gradually extends until the face of the entire lake is covered. This remains about a week and then suddenly disappears in a day, and is not seen again until the next season.

A VARNISH TO IMITATE GROUND GLASS.—Dissolve 90 grains of sandaric and 20 grains of mastic in two ounces of washed methylated ether, and add, in small quantities, a sufficiency of benzine to make it dry with a suitable grain—too little making the varnish too transparent, and an excess making it crapy. The quantity of benzine required depends upon its quality—from half an ounce to an ounce and a half or even more; but the best results are got with a medium quality. It is important to use washed ether, free from spirit.

EXCELLENT VARNISH FOR HARNESS.—Pulverize and put in a jug or bottle half a pound to a pound of gum-shellac, cover with good alcohol, and cork tightly. In about two days, if shaken frequently, the gum will be dissolved and ready for use. If the liquid appears as thick as thin molasses add more alcohol. To one quart of the varnish add one ounce of good lampblack and an ounce of gum camphor. An occasional coat of this is also good for rendering boots water-proof.—*Rural New Yorker*.

TO REMOVE TAR AND RESINOUS SUBSTANCES. Dr. Brickerd (*Med. and Surg. Reporter*) discovered by accident that a mixture of powdered extract of liquorice and oil of aniseed will quickly and effectually remove tar, Venice turpentine, pitch, etc., from glass, porcelain, and the skin, and is entirely harmless. For the latter purpose the mixture should be about the consistency of thick cream, and should be thoroughly applied; being followed by soap, warm soft water and a sponge.

A CEMENT TO STOP CRACKS IN GLASS VESSELS TO RESIST MOISTURE AND HEAT. Dissolve caseine in cold saturated solution of borax, and with this solution paste strips of hog's or bullock's bladder (softened in water) on the cracks of glass, and dry at a gentle heat; if the vessel is to be heated, coat the bladder on the outside before it has become quite dry, with a paste or rather concentrated solution of silicate of soda and quick lime or plaster of Paris.

DECAY OF GUTTA-PERCHA.—It is a fact worth knowing that gutta-percha decays rapidly, and becomes brittle and porous when dry and exposed to the light, but under water appears to undergo no change whatever. Gutta-percha sunk in the sea for twenty years shows no sign of decay which may be regarded as a condition in which nature comes to the aid of mechanical and electrical science.

ILLINOIS TIMBER FOR ENGLAND.—The statement is made by the Secretary of the Iowa Board of Agriculture that a short time since a single individual, whose name is not given, entered into a contract to furnish the British Government with five million cubic ft. of white oak, all of which is to be cut from forests within fifty miles of Cairo, Ill.

PAPER labels on bottles may be preserved by rubbing them, when dry, with paraffine, and then smoothing them out with a glass rod.

A cubic foot of air weighs 522 grains. A cubic foot of water weighs 1,000 ounces.

GOOD HEALTH.

Sleep the Best Stimulant.

The pulpit, the bench, the bar, the forum, have contributed their legions of victims to drunken habits. The beautiful woman, the sweet singer, the conversationalist, the periodical writer have filled, but too often, the drunkard's grave. Now that the press has become such a great power in the land, when the magazine must come out on a certain day, and the daily newspapers at a fixed hour, nothing waits; everything must give way to the inexorable call for copy, and, sick or well, disposed or indisposed, asleep or awake, the copy must come. The writer must compose his article, whether he feels like it or not; and if he is not in a vein of writing, he must whip himself up to it by the stimulus of drink. Some of the greatest writers in the country have confessed to the practice on urgent occasions, of taking a sip of brandy at the end of every page, or even oftener. It may have escaped the general reader's notice that more men have died young who have been connected with the New York press within ten years, and that, too, from intemperance, than in all other educational callings put together; young men whose talents have been of the first order, and gave promise of a life of usefulness, honor and eminence. The best possible thing for a man to do, when he feels too tired to perform a task or too weak to carry it through, is to go to bed and sleep—a week if he can. This is the only true recuperation of brain power, the only actual renewal of brain force. Because, during sleep the brain is in a state of ease, in a condition to receive and appropriate particles of nutriment from the blood which take the place of those which have been consumed in previous labor since the very act of thinking consumes, burns up solid particles, as every turn of the wheel or screw of the splendid steamer is the result of the consumption by fire of the fuel in the furnace. That supply of consumed brain substance can only be had from the nutriment particles in the blood which were obtained from the food eaten previously—and the brain is so constituted that it can best receive and appropriate to its life those nutriment particles during the state of rest, of quiet and stillness in sleep. Mere stimulents supply nothing in themselves—they only goad the brain, force it to a greater consumption of its substances, until that substance has been so fully exhausted that there is not power enough left to receive a supply, just as men are so near death by thirst or starvation, that there is not power enough left to swallow anything—and all is over. The incapacity of the brain for receiving recuperative particles sometimes comes on with the rapidity of a stroke of lightning, and the man becomes mad in an instant loses sense, and is an idiot. It was under circumstances of this very sort, in the very middle of a sentence of great oratorical power, that one of the most eminent minds of the age forgot his ideas, pressed his hand upon his forehead, and after a moment's silence said: "God, as with a sponge has blotted out my mind." Be assured, my readers, "There is rest for the weary" only in early and abundant sleep, and wise and happy are they who have firmness enough to resolve that "By God's help I will seek it in no other way."—*Ex.*

HOW LONG SHOULD A MAN LIVE.—According to Professor Faraday, the crime of suicide is very common in this age of the world, and he intimates that all who die under one hundred years of age may be charged with self-murder. Providence having originally intended man to live a century, would allow him to arrive at that advanced period if he did not kill himself by eating unwholesome food, allowing himself to be annoyed by trifles, giving license to passions, and exposing himself to accident. Flourin advanced the theory that the duration of life is measured by the time of growth. When once the bones and epiphysis are united, the body grows no more, and it is at twenty years this union is effected in man. The natural termination of life is five removes from the several points. Man being twenty years in growing, lives five times twenty years, that is to say, one hundred years; the camel is eight years in growing, lives five times eight years, that is to say forty years; the horse is five years in growing, and lives twenty-five years, and so with other animals.

CARBOLIC ACID IN SMALL POX.—In a recent number of the *Lancet*, Dr. Alexander Watson recorded several cases of small pox and scarlet fever in which the external application of carbolic acid met with marked success. In the case of one patient with small pox, whom he saw at the period when papule appeared, he ordered an enema, and then had the patient (a girl of eleven years) sponged all over with carbolic acid soap suds. On the next day a severe attack of confluent small pox was threatened, but the child was sponged as she had previously been, and then her whole body was painted with carbolic acid glycerine of the British Pharmacopœia. Five grains of Dover's powder were then given to allay irritability, and the little girl slept quietly for several hours, when she was sponged again. No vesicles formed, and the patient was convalescent in a few days. Carbolic acid was, in the meantime, plentifully used about the room.

Hemlock as a Poison.

How it Worked in the Case of Socrates.

No poison claims a higher antiquity or a greater historical interest than hemlock. To the physician there is none that surpasses it in physiological interest. The bare mention of the plant carries one back to the days of the Grecian republic, and recalls the undying name of Socrates, Theramenes, and Phocion—men who have submitted to the baneful influence of hemlock rather than betray the liberty of their country. If we would learn the effect of the Athenian State poison, we may have Plato for our teacher, and for a subject him of whom Cicero justly said "that he was the first who called down philosophy from heaven to earth, and introduced her into the public walks and domestic retirements of men, that she might instruct them concerning life and manners." "Socrates," says Plato, "received the fatal cup without change of countenance or the least perturbation. His executioner directed him to walk about until he should feel his legs becoming heavy. He did so until the chilling operation compelled him to lie down; then it seized upon the more vital parts. The executioner approached him, said to his friends that when the effects of the poison would reach his heart Socrates would depart. Then, uncovering him he found that the lower portion of the body was cold. At this time Socrates spoke these last words to his friend Critto: 'Critto we owe Esculapius a cock; pay the debt, and do not forget it,' and in a short time was convulsed. The man then uncovered him; his eyes were fixed, and when Critto observed this, he closed his eye-lids and his mouth."

In this account we have ample proof of the action of hemlock. The legs grow heavy, and the chilling effects creep on. The victim no longer able to stand, lies down; at last the respiration ceases, accompanied, as is usual in such cases, by a slight convulsive tremor, the mind remaining clear and tranquil to the last.

Remedy for Wounds.

A correspondent of the *Country Gentleman* gives the following as one of the best remedies known for the cure of wounds: "Take a pan or shovel with burning coals, and sprinkle upon them some common brown sugar, and hold the wounded part in the smoke. In a few minutes the pain will be allayed, and recovery proceed rapidly. In my own case a rusty nail had made a bad wound in the bottom of my foot. The pain and nervous irritation were severe. This was all removed by holding it in the smoke for fifteen minutes, and I was able to resume my reading in comfort. We have often recommended it to others, with like results. Lately, one of my men had a finger-nail torn out by a pair of ice tongs. It became very painful, as was to have been expected. Held in sugar smoke for some twenty minutes, the pain ceased, and it promises speedy recovery."

This sounds very much like one of those remedies which need supplementing by an abundant faith to produce their beneficial effect. The products of the imperfect combustion of sugar are water, carbonic acid, and a dense volume of carbon in the form of soot.

REMEDIES FOR CORNS.—A correspondent of the *Country Gentleman* states that he has found the following a simple and effectual remedy for corns. "Bathe the feet in tepid water, to soften the corns; pare these off very close with a sharp knife; then rub on well, green peach-tree leaves; when, after continuing the rubbing once or twice a day, the corns will disappear."

A good corn salve could no doubt be made for winter use, by bruising the peach leaves when green; then boil them in water until the strength is extracted, then take out the leaves, strain the water off the sediment, add a sufficient quantity of resin, beeswax, tallow, and lard oil to make it soft enough, and simmer down, without burning, until the water is evaporated. Soften and pare the corn, as before directed, spread the salve on a small piece of cambric or linen, and apply, putting on the sock or stocking very carefully, so as not to rub it off. Keep applying until the corn disappears.

The following is a recent English recipe for the same purpose: Bathe the feet well in warm water, then with a sharp instrument pare off as much of the corn as can be done without pain or causing it to bleed, and dress once a day with a salve made of black oxide of copper and lead in equal quantities.

TURPENTINE IN HEADACHE.—Dr. Warburton Begbie advocates the use of turpentine in the severe headache to which nervous and hysterical women are subject. There is another class of sufferers from headache, composed of both sexes, who may be relieved by turpentine. I refer to the frontal headache, which is most apt to occur after prolonged mental effort, but may likewise be induced by unduly sustained physical exertion—what may be styled the headache of a fatigued brain. A cup of very strong tea often relieves this form of headache; but this remedy, with not a few, is perilous, for, bringing relief to pain, it may produce general restlessness and—worst of all—banish sleep. Turpentine, in doses of twenty or thirty minims, given at intervals of an hour or two, will not only remove the headache, but produce in a wonderful manner that soothing influence to which reference has already been made.



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SAN FRANCISCO:

Saturday, Nov. 2, 1872.

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"Scattering Seeds!"

We herewith offer, till further notice, to send the
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ONE SAMPLE COPY of this paper will be sent free to any
person's address recommended to us as likely to subscribe,
by any one who will inclose a one cent stamp for postage.

The Telegraphic Wheat Quotations.

The champions of the Liverpool Telegraphic
Wheat Quotations still continue the fight, but
continue it unavailingly. They are singularly
unhappy when they meddle with figures. Take
the *Alta* for instance. Last week it gave an
item in its commercial columns, professing to
show that the rates given by the *Mark Lane*
Express were the extreme ones of the market,
including alike the low price of California
wheat, and the highest of California Club. It
quoted the circular of Henry Jump & Sons as
giving California white wheat 13s. 3d. to 13s.
6d. and white California Club as 13s. 9d. to 14s.
and then showing that the *Mark Lane Express*
quoted California white wheat at 13s. 3d. to 14s.,
triumphantly claimed to have completely de-
molished the arguments of all who were so au-
dacious as to doubt that the telegraphic quota-
tions were the gospel of the produce world.
What will our readers think of the *Alta* when
they learn that it has misquoted the *Mark Lane*
Express to the extent of 5 cents per cental, that
journal giving not 13s. 3d. to 14s., but 13s. 8d.
to 14s. 6d. Since then it has published extracts
from a number of other private circulars all tend-
ing to show that these circulars agreed with the
Mark Lane Express. It further unblushingly
asserts that they all agree with the telegraphic
reports for the same dates.

Now, it is a fact that they do not agree with
said telegraph reports, and they on the contrary
are far below them. We give at the close of
this article the figures in a tabulated form, and
will allow the public to judge of the trust-
worthiness of the *Alta* as a commercial journal.

It will be seen that the discrepancy in the
first quotation is 4 cents, and that in the second
7 cents. Supposing prices to be influenced in
this city by telegraphic quotations, and taking
the surplusage for export at the lowest figures at
which it has been estimated, the loss to the
farmers at 4 cents would be \$320,000, and at
7 cents \$560,000. But taking the highest es-
timates of export, it would be at 4 cents \$640,-
000, and at 7 cents \$1,120,000. And it can be
seen that in the circulars quoted by the *Alta*
the highest figures only reach the lowest given by
the *Mark Lane Express*.

But the *Alta* makes a most egregious mistake
when it intimates that what it calls the extreme
rates given by the *Mark Lane Express* always
covers the telegraphic rates. The contrary is
the fact. Out of 91 quotations for four-
teen months the highest telegraphic quotations
do not in 61 instances approach the lowest
given by the *Mark Lane Express*. Nay on June
28th, the rate telegraphed is 16 cents below the
lowest quotation given in that paper, the rates
given in Federal coin being, per telegram from
Liverpool, \$2.96; *Mark Lane Express*, \$3.12 to
\$3.24. We may say that the *Commercial Herald*
has unwittingly fallen into the trap laid for it
by the *Alta*—quoting the *Alta's* figures—so that
the facts we have set forth serve as an answer
to that journal too.

We next come to the defence of J. W. Simon-
ton, agent of the Associated Press, who fortifies
himself with quotations from Liverpool cir-
culars published in the interest of the wheat buy-
ers, and which, as shall appear from a compar-
ison with the figures given by the *Mark Lane*
Express, an impartial reporter of the grain
markets of England, are altogether untrust-
worthy. It will be seen by even Mr. Simon-
ton's own figures as given in the table, that
there are discrepancies which he cannot and
does not attempt to explain. He merely pooh,
poohs them, remarking that the difference is
only one or two pence, that is from two to four
cents. But to his figures:

On August 2d the circular quoted by him
gives, Californian: Average, 11s. 8d. to 12s.; the
average of which is 11s. 10d. On the same date
the rate by telegraph is 11s. 8d.; discrepancy 4
cents. Aug. 9th the circular gives, 12s. to 12s. 9d.,
average to Club, and the telegraph 12s. These
quotations as he puts them would seem to be
the same, but it is evident that the circular
only gives the lowest price of California aver-
age, and that in consequence the cable man is
again behind. The circular on the 16th of
August gives Californian—average to Club, 12s.
2d. to 13s.; the telegraph 12. 3d. Here the lat-
ter may be justified by the circular but we do not
know this, as the latter as quoted by Mr. Sim-
onton does not give the highest price of what is
called California average. On the 23d of Aug.,
as may be seen from the table, the telegraphic
quotations are 4 cents below the lowest price of

California average, given in the circular and
probably 8 cents below the average.

We need not say any more on this head. But
from our table, it will be seen that all the rates
given in the circulars are below those given in
the *Mark Lane Express* and that according to
the latter, the discrepancies on the 2d, 9th, 16th,
23d and 30th of August were respectively, 10
cents, 10 cents, 11 cents, 18 cents and 10 cents.

We may further state that we do not believe
that the "*Mark Lane Express*" includes Club
wheat in its quotations, and as much as the
quantity shipped is infinitesimal, as it is not
quoted in this market, and as there is as far as
we know no record of any having been shipped
this year, we consider the giving quotations for
it an absurdity, and one of which the "*Mark*
Lane Express" could not possibly be guilty. It
plainly and distinctly quotes "California
White," never makes, and has never made the
slightest reference to California Club. We are
further informed by one of our principal grain
merchants, that he does not know of any Club
wheat shipped this year, and that giving quota-
tions for it is egregious nonsense. On this
subject the *Commercial Herald*, says: "The
agent of the Associated Press at New York,
working in common with the Western Union
Telegraph Company, is now sending to this
coast two prices for California Wheat—average
White and "Club." This is arrant folly and
nonsense; it is blind absurdity, and ought to
be abolished at once; and why? Because, in
reality, there is scarcely any California Club
raised here, or shipped to the United Kingdom.
Out of the 100 cargoes exported this season to
Great Britain, not more than two, if any, com-
plete cargoes of Club have been shipped." Bearing
this in mind how then can the "*Mark*
Lane Express" give quotations for a class of
wheat that is not in the Liverpool market?

In this matter we have only the interests of
our clients, the farmers, and of the public gen-
erally at heart, having no quarrel with the
press, with none, save those that try to mis-
represent us and those who give incorrect quo-
tations of the Liverpool market, and help
thereby to lower prices in this. The latter have
had ample time and opportunity to set them-
selves right with the public, but up to the
present they have not done so.

"Alta's" Quotations Compared.		Simon's Quotations Compared.	
Date.	"Mark Lane Ex-press."	Date.	"Mark Lane Ex-press."
Oct. 1	13s. 3d. to 14s. 6d.	Oct. 1	13s. 3d. to 14s. 6d.
" 7	13s. 3d. to 14s. 6d.	" 7	13s. 3d. to 14s. 6d.
" 16	13s. 3d. to 14s. 6d.	" 16	13s. 3d. to 14s. 6d.
" 23	13s. 3d. to 14s. 6d.	" 23	13s. 3d. to 14s. 6d.
" 30	13s. 3d. to 14s. 6d.	" 30	13s. 3d. to 14s. 6d.
Aug. 2	11s. 8d. to 12s. 9d.	Aug. 2	11s. 8d. to 12s. 9d.
" 9	12s. to 12s. 9d.	" 9	12s. to 12s. 9d.
" 16	12s. to 12s. 9d.	" 16	12s. to 12s. 9d.
" 23	12s. to 12s. 9d.	" 23	12s. to 12s. 9d.
" 30	12s. to 12s. 9d.	" 30	12s. to 12s. 9d.
June 28	16s. to 16s. 6d.	June 28	16s. to 16s. 6d.
Aug. 2	11s. 8d. to 12s. 9d.	Aug. 2	11s. 8d. to 12s. 9d.
" 9	12s. to 12s. 9d.	" 9	12s. to 12s. 9d.
" 16	12s. to 12s. 9d.	" 16	12s. to 12s. 9d.
" 23	12s. to 12s. 9d.	" 23	12s. to 12s. 9d.
" 30	12s. to 12s. 9d.	" 30	12s. to 12s. 9d.
June 28	16s. to 16s. 6d.	June 28	16s. to 16s. 6d.
Aug. 2	11s. 8d. to 12s. 9d.	Aug. 2	11s. 8d. to 12s. 9d.
" 9	12s. to 12s. 9d.	" 9	12s. to 12s. 9d.
" 16	12s. to 12s. 9d.	" 16	12s. to 12s. 9d.
" 23	12s. to 12s. 9d.	" 23	12s. to 12s. 9d.
" 30	12s. to 12s. 9d.	" 30	12s. to 12s. 9d.
June 28	16s. to 16s. 6d.	June 28	16s. to 16s. 6d.

THOMPSON'S ROAD STEAMER.—We have re-
ceived a letter from A. P. B.—M. D. of Ellicott
City, Md., directing our attention to the merits
of Thompson's rubber-tire traction road steam-
er as a machine likely to prove of use to Cali-
fornians in steam-plowing. While we accord
our informant a full measure of praise for the
interest he manifests in our agricultural pro-
gress, we would also refer him to *RURAL PRESS*,
vol. I., page 17, for illustration and full de-
scription of the Thompson Road Engine.

REPORTS of Los Angeles and Vallejo Fairs
next week.

Hill Lands for Vineyards.—Vine Hill, Santa Cruz.

We have frequently called attention to the
value of hill lands for growing the grape, but
have never seen such a practical demonstration
of their value for such purposes as was exhibited
at the late Exhibition of the Santa Cruz Far-
mer's Club. The collection of choice grapes
and generous wine there displayed was fully
equal to anything we have met with in any part
of the State, and our surprise was all the greater
when, at the invitation of several of the growers,
we visited Vine Hill, and examined the locality
where the most of those grapes were raised.

Vine Hill

Is located about eight miles northeasterly from
Santa Cruz, well up towards the summit of the
Santa Cruz range of mountains, open and ex-
posed to the ocean and the ocean winds, and
about 1,200 feet above and five miles distant, in
a direct line, from the waters of Monterey Bay—
a locality which might naturally be supposed to
present anything but favorable conditions for
grape raising. However, that may be it appears
that some twelve years ago Mr. Norman Moores
cleared off several acres of chapparral and tim-
ber on a steep and forbidding hill side, about
half way from Santa Cruz to what is now Vine
Hill, and planted the same with grape vines.

Encouraged by his success Mr. Charles West,
who owns a piece of rough hill and timbered
land, about three miles further up the mountain,
some two years later cleared up a portion of his
tract also, planted the vines and induced a num-
ber of others to do likewise. The result has
been that in that immediate locality—now
known as Vine Hill—there are not less than
nine vineyards, all in a thriving condition, and
to which additions are being annually made.
The names of the parties owning these vine-
yards were furnished us as follows:—Jarvis
Bros., 85 acres; Loy Bros., 25 acres; Fitch
Bros., 20 acres; Charles West, John Morgan
and Albert Reily, 10 acres each; Henry Place,
8 acres and Edward Murphy and John S. Bar-
ker 5 acres each. Three or four of this num-
ber make wine a specialty.

We cannot speak in too high terms of the
pluck and energy manifested by these men, who
have thus gone into one of the roughest and
most forbidding localities in the State for agri-
cultural operations, grubbed up the chapparral,
rooted out heavy timber trees, and in some cases
almost created a soil by tearing and breaking
up even the rugged rocks themselves. It seems
almost miraculous that such a forbidding loca-
lity could in the short space of ten years be thus
reclaimed from utter worthlessness, and con-
verted into vineyards and orchards, so produc-
tive and promising that even the San Francisco
bankers are ready to loan money upon them,
as readily as they do upon real estate in this
city.

How the Wines are Made.

The two principal wines made by Mr. Jarvis
are port and sherry. The port is made from the
black cluster and Miller's Burgundy; the latter
being nearly identical with the former, and
both being of the Penean family, from which
the finest European wines are made. Mr. J.
allows the grapes to remain on the vines until
they have lost from 20 to 25 per cent. of their
water, thereby becoming considerably shrivel-
ed. If picked earlier they will not make a good
port. The grapes immediately after being
picked are run through the masher directly in-
to fermenting vats, where the entire mass is al-
lowed to remain and ferment for two weeks;
after which the clear liquor is drawn off, clar-
ified and placed directly into casks, the mash
going to press, the liquor from which, after be-
ing clarified, passes directly to the cask with
the clear liquor as above. The mash next goes
to the still, the product of which, in the form
of brandy, is added to the wine now in the
casks and in quantity sufficient to prevent any
further fermentation.

The sherry wine is made from the Gray
Diechia by mashing the grapes and putting the
same directly to the press, from which the
liquor is removed to open casks where it is al-
lowed to ferment for two months, when it is
drawn off, clarified and placed in casks for the
market.

It will be seen from the above that the liquor
for port wine is allowed to ferment only two
weeks, and that the fermentation takes place
while the juice is mixed with the skins, seeds,
etc., which give color, and probably impart
other qualities to the wine; while with sherry
fermentation is not allowed to take place until
the skins, etc., are removed from the juice;
but the fermentation is then allowed to proceed
until nearly all the sugar has been converted
into alcohol and the wine becomes what is
technically termed "dry." There is less
naturally formed alcohol in the port than in
the sherry, although by the addition to the port
of the brandy distilled from the skins, the
amount of alcohol is made about equal in both
—say 20 to 22 per cent.

Muscadel is made from the Muscat of Alex-
andria, and in the same manner as the sherry,
only a little drier—that is fermentation is al-
lowed to go a little further before being arrested
by the introduction of alcohol. Mr. Jarvis also

makes large quantities of "Angelica," and a white dry wine, made in the same manner as his muscatel, but from the Rose of Peru, Malvoisie and Mission varieties. Angelica is made by adding about one-fifth in quantity of proof brandy to any sweet unfemented juice of the grape. In consequence of the brandy so added it is impossible for the grape juice to undergo any fermentation. Hence angelica is simply the sweet juice of the grape preserved in its sweetness by adding alcohol.

Plowing for Wheat.

The subject of deep or shallow plowing for wheat is engaging the attention of our farmers to a considerable extent this year, and is the theme of discussion at the meetings of farmers' clubs, we instance that of the Napa county club in this number of the RURAL. It is really remarkable to see what a diversity of opinion exists in regard to the practice of deep or shallow plowing almost in the same immediate neighborhood and on the same kind of soil.

We would like in these discussions where a practical farmer says he prefers deep to shallow plowing, or vice versa, that he give his reasons for the preference, in stating the comparative condition of the soil by the two processes and its effect upon the growth of wheat. Simply to say that, "I think shallow plowing best," without giving a reason, goes but little way in enlightening or convincing another that the practice is the best; we want to hear some reason for it.

We are inclined to believe that the saving of labor in the strength of the animals employed often determines the depth to which plowing is done, quite regardless as to what depth would be really the best to secure the largest crop. There is hardly a doubt but that shallow plowing effects a more perfect pulverization of that portion of the soil plowed, than if the plow ran deeper. First, because the furrow slice is more effectually turned completely bottom up, and secondly, because no harrow runs to the depth of six or eight inches.

In the one case, all the soil plowed feels the effect of the harrow; in the other not. It becomes a question then, of whether plowing deeper than can be perfectly pulverized by the harrow, has any advantage over a depth of furrow in which all of it can be brought to a proper condition for the reception of the seed and its subsequent growth.

Other Crops than Wheat.

Doubtless much depends upon the kind of crop to be produced. Fruit trees, deeply rooted vegetables of every description, and corn would doubtless be benefited by deeper plowing, even very much deeper, always presuming that both soil and subsoil are allowed to maintain their relative positions. But with the cereals and particularly wheat, it has been proved by repeated experiments that the subsoil can be made too open and porous for successful growth.

Four or five inches of the surface soil perfectly pulverized, in which to start the seed, with two inches of this as a covering for the same, and the whole resting upon a substratum of a firmer texture, will be found a better preparation for wheat upon most soils, than a furrow eight or ten inches in depth; and particularly is this practice preferred upon strong clay or adobe lands.

A reason why many intelligent farmers persist in the practice of shallow plowing for wheat is doubtless this—land plowed five inches deep, with an otherwise perfect preparation—it has been clearly and repeatedly proven—will produce less straw in proportion to the grain than though the soil had been plowed eight or ten inches deep.

If we will give no kind of attention to the law of compensation, and continue to crop our lands with no return of fertilizing materials, it will doubtless be well, when the yield of wheat is perceptibly diminishing to add another inch to the depth of the furrow, and this practice will carry us on for a few years longer. In time however, manures of some kind must be applied, even with deep plowing, to keep any soil in a constant state of fertility under constant cropping.

The constant harping then upon the "single string," deep plowing, as being all that is necessary to maintain our soils in a state of constant fertility, is simply a fallacy. We would like to hear from our farmers, of the reasons that guide them in their preferences for deep and shallow plowing, and their applicability to all and certain lands and crops.

Grains of Science.

[Written for the Press.]

Hands.

Did you ever think Nature always succeeded in making the thing she set out to do in the first trial? In the workshop of the universe there are no failures. But millions of patterns are started and thrown aside unfinished, or left to answer a temporary object, and though crude and transitory, they win a certain achievement. The primary effort is generally as objectless to appearance as the shapeless segment of a rock out of which shall result a "Greek slave." The earliest recognized attempt to make a hand came so far short of it, none could tell what particular object was intended. But when a beautiful hand is at length formed, we can trace back the idea in kindred resemblances and finally end in the neighborhood of its beginning, with a coarse prong. Feet were made before hands. They were needed first. Before the mould of the hand proper was completed, the foot performed many of the offices of the future hand. The hand therefore, is the out-growth of the foot.

Let us bring forward a handful of specimens and see how nature handles her prentice patterns.

The *Amoeba* is able to protrude a hand, which it extemporizes for the occasion of its use. There is a great deal to be said of the *amoeba*. It is typical of a wide range of idea. At present we only refer to it for the embryo conception of a hand. The point, A, reaches out, and if it touches a morsel of food the point contracts while the body swallows the nutrient object simply by surrounding it. The finger returns and is fused with the body.

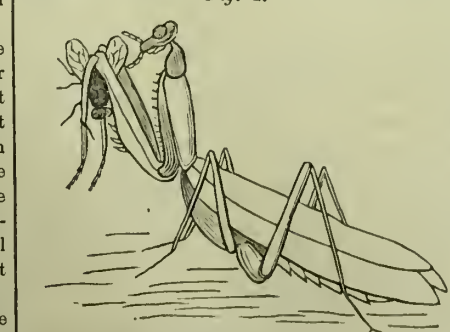
The palpi situated about the mouth of insects are dimly prophetic of hands. These creatures are endowed with one or more pairs of palpi, which like the movement of fingers, serve to direct food to the mouth. The dotted lines from B, in the figure, indicate two pairs of palpi of one of the beetles.

The cuttle fish, (*sepia*) possesses neither hand nor foot, but its organs of prehension are monster fingers which at once do the work of feet, arms, hands and fingers. They lay hold of an object never

to let go till it is crushed or consumed. The above sketch figures one of the arms, as it apparently springs from an adjacent eye. The elephant's trunk affords but a faint idea of a hand terminating with a single finger. It can turn the crank of a hand organ, and pick up a penny, but it cannot thread a needle. This member is to be classed with the palpi of insects, being an appendage to the mouth.

One of the next steps toward working out the problem of the hand is seen in the *Mantis*

Fig. 4.



religiosa which is enabled to capture its prey with its fore feet. This creature, like squirrel and bear, uses its fore feet so cleverly, we are led to suppose they could use hands much better if they had them.

A solid hand with its opposing thumb is outlined in the lobster's claw. It resembles a hand

in the same degree the mitten resembles the glove. This more complex though single member, answers the

Fig. 5. prehensil purpose of both feet above referred to. A hunter with his dog and a fish peddler with lobsters met.

They put the dog's tail under the lobster's thumb. The animals suddenly started off, one after the other, neither heeding the whistle of his owner to return. The lobster swiftly followed the quadruped home. It was nip and tuck. Tuck kept his length ahead; he betrayed emotion. Nip held his own.

We cannot strain the vision of our subject far enough to see a hand in the fore legs of the sand-wasp. But its motions when at work in digging are so adroit as to attract attention. With movements almost as rapid as their wings in flight, they will dig and throw a continuous spray of sand under the body and between the legs a distance of some three inches in the rear, similar to a dog when he digs for a squirrel.

The frog's foot reaches into the pattern of a

Fig. 6. hand quite perceptibly, lacking one finger to the hand. With one foot it will endeavor to brush a smarting drop of nitric acid from the skin of the opposite limb, even after decapitation,—which shows not all the presiding will force occupies the head. Each foot of the more perfected lizards

are endowed with the full number of five digits. At this stage of development the imagination is not taxed to perceive the palmated figure well asserted. But the thumb we

saw rough-hewed in the lobster, seems not to have kept pace with the rest of the hand. It was then individualized both as function and organ. In the lizard the organ is a kind of supernumerary, but without special function.

What a fund of meaning there is in the fact, as we find the model of the hand perfected in the monkey. It consummates an era in structural economy. Here nature appears to have

Fig. 8. made a pause, as if to shake hands over a great victory. She has now an index finger, with

which to point the prophecy of the future out-growing man. Long and devious was the route pursued. She seemed so elated with her success, and the achievement proved so handy, she tried to put one on each of the four extremities of all the monkey tribe; and being the best and latest thing of the kind—though hairy and rough—it was handed down the finishing grade of living mechanisms, to be bleached and polished in man.

Thus millions on millions of trial steps were made within the realm of creatures of lesser wants, ere the graceful hand of the human period was produced. A. S. HUDSON, M. D.

Oakland, Oct. 1872.

FUTURE COURSE OF AMERICAN TRADE.—To judge by the magnitude of our imports and exports we are entering on a career of unprecedented prosperity as a nation. Hitherto, though, our trade has lain chiefly in the direction of England and France. But the immense development of our manufactures and industrial resources will change the current of trade altogether. West of us we have a continent waiting for our manufactures. There in the future our trade must lie. But we must have an outlet for it, and to have it the trade uniting the two countries must be secured by a canal which shall unite the Atlantic with the Pacific, and which shall bring the remotest part of our territory within two months of China and Japan.

A REVOLUTION IN GAS.—The new portable safety gas light is the neatest thing we have seen, and is calculated to cause an entire revolution in the present system of lighting for domestic purposes. It generates its own gas which is consumed as soon as generated, thus rendering explosions impossible. It is certainly a desideratum long called for, and will be gladly welcomed by those who have lived in daily and hourly dread of injury from explosion of the various dangerous inflammable oils now in use.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING OCTOBER 1ST, 1872.*

STEAM-CONDENSER.—Washington R. Pitts and George K. Gluyas, S. F., Cal.

FRICTION-CLUTCH.—Timothy Stebins, S. F., Cal.

ROTARY PUMP.—Samuel A. West, S. F., Cal., and Louis Goodwin, Virginia City, Nevada.

CAR-COUPLING.—James Pearson, Sacramento, Cal.

TUYERE-TESTER.—Robert A. Fisher, Eureka, Cal.

SLAG-SPOUT FOR SMELTING-FURNACES.—Robert A. Fisher, Eureka, Nev.

SLAG-POT FOR USE IN SMELTING-FURNACES.—Robert A. Fisher, Eureka, Nevada.

ROASTING ORES.—Guido Kustel, S. F., Cal., and Friend W. Smith, Ellsworth, Nevada.

JOURNAL-BOX.—Jonathan S. McClure, Gold Hill, Nev.

BILLIARD-CUSHION.—John George Hermann Meyer, S. F., Cal.

APPARATUS FOR THE MANUFACTURE OF CUBE SUGAR.—August F. W. Partz, Oakland, Cal.

MANUFACTURE OF CUBE SUGAR.—August F. W. Partz, Oakland, Cal.

MANUFACTURE OF HARD SUGAR.—August F. W. Partz, Oakland, Cal.

INVALID BEDSTEAD.—Benjamin Pollard, Dutch Flat, Cal.

CULTIVATOR.—Andrew T. Sherwood, Amador, Cal.

APPARATUS FOR ENAMELING PHOTOGRAPHIC PICTURES.—Nathaniel Weston, S. F., Cal., Patent No. 72, 138, dated December 10, 1867.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Bee Keeping.

Why do not more of our city and suburban people keep bees, if only for the mere matter of money making? The best California honey in the comb in the market brings readily thirty cents a pound and ordinary strained honey from twelve to fifteen cents a pound. In no other country are bees more profitable than in California. It is nothing unusual to get from four to six hives from one in a single season by using the movable frame hive of either of our best inventors in this line.

There are very few countries on the globe, producing a greater diversity of excellent food for bees than are found here; and we have never heard of a single case of ill success in beekeeping in this State or Oregon, where anything like reasonable care was bestowed upon their culture. It is not so difficult a matter to manage bees as the uninitiated may suppose.

Almost any one with a half hour's explanation from an experienced apiarist, can obtain all the information necessary to become with a little practice a successful manager of bees. True, there is always something to learn in this as in other matters pertaining to the culture of animal life, and it is hardly to be supposed that a man of no practical experience will, in all that pertains to successful bee management be as skillful at first, as he who has made it his study; but what we would like to impress upon our readers is, that there is nothing difficult—no mystery connected with the successful management of bees and that no farm stock pays larger or sweeter dividends.

SAN DIEGO.—The Secretary of the Treasury has authorized the delivery of foreign merchandise at San Diego without first coming to this city as heretofore. The people of that town look upon this as an important step in their march of improvement and are much gratified in consequence. If patience and perseverance under difficulties are deserving of success then the people of San Diego surely merit it, since they have had disappointment after disappointment, have had to overcome the prejudices against the "lower country," and are just now beginning to progress in a satisfactory manner.

GRAINS OF SCIENCE.—A little out of our usual routine of agricultural and kindred subjects, we present our readers with an interesting article with the above heading, on the progress nature made in the original construction of the HAND. We think our judgment in the ready acceptance of the article, will be indorsed by our readers.

THE CALIFORNIA FARMERS' UNION ADDRESS is expected next week.



Welcome to Rain.

Drip, drip, drip, falls the rain—
The beautiful, life-giving rain—
It sparkles in diamonds
On every spray,
It joins with the brook
And goes rippling away
Through meadow, and valley, and plain,
'Till merged in the Ocean's blue main.

Drip, drip, drip, in the dust,
Comes Nature's beneficent trust;
Alike on the parson
Returning from church,
Alike on the beggar
Who stands at the porch,
And asks for a morsel of crust,
It falleth on "just and unjust."

Drip, drip, drip, it comes down,
Rejoicing the country and town;
The farmer sees in it
Broad acres of grain,
The merchant is silently
Counting his gain;
In nature there is not a frown,
For green is surplanting the brown.

Drip, drip, drip, now it pours!
Submerging all things out of doors,
The cup of the lily
Is full to the brim,
The owl in the tree-top
Sits sullen and grim,
As it hears the wind wake; now it soars
In solemn, lugubrious roars.

While drip, drip, falls the rain—
The joyous, frolicsome rain—
It sports with the diamonds
That hang on the spray;
It kisses the stream,
And goes laughing away;
Now flattered, bewildered, and vain,
Coquetting with all in its train.

Drip, drip, drip; now 'tis plain,
Convivial, turbulent rain
Is lost to decorum;
Borne on by the flood,
It waltzes in eddies,
It trails in the mud.
Bedragged through gutter and drain,
'Till cleansed in the Ocean's pure main.

Husbands, Read and Heed.

Why is it that husbands with wives who love them—whose first care, after duty to God, is to make them happy—wives who strive to make themselves, intellectually, worthy companions for the husbands they admire and respect, as well as love—whose highest ambition is to be true, Christian companions—why is it that these husbands, otherwise kind and affectionate, will, night after night, leave their homes, to seek the companionship of indifferent men in town, there idly discussing elections, etc., until twelve, one, two, three, yes, four o'clock in the morning, actually defrauding their wives of one of their holiest, most sacred rights?

O, could these husbands but see into the hearts of those they hold dearest; see the anxiety with which they watch for their coming as night draws near; the cruel suspense as hour after hour passes by, and no husband yet, until, finally, too sad for companionship with others, they seek their rooms, each there to ponder, again and again, "Why, why is it that I have not the attractions to call him home?" Could he thus see into her heart, would he so fill it with anguish for the husks of pleasure that he finds in town?

Is it a wonder that some women—yes, loving, affectionate wives—so cheated of their domestic happiness, should seek to indemnify themselves with the glittering promises of "Woman's Rightsism"? Others, keeping true to God-given principles, strive by affectionate remonstrances to win their husbands to them.

Husbands, you hold the power, while we your wives, your truest friends, can only plead and pray. May God hear my prayer, that he for whom this is written will read, feel, and amend.—*Moore's Rural.*

TEACH YOUR CHILDREN.—If children could be taught a few simple rules about avoiding drafts, changes from heavy to light clothing, sitting down in a cool room when perspiring freely, after exercise, and so forth, what vast amounts of money would be saved in doctor's bills. But such things are not taught to children, hence they are to be learned as adults later on in life, generally to their sorrow.

The Struggle for Gentility.

In all our great cities the rush for mental labor and sedentary pursuits, with the view to avoid manual toil, is tremendous. At whatever cost of self-abasement, the glittering bauble of gentility is sought for by American-born young, so that it may not be said, "He is only a common mechanic." They forget, or have never been taught, that the greatest men of the age have sprung from the workingmen. Eventual success in early life is a question of brains, not position. Let those in search of clerkships and other similar situations remember this great truth. Why should the badge of serfdom be assumed by those who choose to work where they are not really needed, in preference to where they are? By such a course, nobility of soul is sacrificed, and a recompense, at starvation rates, is accepted, in order that the sniveling mendicant may have the world say that he is engaged in a *respectable* vocation—one that exempts him from manual labor. Shame on such a false standard of public opinion!

The trouble is that more persons insist upon living by commercial pursuits, literature, or in some other way that involves but little manual effort, than can possibly find employment. They can only find it by taking it from some one else. Many succumb to the worst forms of vice, under the pressure of absolute want. They run into temptation, and make that temptation an excuse for pauperism and crime. Let the young men of this land get an education if they possibly can, but by all means let them learn a trade.

There is Light Beyond.

"When in Maderia," writes a traveler, "I set off one morning to reach the summit of a mountain, to gaze upon the distant scenes and enjoy the balmy air. I had a guide with me, and we had with difficulty ascended some thousand feet, when a thick mist was seen descending upon us, quite obscuring the whole face of the heavens. I thought I had no hope left but at once to retrace our steps or be lost; but as the cloud came nearer, and darkness overshadowed me, my guide ran on before me, penetrating the mist, and calling to me ever and anon, saying, 'Press on, master, press on! there's light beyond.' I did press on. In a few minutes the mist passed away, and I gazed upon a scene of transcendent beauty. All was bright and cloudless above, and beneath was the almost level mist, concealing the world below me, and glistening in the rays of the sun like a field of untrodden snow. There was nothing at that moment between me and the heavens." O ye over whom clouds are gathering, or who have sat beneath the shadow, be not dismayed if they rise before you. Press on. *There is light ahead.*

Habits.

Habits have more to do with our success in life, with our happiness or misery, than all other causes combined. By habits we mean all those manners of doing every day things which have become by practice so much a part of our character that we involuntarily fall into these manners, and only avoid them by an effort. A very important part, if not the most important part, of education consists in the formation of correct habits. Those things which we are to do all our lives it is of the first importance that we should learn to do well. Let us illustrate a little. It is as easy, in itself, to use one form of speech as another. Yet a form of speech once established, certain peculiarities of expression will, in spite of efforts to the contrary, slip from the organs, and our "speech betrayeth us." All our members act, as it were, independent of the mind, to a certain extent, after habits are formed. What was at first laborious becomes so easy as to be performed involuntarily, as far as the details are concerned. We do not think of our organs of speech in talking, nor of our pen or hand in rapid writing, nor of our feet in walking, but give a sort of general order to them to move, and they obey just as they have formed habits of obeying.

Our organs and members are so many servants to be taught to do our bidding. If they are expert, so much the better for us. If they are awkward, it is simply because they have not been properly trained.

NO INFLUENCE.—A man in a blouse once said, "I have no more influence than a farthing rushlight." "Well," was the reply, "a farthing rushlight can do a good deal; it can set a haystack on fire; it can burn down a house; yea, more, it will enable a poor creature to read a chapter in God's book. Go your way, friend; let your rushlight so shine before men, that others seeing your good works may glorify your Father which is in heaven."

Stop My Paper.

Every publisher of a newspaper has heard this tremendous order from offended subscribers, imagined by the offended to be as dangerous as strokes of lightning, but in reality more harmless than a mosquito bite. A good story is told by the *Philadelphia Post*, of Mr. Swain, the former proprietor of the daily *Ledger*. By his course on some public question, on which different persons had different opinions, Mr. Swain had offended a number of readers, one of whom met him on Chestnut street, and thus accosted him.

"Mr. Swain, I've stopped the *Ledger*."

"What is that, sir?"

"I've stopped the *Ledger*," was the stern reply.

"Is it possible?" said Mr. Swain, "my dear sir, what do you mean? Come with me to the office." And, taking the man with him, he entered the office at Third and Chestnut streets. There they found the clerks busy at their desks; then they ascended to the editorial rooms and composing rooms, where everything was going on as usual; finally they descended to the press rooms, where the engines were at work.

"I thought you told me you had stopped the *Ledger*," said Mr. Swain.

"So I have," said the offended subscriber.

"I don't see the stoppage. The *Ledger* seems to be going on."

"Oh! I mean to say—that is, that I—ah—had stopped taking it."

"Is that all?" exclaimed Mr. Swain, "Why, my dear sir, you don't know how you alarmed me."

FOLLOWING THE FASHION.—How attentively, and with what prurient eagerness, the fair sex adorn themselves after the fashion of the day. The greater the absurdity of dress, the more gigantic the innovation, and the greater conspicuousness involved, the more fervent the desire to adopt it. One and all follow with a rapidity as incredible as amazing. Should the adoption of the dress have a ludicrous effect, verily the more precise its observance. Compare the dress of a young lady nowadays with that of one twenty years ago. What a remarkable change! Bonnets as now worn are simply strips of ribbon, bristling with variegated flowers and artificial ornaments, devoid of use. If it were not for the abundant profusion of hair with which the fair ladies are favored we are disposed to think that their liability to take cold would be considerably increased, as the article on which they bestow the title of bonnet is a most inadequate covering for the head. Of course we are aware there are wheels within wheels. In like manner there is hair beneath hair—or some other material to represent it—though it is not at all necessary the former should have been planted, nourished and perfected upon the same cranium as the latter. The rule is the reverse. Perhaps this internal substitute obviates the necessity of conforming with usage and wearing a covering for the head. As for hats, they are not made to wear on the head, but on the hair. Size is immaterial. In some instances they are affixed upon the hair in a nearly perpendicular position. Perhaps we are in error. It may be the shape of the lady's head which involves the unnatural position in which the ornament is placed. The absurdity exhibited by ladies in their style of dress is apparently illimitable. Nothing is too outrageous to appear in, if it be authorized by fashion.—*Tinsley's Magazine.*

EFFEMINATE MEN.—The effeminate man, say *Figaro*, is a weak pontice. He is a cross between table beer and ginger-pop, with the cork left out; a fresh water mermaid found in a cow-pasture, with her hands filled with dandelions. He is a teacup full of syllabub; a kitten in trowsers; a sick monkey with a blonde moustache. He is a vine without any tendrils; a fly drowned in oil; a paper kite in a dead calm. He lives like a butterfly—nobody can tell why. He is as harmless as a pennyworth of sugar candy, and as useless as a shirt-button without a hole. He is as lazy as a slug, and has no more hope than a last year's summer fly. He goes through life on tiptoe, and dies like cologne water spilt over the ground.

To interest, without exciting—to instruct, without offending—to please, without flattering—to be cheerful, yet grave—and humorous, without descending into buffoonery—are the prime requisites of a public instructor.

SIX or eight foreign diplomats at Washington are married to American wives.

Young Folks' Column.

The Boy that Stuck to Farming.

When I was a boy, says a distinguished man, my first saving of ten-cent pieces, earned by Saturday afternoon work—for school kept half a day on Saturday then—were expended in buying a heifer-calf. Then I worked on, and paid my father a certain sum each month for keeping. When the calf was one year old, I traded it for two steer-calves, and now had to put in good and strong to pay for their keeping; but I occupied all my spare time in teaching these calves to work in the yoke, and at one year old they would gee and haw as well as old oxen, and my father paid me for their use in leading the team for breaking his two and three-year-olds. Again, I had a piece of ground each year, after I was fourteen, that I could plant and work on shares; and, if I wanted help, why I had to give two days of my time to the hired man's one day. I grew just what my fancy and reading dictated, and from the proceeds I dressed as well as any of the boys at the present time. I always had some time to play, time to read, and now look back, with love and pleasant thoughts, to the old farm, and the farm-hand who taught me to use tools, and whipped me when I neglected to drive the team out straight at the end of the furrow in plowing. The remembrance of my boyhood has always induced me to favor all items of encouragement at home on the farm; and I believe, if it were more generally practiced, we should have more good farmers, and less broken-down merchants, or loafing, hanging-on, time-serving clerks, ready for anything except honorable labor and usefulness.

The Rhyming Game.

One person thinks of a word, and gives a word that will rhyme with it. The players, while endeavoring to guess the word, think of those that will rhyme with the one given, and instead of speaking, define them. Then the first person must be quick in guessing what is meant by the description, and answers whether it is right or not, giving the definition to the question. Here are two examples:

"I have a word that rhymes with bun."

"Is it what many people call sport or merriment?"

"No, it is not fun."

"Is it a troublesome creditor?"

"No, it is not a dun."

"Is it a kind of fire-arm?"

"No, it is not a gun."

"Is it a religious woman who lives in retirement?"

"No, it is not a nun."

"Is it the act of moving very swiftly, or what one does when in great haste?"

"No, it is not to run."

"Is it a quibble or play upon words?"

"No, it is not a pun."

"Is it a word that we often use to denote that a thing is finished?"

"No, it is not done."

"Is it a weight?"

"No, it is not a ton."

"Well, is it that luminary that shines by day, and brightens everything it shines upon?"

"Yes, it is the sun."

The one who guesses the word will then, perhaps, say—

"I've thought of a word that rhymes with sane."

"Is it a native of Denmark?"

"No, it is not a Dane."

"Is it used by an old gentleman?"

"No, it is not a cane."

GEOGRAPHICAL PUZZLE.—For breakfast take a cape of Massachusetts and let it soak all night; then shred up fine and cook in a river in Montana. This and some harbors of New Jersey will be the principal warm dishes. Some may like with these a river of Vermont, sliced very thin and well seasoned. It will be necessary to go to a mountain in Washington Territory for an indispensable article of food, and five-eighths of a little town in Wisconsin, well stewed, without scorching, will be sufficient in the way of fruit. Such a breakfast may be very cheerful if every one politely gets upon a cape of North Carolina to see that each is well helped and cared for.

THE GOLDEN RULE is a very old one, but it is not the less a good one for children to follow.

A NOBLE heart, like the sun, shows its greatest countenance in its lowest estate.

DOMESTIC ECONOMY.

Fattening Geese for their Livers.

Description of the Cramming Process.

There are three places in France where the famous goose-liver-pasture are produced, to wit., Toulouse, Nérac and Strasburg. The Nérac tureen, however, is made of the liver of the musk-duck.

Strasburg claims the honor of the first invention of this delicate dish. A certain Mathieu, cook of Cardinal Rohan, Prince Bishop of Strasburg, passed for a long time for the original inventor of the fat goose-liver pasty. The honor of the invention is actually due, however, to the famous Marshal de Saxe's cook, Close. When the Marshal, who had been the King's Lieutenant, in Alsace for several years, left Strasburg, Close, declining to enter the service of his successor, Marshal de Stainville, established himself as a pastry cook in Strasburg. He married Mathieu's widow, and started the goose-liver tureen business in a small shop in the Meisengasse, where the business is said to have been conducted to the present day.

The fattening of geese for the tureen is now carried on in Strasburg very extensively. It is chiefly in the hands of women. It is almost entirely confined to the winter season. The fatteners or "crammers" buy their birds late in autumn, either lean or half-fattened. Young, well formed geese are selected in preference. Some crammers, however, will also take older birds. In some establishments the geese are fed first, for several weeks, with broad beans, and only during the last eight or ten days with maize; but most of the Strasburg geese-crammers prefer feeding their birds with maize from the beginning.

The unhappy birds are confined in narrow cages, with just sufficient room for a movement forward or backward to the extent of a few inches, but altogether precluding the possibility of turning round. The cage has a narrow opening in front, through which the bird can put its head to drink, a vessel of water being placed before it. Most crammers put a lump of charcoal into the water to insure its purity; others do not deem this precaution necessary, and rely simply upon frequently changing the water. Great attention is paid to the cleanliness of the cage. Most crammers keep the birds in cellars and dark places only, caged up as close as possible during their three or four weeks martyrdom; but some follow a more humane method, allowing their birds the enjoyment of the light of day, and a little freedom of motion. We have been assured, and we have certainly had occasion also to judge for ourselves, that these trifling indulgences granted to the poor bird do not act so adversely upon the development of the liver as is usually urged in explanation and excuse of the more cruel system.

In the actual cramming process, the maize is soaked in warm water with a little salt in it; or, it is parboiled in water seasoned with a little salt.

The cramming is performed twice or three times a day; the greater or less frequency of feeding depends upon the more or less rapid digestion of the bird.

The poor goose is dragged forth for the purpose from its narrow cage by the feeder, who places it firmly between her knees, opens the beak with one hand, and crams the softened maize down the gullet with the other. Expert crammers simply push the food down with the fingers. The less skilful hands generally use a funnel for the purpose, with a smooth-wood or ivory stick to expedite the descent of the food. Some give their birds, instead of maize, or alternately with it, balls made of potato flour and barley meal.

When the bird has had enough, in the judgment of the feeder, it is thrust back into its living tomb and left to digest, in hopeless immobility, its forced gorging, till its turn comes round again for another repetition of the same unnatural act in the same sad drama of suffering.

It usually takes from a fortnight to three or four weeks to cram a goose up to the proper "sticking" or throat cutting point.

In the last stage of the process, the unhappy goose may be said literally to sweat fat through the pores of its body; its cellular tissue, its intestines, its blood, nay, even its evacuations, are absolutely loaded with fat. As regards the item, we were witness, quite accidentally, to a certain process of melting which, as we afterwards learned, is known to be very common with Strasburg goose crammers, laudably determined upon losing no part of the proceeds of their industry; but which made us, with foolish prejudice against unclean things, register a vow against eating goose-fat, unless melted and rendered under our own personal supervision.

Under the unnatural treatment, the liver of the bird swells to an enormous size, attaining a weight of one or two, and, in some rare exceptional cases, even three pounds. In the last stage of the fattening process the crammer has to be very watchful and careful of her birds, as cases of apoplexy are by no means rare. An unlucky blow or a hard squeeze will sometimes suffice to bring the unhappy bird's life to an untimely end. We are told by a crammer who passes for one of the most expert in her business in Strasburg, that she has literally to watch the bird's eyes for symptoms threatening a premature end. If a goose is permitted to fall a victim to apoplexy instead of the knife, the loss to the feeder is rather serious, as the liver of the dear bird, filled with dark-colored blood, is held to be of no use to the pastry cook. We have been told, indeed, that a use is found for even these dark livers; they are boiled, then minced fine, squeezed through a tammy, and mixed with goose-fat, to serve as lining for the tureen. But, of course, they fetch only a very low price.

When the crammer thinks the time has come for poor fat goosey, the knife puts an end to its miserable life.

The dead bird is properly drawn, the liver being left intact inside, as this most important part must first acquire the necessary degree of firmness before it can be taken out. To this end the carcass is kept hanging for twenty-four hours in a cold and airy place; after which the liver is most carefully removed, so that no scratch or other blemish may be found on it. A fine liver must look a nice white salmon or cream color. We saw five superior livers at one crammer's, four at another, and nine at a third place—all of them remarkably fine looking and of large size, averaging from one and a half to two pounds each in weight. These all had come from small birds, weighing when drawn six or seven pounds only.

These birds had been fed three weeks, on an average twice a day, entirely with parboiled maize; the total quantity of Indian corn consumed in the progress averaging some twenty quarts per bird.

The livers are neatly wrapped in a wet muslin or fine linen cloth, to be taken to the pastry cook, who pays for them according to size and quality. The pastry-cook seasons and spices the raw liver, after which he places it in the tureen along with truffles and other ingredients. The dearest tureens generally contain only one large liver, while the less expensive contain two or several small livers. We were shown a tureen in Meisengasse, with an exceptionally large fine liver in it, which we were told weighed three pounds and one ounce; for this article the proprietor got the small sum of £2 10s. The article went to General Fransecky, commander of the military district of Alsace-Lorraine. So the pastryman, who ostentatiously professed strong philo-French predilections, might, in addition to the handsome prices netted by him, rejoice also in the patriotic hope of giving the hated German general a dyspeptic fit. When the contents of the tureen have been duly baked, a layer of fresh hog's lard is poured over the mass, to keep it from contact with the air.

It is calculated that the amount of money which the Strasburg pastry-cooks net annually by the sale of goose-liver tureens reaches very nearly £100,000 sterling.—*Morning Call*.

SUGGESTIONS ABOUT COOKING VEGETABLES.—It may not come amiss to some young housekeepers to read the following practical hints from a correspondent of the *Maine Farmer*:

Peas and beans cooked in hard water containing lime or gypsum, will not boil tender, because these substances harden the vegetable casein. Green peas, string beans and cabbage should be put into boiling water, and their color will not be changed. Green corn (that dish that in its season puts us into such an ungraceful attitude, and makes over-nice people feel so awkward) can be kept for winter use, a neighbor tell us, by boiling slightly, cutting from the cob, and drying quickly in the oven. Remove from the oven into a bag and hang it behind the stove. When wanted for use, soak over night, and cook a few minutes in milk. Some one last year recommended packing it in salt. I used table salt. The hulls moulded badly, but the corn tasted perfectly sweet. I hope this will meet the eye of the contributor, and from her experience and judgment I hope to learn where in I erred in this particular.

SPURIOUS SYRUPS.—Chemistry has fairly got the advantage of the sugar maker in the manufacturing of syrups, which are now largely made from starch. Much of the syrup now sold, especially in the Eastern States and Europe, does not contain a particle of the product of the cane, and it may be interesting to some of our readers to learn that this spurious syrup may be detected by a very simple method, as follows: Dissolve a teaspoonful of syrup in a wine glass of rain water; then add a few grains of tannic acid, when it will turn as black as ink if the article is spurious. If not convenient to procure, make a cup of strong tea (which contains tannin) and add a teaspoonful of syrup, and a fair quantity of ink will appear. The pure cane syrup will mix with the fluid without producing any chemical changes on the addition of the tannic acid. Adulteration is everywhere, and at the rate we are drifting now, it will not be long before it will be impossible to procure any article in common use in a pure state.

TOMATO SAUCE.—The following recipe comes all the way from Australia: Take forty pounds of tomatoes, wipe clean, and boil or bake till soft; then squeeze through a sieve that will retain the seeds and skins. Boil for an hour, in order to get rid of some of the watery portion, and then add half a gallon of best brown vinegar, 1½ lbs. salt, 2 oz. cloves, 3 oz. allspice, 2 oz. cayenne pepper, 3 lbs. white sugar, 4 oz. garlic and 2 oz. black pepper. Boil a sufficient time; two hours will usually suffice, but the sauce will not be boiled enough until it has become tolerably thick, and all the watery appearance has gone. Bottle without straining in perfectly dry bottles, and cork them securely when cold. The garlic must be peeled, bruised, and tied up in a bag; all the spice must be ground; the quantities may be increased or diminished according to taste. We have kept sauce made from this receipt three years.

TO PICKLE ONIONS.—Scald one gallon of small onions in salt and water, of the strength to bear up an egg. Only just let them boil, strain them off, and peel them after they are scalded; place them in a pan, and cover them with best cold vinegar. The next day pour the vinegar off, add two ounces of bruised ginger, one ounce of white pepper, two ounces of flour of mustard, two ounces of white mustard seed, half an ounce of chilies; boil them twenty minutes; turn all together, boiling hot to the onions; let them remain ten days; turn the vinegar out again; boil it as before, turn it hot on the onions again, and they will be ready for use as soon as they are cold.

PORTABLE LEMONADE.—Tartaric acid one ounce, loaf sugar six ounces, essence of lemon one drachm. Powder the tartaric acid and the sugar very fine in a marble mortar, mix them together, and pour the essence of lemon upon them by a few drops at a time, stirring the mixture after each addition, till the whole is added; then mix them thoroughly, and divide the powder into twenty-four equal parts, wrapping each up separately in a piece of white paper. When wanted for use dissolve the powder in a tumbler of cold water.

ADULTERATED CREAM OF TARTAR.—It may be important to housekeepers to know that cream of tartar is sometimes adulterated with powdered gypsum, to the extent of 25 per cent. or more, and that this swindle may be easily detected, as pure cream of tartar is soluble in hot water, while gypsum is nearly insoluble. Therefore, if half a teaspoonful of the suspected article is put into a tumbler, and hot water poured over it, it will leave a white sediment if it contains gypsum, but will be totally dissolved if pure.

A New Motor for Sewing Machines.

For several years it has been the aim of a large class of inventors to devise a simple, cheap and convenient motive power for a sewing machine, and thus do away with the difficult and injurious treadle movement by which these machines have always been run. The great need of such a power has called out a large number of applications for this purpose, amongst which we have noticed several methods of applying spring power. In a number of cases weights have been proposed. Quite a number of electro-magnetic motors have been invented, patented and tested, amongst which the most notable of which we have any account is the one patented by Stevens & Hendy, of this city, in which the needle arm of the machine was driven directly from the armatures of the electro-magnets, without the intervention of a wheel or gear. Water engines have also been suggested, and in several instances applied for this purpose, but none of the many devices suggested seems to have combined the necessary degree of simplicity, economy and convenience, that the subject demanded by reason of their not having been generally adopted. We next find the inventive talent directed towards improving the treadle, so as to avoid the injurious movement of the ordinary treadle, and quite a number of ingenious arrangements have been presented.

But, notwithstanding, so many efforts, it remained for an Oakland mechanic and inventor to suggest what to us seems the most simple, economical and practical power yet presented for this purpose. We refer to Isaac Hyde's application of an ordinary water wheel for driving a sewing machine. As at present constructed an ordinary hurdy-gurdy wheel, about twelve inches in diameter, is used. The ordinary driving shaft of the sewing machine is extended to one end of the table, and the wheel is secured upon this extended shaft, a neat case encloses the wheel, and the water for driving the wheel is supplied through a pipe or hose which leads from the water pipes, which convey water through the house and is delivered upon the wheel through a nozzle of extremely small diameter. The water after being used is conveyed through another hose or pipe to any convenient receptacle, where it can be stored for various household uses. The pipe through which the water is conducted to the wheel passes along under the machine near the ordinary treadle shaft, and a cock is arranged upon it which is operated by a treadle, so that the operator can, by a simple movement of the foot, admit or shut off the water at pleasure. A recent test of the amount of water required to drive the machine with a wheel of this description showed that three quarts per minute, under the pressure in our city pipes, could run the wheel at 900 revolutions per minute. The attachment is very neat in appearance, and in no way complicates the operation or movements of the machine. The patent for this invention was procured through the MINING AND SCIENTIFIC PRESS Patent Agency, and has been assigned to Oscar J. Backus, of Geo. H. Tay & Co., of this city, to whom all communications should be addressed.

FLORICULTURE.

Everlasting Flowers.

The immortelles of the East, (*Helichrysum orientales*). This plant, a native of Asia, has been known in Europe since 1629, but was only first cultivated in gardens about 1815. Its flowers, the symbols of friendship, or tribute to talent and genius, serve to make the garlands of immortelles which ornament the tombs of the dead in Roman Catholic countries. It is cultivated in France, in the communes of Lower Provence, where the soil slopes towards the Mediterranean. It succeeds very well in the slopes of Bandols and the Ciotat, which are exposed to the south and enclosed by walls of stone. It blossoms about the month of June. It suffers from heavy and continuous rains and strong dews, and only vegetates well on light soils, stony and permeable. It is propagated by offsets, which are separated from the old stocks. The gathering of the flowers is made in the first days of June, before the bursting of the buds. As the flowers which are insufficiently formed or too full blown are rejected by the trade, it is important not to cut the stems either too soon or too late. The collection is made by women, who tie them in small bundles, which are ordinarily dried on the walls of the enclosure. Finally, young girls are employed to remove the down which covers the ramifications. A kilogramme by weight of these plants contains about 400 stems, each one containing about 20 flowers. Each growing tuft of immortelles produces 60 or 70 stems, bearing from 20 to 30 flowers. A hectare will contain 40,000 tufts, producing annually 2,400,000 to 2,800,000 stems, yielding 16,000 to 20,000 bundles, or 5,000 to 6,000 kilogrammes in weight of immortelles. A piece of ground well laid out and attended to will produce for eight or ten years. The flowers are sold in packets or by weight. The bundle sells at 1½d. to 3d.; the 100 kilogrammes for from 30 to 45 francs. The immortelles are sent off in cases containing 100 bunches or packages systematically arranged. They are sometimes sold dyed black, green, or crimson red. The last shade is very handsome, and most in vogue in the southern countries. It is obtained by a solution of borax. The natural flowers and those dyed black are used for coronals for tombs. Those dyed crimson or green are associated with natural flowers in bouquets, or worn at the button-hole.—*Gustave Henge*.

A PRETTY WAY TO TRAIN FUCHIAS.—When a slip has grown six or eight inches high, nip out the top down to the last set of leaves. It will then throw out branches on each side. Let these grow eight or ten inches, then nip them out as before; the tops of each branch, when grown the same height as the others, nip out again. Then procure a stick the size of your finger, eighteen inches in length; take a hoopskirt wire, twine back and forth alternately through holes made in the stick equal distances apart; place this firmly in the pot back of the plant, tie the branches to it, and you will have, when in flower, a beautiful and very graceful plant. Having one trained in that way last season, it was the admiration of all who saw it.—*Small Fruit Recorder*.

THE DIADEM PINK.—No flower novelty introduced in the past ten years has given so much delight as the diadem pink. At first some trouble was experienced from mixed seeds, and sports untrue to name, but now propagators have obtained a strain of true character, and the bloom of perfect plants is unequalled for its brilliancy by any other plant in the bower garden. The diadem pink is a flower that is so eminently worthy of culture in every garden, we can recommend it for general trial. With us it has done exceedingly well on light, warm soil. They will bear considerable manure, applied well rotted in either the fall or spring. The same treatment given to sweet-williams will produce good blooms of this also.—*Ex*.

PETUNIAS.—If I could have but one kind of flowers, it should be Petunias, said an eminent florist. Seed sown in the open ground in May will produce flowering plants in June that will make a brilliant bed through the summer and autumn. The blotched and striped is the most showy variety. Sow the seed thinly in a seed bed, covering with fine soil, and when the plants are an inch or more high transplant eighteen inches apart into rich soil, and they will completely cover the ground in a short time.

CHARCOAL FOR FLOWERS.—If flowers do not mature well, they may be made to do so by placing half an inch of powdered charcoal on the earth in the pot. Another authority asserts that a solution or suspension of white hellebore in water may be used with great advantage in destroying the insects that infest so many flowering plants. A fair friend has tried the experiment with success, and reports that if the bugs sneezed as she did, it was no wonder that they lost their lives.

FLOWERS AND MOSSES.—Forty different species of wild violets are found east of the Mississippi. In North America there are said to be one hundred and thirty species of asters, and ninety species of the golden rod. Of mosses there are nearly one thousand different species in the world, and of the beautiful feather mosses alone there are over fifty species.

AGRICULTURAL NOTES.

CALIFORNIA.

AMADOR.

Ledger, Oct. 26: STOCK IN THE MOUNTAINS.—We are under obligations to Mr. A. M. Hardy, of Silver Lake in this county, for a statistical statement of the number of different kinds of stock now being pastured in the mountains between Antelope Springs and the Carson Cañon. We condense his statement and find that there are 70,100 head of sheep; 4,128 head of cattle, and 462 head of horses. Now, for this "nick of the woods," we consider the above a very flattering showing, and could we have a similar statement from other portions of the county, we think Amador would stand pretty well in the stock market.

CALAVERAS.

Citizen, Oct. 26: THE WINE INTEREST.—The aggregate amount of the grape vintage of the State this year will be about 7,000,000 gallons. In Los Angeles the crop is better than last year, but in Sonoma and some of the northern districts the vineyards are backward. A lack of oaken casks has been felt this season, and many vineyard men were obliged to take redwood casks, which are not strong enough for shipping. Our native wines are receiving increased attention at the east and in Europe; and the wine interest promises to grow in importance every year.

CONTRA COSTA.

Gazette, October 26:—AN INVENTION.—The daily Liverpool wheat quotations published by the press as received by cable having been shown to be ten pence, or thereabouts, below the actual rates for California wheat in that market, the parties sending the false quotations having been driven to invention to account for the discrepancy between the rates they have sent and those given by the *Mark Lane Express*. They claim now that the higher quotations of the journal named are for "California Club" wheat, which is a sheer invention, as there is no distinct variety that can be so designated, and the fact is, any clean, sound, white California wheat, will command the highest rates in the English markets.

ENGLAND'S WHEAT DEFICIENCY.—H. Kains-Jackson, who is regarded as high authority in such matters, estimates that England will be obliged to import from eighty to ninety million bushels of wheat before another harvest; and calculates that she will be able to draw ten million bushels from California, twenty million bushels from the Atlantic seaboard of the United States, eight million bushels from Russia, sixteen million from Germany, the same amount from France, twelve million bushels from Turkey, Egypt and Spain, four million from Canada and twelve million from other countries. This calculation for supplies, is some ten million bushels in excess of her requirements, and may exceed the ability of the countries upon which dependence is placed; though in the case of California, if they will send us the ships, we will fill them to the measure of one half more than the amount we are set down for in the calculation of Mr. Kains-Jackson.

FRESNO.

Expositor, Oct. 24: WOOL AT FRESNO.—The immense amount of wool now being sent to the railroad station at that point, is astonishing to visitors. The oldest resident of our county having but little idea of its immense and valuable resources are astonished at the immensity and value of its exports, the first exclamation made by him, in pleasurable surprise is: "Is it possible that all this is the product of Fresno county?" The cause assigned for its segregation at that point and delay of its transportation to market is that all available freight cars are now being used at all points on the line, transporting the immense grain yield of our country, to the Bay for shipment and exportation.

PRACTICAL DEMONSTRATION IN GROWING COTTON AT CENTERVILLE.—We have frequently mentioned the cotton crop of Mr. C. Davis, situated near Centerville, while in progress of culture. At this time Mr. Davis is actively engaged in gathering this valuable crop, and further furnishes practical evidence that cotton can be produced in that region. The present situation of the crop furnishes many evidences that may not be seen at other times, and it would be well for parties contemplating to grow cotton to inspect the crop at this time. The field presents the appearance of snow banks. As the gatherers leave the cotton in piles in the field, which presents a rather beautiful sight, especially in the evening.

MERCED.

Tribune, Oct. 26: WHEAT.—Wheat continues to be forwarded in large quantities from this point. On Wednesday last, one thousand tons were shipped by rail from the district embraced between the Merced and Stanislaus rivers. The warehouses are filling up rapidly. I. Friedlander's warehouse at this point contains over 8,000 tons, and Simon, Jacobs & Co. have a large quantity in their building.

WOOL.—The freight depot presents an unusually busy appearance. The platforms all around are covered with bales of wool, awaiting transportation below, and the interior of the depot is filled with miscellaneous freight for Mariposa. The activity and bustle of the forwarders and freighters remind us of the palmy days of "prairie schooners."

MONTEREY.

Democrat, Oct. 26: AN ITEM OF INTEREST.—A

party of Indians from the Tulare country arrived here during the week, and camping on the sea shore, have been engaged in fishing and collecting aulon shells. Their appearance is very suggestive, carrying the mind back to ages when "Lo the poor Indian" was "Monarch of all he surveyed" and revelled *ad libitum* on the shell-fish with which these waters then abounded. No doubt this party is brought here by a tradition, carried by the Indians to the Sierras as they retired before the white man, of the profusion of food to be obtained along the shores of this bay—by their old squaws now gathering pine nuts next the Sierra snow, its waters must be described as the veritable happy hunting grounds.

We were shown the other day, at the store of Meyer & Friedlander, in this place, a sack of one hundred and one potatoes, which weighed one hundred and thirteen pounds. This is over a pound to each potato. They were raised on the place of W. J. Connor, near town, and in the line of "spuds" beat anything which ever came under our notice.

Index, Oct. 26: PRODUCTIVE SOIL.—A farm of about a hundred acres, situated three miles beyond Natividad, on the road to San Juan, and owned by Mr. James Houston, yielded this year thirty-nine sacks of wheat to the acre, each sack weighing 108 pounds. A sack of potatoes was exhibited in a store of Salinas City, containing 101 potatoes, which weighed 113 pounds. There is still plenty of unoccupied land in Monterey county, at reasonable prices, inviting the occupancy of the frugal and industrious settler.

NEVADA.

Union, Oct. 25: RETURNING HERDS.—The cattle and sheep driven to the mountain pastures last Spring, are returning to the plains. The quadrupeds look fat and are frisky. The mountain grasses have agreed with them and have made good beef and mutton for the lowland people to eat. The flight of cattle to the lowlands betokens Winter as much as the flight of wild geese southward.

A GOOD LEDGE.—The *Transcript* of yesterday says: John Schmidt owns a quartz ledge on Wood's Ravine, which for more than a year himself and his two boys have worked with little other help, and at little expense. He raises grapes on top of the ground, and gets gold below the roots of his vines. They have taken out considerable money, and have now a fine ledge of quartz, which pays fifty dollars per ton. He has taken out at times several hundred dollars in a day.

Republican, Oct. 25: RAIN AND SNOW.—A slight rain fell here last night, scarcely enough to confine the dust to terra firma. On the more elevated portions of the summit of the Sierras, a thin covering of snow was visible this forenoon, but disappeared in the course of the day.

SCARCITY OF HELP.—Labor, skilled and unskilled, is scarcer in Truckee now than it has been at any time this season. It was supposed after the harvests in the great valleys of the State had been secured, that laborers would naturally drift to this section, but thus far such has not been the case. The building of two new steamers at Tahoe has taken every spare man from this vicinity who can handle a jack plane or a crowbar. The mill men complain of difficulty in obtaining men to work in their mills, to drive teams and to cut timber.

LANDSCAPE VIEWS IN THE SIERRAS.—Bierstadt, the distinguished landscape artist, has been engaged for nearly a year in painting a view of Donner Lake and vicinity. The sketch is taken from an elevated point one mile from the Summit Hotel, and overlooks Donner and several other smaller lakes. The painting is six feet by ten in size. When completed it is to be the property of a well known citizen of Sacramento. Bierstadt left Truckee this morning for Tahoe, where he will remain for a week or more, sketching scenery around the lake. This is the best season of the year for obtaining sketches of landscapes, as the foliage of the forest display to the eye of the artist its varied and richest hues.

SANTA CLARA.

Mercury, Oct. 24: FRUIT FOR THE EAST.—Mr. L. A. Gould, of Santa Clara, on Monday, shipped another car-load of fruit East, consigned to J. C. Tyler, of Boston, Massachusetts. During the present season, Mr. Gould has done quite a lively business with the Eastern market, having shipped many car loads by rail with profit to himself, and satisfaction to his consignees. The fruit in each and every instance reaches its destination in perfect condition. At first there was some spoiled, on account of breaking bulk, and transferring *en route*, but arrangements were soon made to obviate such transfer, and our Santa Clara fruit now reaches the astonished inhabitants of the Atlantic slope in all its magnificent perfection.

TEHAMA.

Independent, Oct. 26: ANGORA GOATS.—A. G. Toomes has purchased one hundred and fifty-nine head of Angora goats, and will try the experiment of raising wool in this county. The goats are a fine lot, being of very high grades, and the number will be increased as soon as Mr. Toomes can purchase more. We wish him success in his new business.

SINCE last Saturday almost a continual string of wild geese and ducks have passed over this town. Quite a number have been shot by hunters.

LARGE SALMON.—One day last week Geo. Molin caught a salmon in Mill creek that weighed over forty pounds. This is the largest salmon ever caught in this part of the State.

PLACER.

Stars and Stripes, Oct. 12: A CHALLENGE TO

ALL VINE-GROWERS.—Last Saturday we gathered from a single grape-branch in Barnhart's vineyard two bunches of grapes, growing side by side and touching each other, and the one weighed forty-four, and the other thirty-five ounces; total, seventy-nine ounces from a branch of California grape that was grafted into a foreign stock on the 12th day of last March. Dating from the day of grafting—March 12th—to that of gathering—October 5th—we have seventy-nine ounces of luscious, ripe grapes, produced from a single graft in less than seven months. Is there anything in the chronicles of grape culture that will beat this?

YUBA.

Appeal Oct. 26: WOOL.—The season for fall wool is drawing to a close. Prices, inferior to choice, are 14 to 20 cents. A large share of the wool purchased here this fall is more or less depreciated by its bad condition. Growers should realize the fact that the general clip is depreciated by burrs and other defects from 3 to 6 cents per pound, and those wishing to realize the highest price must give this matter their attention, i. e., pasture their flocks in ranges clear of burrs and other things which attach to the wool on the sheep. Sheep after fall shearing which are grazed on burry ranges gather them, and then every spring the fleece is depreciated.

ORANGES.—All the orange trees in the city are well loaded at the present time with fruit. The trees hitherto bearing are quite prolific, while a number of new ones bear for the first time. Among the latter is the tree of McGowan, on E street, which presents the largest oranges we have seen. This tree is 15 or 16 years of age, and was raised from the seed by a lady deceased 10 or 12 years ago.

LATE PEACHES.—The valleys raise the earliest peaches but the mountains produce the latest varieties, if not the best. We were assured of the truth of this statement yesterday by sampling a few cling-stones sent to Sheriff Woods by James West from the orchard of O. P. Morrill, at Strawberry Valley.

COOL.—A stiff southeaster prevailed yesterday, and the air was winter-like—signs indicative of a shower.

AN IMMENSE HORSE.—William Coates, of Sutter County, exhibited a large horse yesterday on the corner of D and Third streets. The animal is a bright bay, 5 years old, 18 hands and 2½ inches high, and weighs 1,700 pounds. He is a monster—perfectly elephantine in proportions.

TURKEYS are coming into market in good quantities, and yesterday were bringing 17 cents per pound from the wagon. They are likely to advance a little between this and the holidays.

BEAUTIFUL DUCKS.—T. J. Nutter has received by express from Los Angeles, a lot of snow white ducks, which are but little smaller than the common grouse. They are a foreign variety, but we did not learn their name.

Tree Planting.

The time is approaching for planting trees, and we hope we may have a favorable season for this most important part of the work of the farmer in this State.

In 1868 our Legislature appreciating the importance of improving and beautifying our country by lining our public highways with growing trees, passed an Act allowing the Boards of Supervisors of the several counties, to offer bounties for the purpose of encouraging land owners in their counties to plant trees along the public roads, crossing or bounding their lands.

This Act has been as a dead letter for want of action by these officers. The State Board of Agriculture have very wisely determined, if possible, to put the law into operation, and we most sincerely hope the Supervisors of all the counties in the State, and most certainly all those in the Valley counties, will co-operate with them, and place upon their records the necessary orders. And we hope all public-spirited citizens of the several counties will urge such action both upon the Supervisors and then upon all who own land, to plant the trees.

The Board of Agriculture has issued the following circular:

ROOMS OF CAL. STATE BOARD OF AGRICULTURE, SACRAMENTO, Oct. 20th, 1872.
To the Board of Supervisors of the County of _____
GENTLEMEN—I am directed by the State Board of Agriculture to call your attention to an Act to encourage the planting and cultivation of shade and fruit trees upon the public roads and highways of this State, approved March 30th, 1868. The following is a true copy of the Act referred to:

An Act to encourage the planting and cultivation of shade and fruit trees upon the public roads and highways of this State.

[Approved March 30, 1868.]
The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1.—The Board of Supervisors of any county of this State may, by an order of such Board, to be passed at a regular meeting of such Board, and to be entered in the minutes thereof, authorize the planting and cultivation of shade and fruit trees, by persons owning lands in such county, upon the public roads and highways adjacent to such lands.

SEC. 2. The Board of Supervisors may, by

order, entered upon their minutes, designate the roads or highways upon which such trees may be planted, so describing such road, by reference to places and boundaries, that the same may be readily ascertained. They shall also, in such order, direct the species of trees to be so planted, their age when planted, their distance from each other, and their position with reference to the traveled road, and also all such other rules and regulations as they shall deem proper to secure the proper planting, growth and protection of such trees, and also to prevent their obstructing the travel upon such road.

SEC. 3. Whenever any person shall plant, upon any public road, in front of land owned by him, shade or fruit trees in accordance with the provisions of this Act, and also of such rules as the Board of Supervisors may prescribe hereunder, such person so planting such trees shall file with the Board of Supervisors of such county a written statement, setting forth therein the road or places upon which such trees are planted, the number and species of trees thus planted, and the time of planting.

DISADVANTAGE OF "MODERN IMPROVEMENTS."—In city houses the new convenience of water brought into every room brings an added danger in the impure gases which ascend from the sewers when the stoppers of the basins are left open. Water-closets and sinks should be purified several times a week with disinfecting fluids. So necessary is this considered in Berlin that there is a law regarding it, and persons who rent furnished rooms are taxed by the household five silver groschen a month toward this purpose. But the greatest enemy of health in America is the custom of warming the whole house by furnaces, for the air from most of these heating apparatuses, if overdriven or left to careless servants to manage, is burned and, in some degree, deprived of its life-giving properties. The same is true of iron stoves. In France and England open grates are employed, and to these there is no objection except the expense and trouble.

SEND BY LETTER, AND GIVE YOUR NAME AND P. O. ADDRESS, when you wish this paper stopped, it is continued beyond the time paid for, as sometimes happens through request of agents or other parties. Retaining the paper, telling the P. M. you will not take it, is not sufficient notice. Parties requested to notify us, frequently fail to do so. Papers sent back are liable to miscarry. Without your address with your name we might have to look over near 10,000 names before finding yours, to cross off. We do not intend to send the paper to a single person who does not desire it, and in case of mistake, will thank any subscriber to inform us. bpt

CORRESPONDENCE.—The Rev. L. Walker, of Oakland, says, in regard to the Haines Piano bought in 1867, that it has given unexpected and unqualified satisfaction. "I purchased it at first simply because it was a cheap instrument, thinking it would answer a purpose until such time in the future as a better instrument could be secured; but we have all been very pleasantly surprised to find our 'Haine' equal to the very highest priced instruments of more pretentious makers for purity of tone and durability, and its ability to stand a good amount of use with but little assistance from the tuners. During the five years that it has been in the family it has required tuning but three times, and for the first two years only once. Yours very truly, L. WALKER. Oakland, Sept. 3d, 1872.

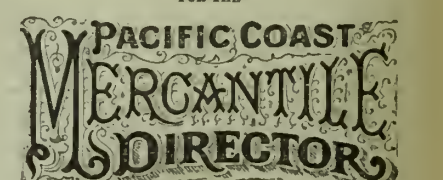
The Mining & Scientific Press,

Started in 1860, is one of the oldest weekly journals now published in San Francisco. It has been conducted by its present proprietors for nine years, during which period it has been repeatedly enlarged and constantly improved. The active and steadfast efforts of its publishers have gained for its conduct an amount of practical experience greater than any other publishers have accumulated on this coast, of a weekly journal. The sum paid by us for the best editorial talent obtainable for our special class journal; for engravings, for interesting news and correspondence, and for printing a large-sized, handsome sheet, is unequalled by that of any other American weekly west of the Mississippi. As a PRACTICAL MINING JOURNAL it has no rival on this Continent.

It is the only MECHANICAL, and the only SCIENTIFIC journal of the Pacific States. Every Miner, Assayer, Millman, and Metallurgist in the United States should take it. Every Pacific Coast Mechanic, Engineer, Inventor, Manufacturer, Professional Man, and Progressive and Industrious Student should patronize its columns of fresh and valuable information. Every Mining Engineer, Superintendent, Metallurgist, Mine Owner and Mine Worker in the world should profit by its illustrations and descriptions of New Machinery, Processes, Discoveries and Record of Mining Events. Every intelligent thinker in the land, in high or humble situation, who would avoid literary trash for genuine information, should SUBSCRIBE AT ONCE.

ONE DOLLAR A YEAR

—FOR THE—



This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

OUR TABLE OF CONTENTS
Will comprise Full Prices Current and Monthly Review of the Wholesale Markets; Diagrams of the Fluctuations of the Produce Markets; Rates of Freight and Passage; Farces—corrected monthly; Illustrations and Sketches of Prominent Men and Buildings; Editorials on Manufacturing and Industrial Progress; Departments containing appropriate reading matter and reviews for various branches of trade, including "Grocery and Provision," "Dry Goods," "Trades and Manufactures," etc., etc.
Our first issue for May consists of 24 pages, embracing FORTY-FIVE COLUMNS of important reading matter—mostly original, and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, \$1. Subscribers to the MINING AND SCIENTIFIC PRESS or the PACIFIC RURAL PRESS will be supplied at half price.

Published by MURRAY, DEWEY & CO.,
At the Publishing Office of the Mining and Scientific Press and Pacific Rural Press, San Francisco.

Invalid Bedstead.

Capt. Benjamin Pollard, of Dutch Flat, California, has recently obtained a patent through the MINING AND SCIENTIFIC PRESS Patent Agency for an Invalid Bedstead. Capt. Pollard is upwards of 60 years of age, and an old Californian. He was led to invent this bedstead from seeing and realizing the great difficulty of handling sick and bed-ridden persons, besides the pain and torture to the patient in many diseases, especially the rheumatism, which is a very common disease in some mining districts. This bedstead is so constructed that the patient can be turned from side to side, or to a sitting position, with the greatest ease, and without the slightest exertion on his part, and when desired he can be raised up out of the way, so that the bed can be prepared as readily as though no patient were waiting to occupy it. Such a bedstead would certainly be desirable for our hospitals and sick rooms, and would save many a torturing pain, and probably many lives.

Capt. Pollard asserts his intention of devoting the balance of his life—even if it should string itself out to the age of Methuselah—to attending upon the sick and afflicted, and easing the pains of suffering humanity. It is seldom we meet with a person who is possessed of such a noble enthusiasm, and we know that such a man will receive his reward, not only in the blessings of those whom he assists, but also in a more substantial recognition of his services in the world to come.

STRAWBERRIES.—We see several lots of fine strawberries in the Restaurant windows on Montgomery street this morning, Nov. 1st. On inquiry find them selling at fifteen cents a pound. New York and Boston market reporters please copy.

IMPORTANT.—We would call attention to the advertisement of Linforth, Kellogg & Co., 3 & 5 Front Street, S. F., importers and jobbers of Hardware and Cutlery; making farmers' tools and implements, including gang-plows, a specialty.

ON FILE.—L. R. D., Pine Grove; Oregon State Fair, etc.; Sales of Mohair; Sacramento Farmers' Club.

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

WM. H. RATTENBERRY—California.
FRANK S. CHAPIN—California and Oregon.
I. N. HOAG—Sacramento, General Agent.
F. M. SHAW—Southern California.
L. P. MCCARTY—General Agent.
SAMUEL CUSHMAN—Colorado Territory.
A. C. KNOX, City Soliciting and Collecting Agent.

A Good Binder for \$1.50.

Subscribers for this journal can obtain our Patent Elastic Newspaper File Holder and Binder for \$1.50—containing full title of the paper on the cover. It preserves the papers completely and in such shape that they may be quickly fastened and retained in book form at the end of the volume, and the binder (which is very durable) used continuously for subsequent volumes. Post paid, 25 cts. extra. It can be used for Harper's Weekly and other papers of similar size. If not entirely pleased, purchasers may return them within 30 days. Just the thing for libraries and reading rooms, and all who wish to file the Press.

A New Potato.

The Late Rose Potatoes, grown by C. H. Dwinelle, of Oakland, and exhibited by DEWEY & Co., of the PACIFIC RURAL PRESS, are the first of this variety raised in California. As one of the latest of celebrated new varieties, we will mention some of its peculiarities. It bears a strong resemblance to the Early Rose in form, but has its marked characteristics in maturing about three weeks later when planted side by side. The Late Rose is also harder, healthier, a greater producer and a better keeper, retaining its good qualities throughout the season. Its growth in California the present season has been a favorable one, with every prospect of its maintaining here its excellent reputation established within the past two years in the Eastern States.—*Sacramento Union*, Sept. 26th.

The above potatoes, which were awarded a special premium at the State Fair, were samples from a small quantity raised this season. A portion of the same will be sold in small lots if desired. Price, 4 lbs. for \$1, sent by mail, prepaid. Address C. H. Dwinelle, Oakland, or care of this office.

A Fragrant Cosmetic.

The delicious floral aroma of MURRAY & LANMAN'S FLORIDA WATER is not the only virtue of that great perfume; it is the best and safest of all cosmetics, and, perseveringly used, is sure to remove all roughness, sunburn, tan and blotches from the complexion. 676

Coughs and Colds.—Those who are suffering from Coughs, Colds, Hoarseness, Sore Throat, etc., should try "BROWN'S BRONCHIAL TROCHES."

"Time is short—Art is long," but CABLE SCREW WIRE Boots and Shoes will last longer than any other kind; are drier—more pliable—will not rip nor come apart.

From the Atlantic to the Pacific the fame of the celebrated SILVER TIPPED Boots and Shoes is spreading. They last twice as long as Shoes without Tips.

Ask your Shoe Dealers for them.

Trees, Bulbs, Hedge Plants, Seeds, Fruit and Flower Pluses. 4 Catalogues, 20c. F. K. PHENIX, Bloomington Nursery, Ill.

Farmers, everywhere, write for your paper.

WATERMELON QUOTATIONS.—The *Call* quotes watermelons, Oct. 31st, at \$3 per hundred. The *Bulletin* 4 to 5 cents each, and the *Alta* 18 to 25 cents each. A slight discrepancy and a mistake somewhere. The *Alta* probably gives the price of "Club" melons in the English market.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Oct. 31.

FLOUR.—The interior and local demand is fair, with a light inquiry for export. We quote prices as follows:

Superfine, \$3.75@4.12½; Extra, in sacks, of 196 lbs. \$4.75@5.00; Oregon brands, \$4.75 @ \$5.25 in sacks of 196 lbs.

WHEAT.—The market is firm with free receipts. Sales aggregate 50,000 sacks fair to choice, at \$1.50@1.62½. The range for shipping grades is \$1.60; Dark Coast, \$1.40 @ \$1.45, and Bright Coast \$1.50@1.55, choice milling, \$1.60 per 100 pounds.

The latest Liverpool market quotations dated Oct. 30th, are: average California wheat, 12s 8d; California Club wheat, 13s 2d@13d 4d.

BARLEY.—The market is steady. Bay feed, \$1.20@1.22½; Bay brewing, \$1.25@1.27½; Coast, \$1.15@1.17½ per 100 pounds.

OATS.—Market is rather dull. Ordinary to choice, \$1.50 to \$1.80 per 100 lbs. Light feed, \$1.50@1.55; good do. \$1.60@1.65; heavy do. \$1.70@1.75; Oregon, \$1.80.

CORN.—New crop, \$1.30@1.35 per 100 lbs. CORNMEAL.—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$2.25@2.50 per 100 lbs.

RYE.—Is quiet at \$1.80 per 100 lbs. STRAW.—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN.—Price is now \$20 per ton from the mill.

MIDDINGS.—For feed, are selling at \$27.50 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been free during the week. Wild Oat, \$15@16, and choice wheat, \$18@18.50 per ton. Quotable at close at \$12@18.50 ordinary to choice.

HONEY.—Best Los Angeles and San Diego sells at 20@22½¢; other kinds 10@15¢ in comb; strained, 10¢@15¢ per lb.

BEESWAX.—Quiet at 33@35¢ per lb.

POTATOES.—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from \$1.00 to 1.45. Carolina, 75¢ per 100 lbs.

ONIONS.—Quotable at \$2.00@2.25 per 100 lbs.

WOOL.—The market continues dull, but the demand is a little better. Sales of 370,000 lbs. Fall at current rates. Spring is neglected and nominal. Fall, 11@15¢ for burry, and 16@18¢ for clear; 20@21¢ for choice.

TALLOW.—Good quality of Cal. 8@8½¢. SEEDS.—Flax 3¢; Canary, 4½¢. Mustard, 1@3¢ per lb.

PROVISIONS.—Following are jobbing quotations: California Bacon 13@14¢ per lb.; Eastern do. 12@13 for heavy and 14@15 for sugar-cured Breakfast; Cal. Hams 14½@15½; Eastern do. 19@20¢; California Smoked Beef, 12½@13¢ per lb.

BEANS.—The following are jobbing rates: Pea \$2.80@3.00 Small White \$3.00; Small Butter, \$2.62½; large \$2.75; Bayo, \$2.75@3.00; Pink, \$2.75 per ctl.

NUTS.—California Almonds, 8@10¢ for hard and 18@25 for soft shell; Peanuts, 5@8 Pecan, 20¢ per lb.; Hickory, 12¢; Brazil, 16¢. Chili Walnuts, 12½¢; French Almonds, 25 @ 30¢; Princess Almonds, 35@40¢; Filberts, 18¢; Cocoanuts, \$10.00 per 100.

HOPS.—California are dull and nominal at 25@30¢ per lb.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 8@8½¢ per lb.; do. 2d quality 6@7½¢ per lb.; do. 3d do. 4½@6¢.

VEAL.—Quotable at 7@10¢.

LAMB.—Scarce at 9¢.

MUTTON.—Quiet at 6½@7¢ per lb.

PORK.—Undressed grain-fed is quotable at 5½@6½¢; dressed, grain-fed, 8@9¢ per lb.

POULTRY.—Live Turkeys, 17@18¢ per lb.; Hens \$7.50@8.00; Roosters, \$6.00@6.50 per dozen; Spring Chickens, \$4.00@4.50; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 per dozen.

WILD GAME.—Quail, \$1.75@2.00; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, \$75¢; Mallard Ducks, \$4.00; Teal, \$2.00@2.50; English Snipe, \$2.00@2.50, small, 75¢@1; Venison, 8¢ per lb.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 30@70¢, per lb. Inferior and ordinary roll is plentiful, but dull at 30@50¢; choice, scarce at 60@70¢. New firkin is quotable at 25@35¢; pickled, 30@40¢; New York, 25@30¢; Western, 15@20¢.

CHEESE.—New California, 10@15¢; Eastern at 14@16¢ per lb.

Eggs.—California fresh, are sold at 52½¢; Oregon, 35@40¢; Eastern, 25@30¢ per doz.

LARD.—California 12@13. Eastern in cases 13@13½¢; do in tins, 11½@12¢; in kegs, 12@12½¢ per lb.

HIDES.—Sales for the week embrace 1,103 Cal. dry at 17@18¢, and 1,525 salted at 8@9.

FRUIT MARKET.

Tahiti Oranges, M 45 00	Quinces, bx.....2 00	@ 2 50
Limes, M.....12 50@15 00	Pomegranates, lb.....	@ 12½
Bananas, M.....1 00	Plums, M.....7 00	@ 8
Sicily do, bx.....14 00	Figs.....4 00	@ 6
Pineapples, doz.....6 00	Crab Apples, lb.....	@ 9
Apples, Rus' lb.....1 00	Strawb'rs, lb.....	@ 12½
King, do.....1 00	Cantaloupes, doz.....	@ 10
R. I. Greening.....	Water'm's, 100 3 00	@ 2½
Nathan Spy.....1 00	Grapes, Mission.....	@ 2½
Baldwin.....1 00	Chasselas.....	@ 5
Senator.....1 00	Bk Malvoisie.....	@ 5
Spitzenberg.....1 00	Rose of Peru.....	@ 5
Pears, Bartlett, lb.....	Bk Hamburg.....	@ 5
Seckels, do.....2 00	Black Prince.....	@ 4
Winter Nuts.....2 25	Muscad of Alr.....	@ 4
Fall Butter.....75 00	Plum Tokay.....	@ 5
East. Beaurre.....75 00	Black Morocco.....	@ 10
	Wine Grapes.....	@ 1½

DRIED FRUIT.
Pitted, do M.....20 @ 22½
Raisins, lb.....8 @ 15
Black Figs, lb.....8 @ 10
White, do.....15 @ 20
Plums, lb.....6 @ 8

VEGETABLES.
Cabbage, lb.....½ @ ½
Garlic, lb.....½ @ ½
Rhubarb, lb.....½ @ ½
Green Peas.....3½ @ 4
Sweet Peas.....3½ @ 4
Green Corn, doz.....15 @ 25
Marrowfat Squash.....
per ton.....7 00 @ 8 00
Artichokes, lb.....4 @ 4

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES.—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING.—English Standard Wheat bags, hand sewed, 15½@15½¢; Flour sacks 8½@9½¢ for qrs. and 13½@13½¢ for hlfs. Standard Gunnies are jobbing at 18½¢; Wool 70¢5¢; Barley sacks 16¢@18¢; Hessians, 40-inch goods, 12@12½¢ per yard.

BUILDING AND FENCING MATERIALS.—The demand from the interior and city is light, probably on account of high prices. Export trade is light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$18@19; do, surfaced at \$28@30; Spruce \$17@18.

Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, M.....	\$20 00
Rough refuse, M.....	16 00
Rough clear, M.....	32 50
Rough clear refuse, M.....	22 50
Rustic, M.....	35 00
Rustic refuse, M.....	24 00
Surfaced, M.....	32 50
Surfaced refuse, M.....	22 50
Flooring, M.....	30 00
Flooring refuse, M.....	20 00
Beaded flooring, M.....	32 50
Beaded flooring refuse, M.....	22 50
Half-inch siding, M.....	22 50
Half-inch siding refuse, M.....	16 00
Half-inch surfaced, M.....	25 00
Half-inch surfaced refuse, M.....	18 00
Half-inch battens, M.....	22 50
Pickets, rough, M.....	14 00
Pickets, rough, pointed, M.....	16 00
Pickets, fancy, pointed, M.....	25 00
Shingles, M.....	3 00

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—	
Rough, M.....	\$25 00
Flooring and Stepping, M.....	37 50
Flooring, narrow.....	40 00
Flooring, second quality, M.....	30 00
Laths, M.....	3 50
Furring, M.....	1c
Redwood—	
Rough, M.....	25 00
Rough refuse, M.....	18 00
Rough Pickets, M.....	18 00
Rough Pickets, pointed, M.....	20 00
Fancy Pickets, M.....	30 00
Siding, M.....	27 50
Tongued and Grooved, surfaced, M.....	40 00
Do do refuse M.....	27 50
Half-inch surfaced, M.....	40 00
Rustic M.....	42 50
Battens M.....	1c
Shingles M.....	3 50

COFFEE.—Costa Rica 19@19½¢; Guatemala, 18¢. Java 23¢; Manilla, 18½¢; Rio 19½@20; Ground Coffee in cases 30¢; Chicory, 10¢.

SPICES.—Allspice 14@15¢. Cloves, 23¢. Cassia 35@36¢. Nutmegs \$1.00@1.10. Whole Pepper 19@20¢. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15¢ per lb.

FISH.—We quote Pacific Dry Cod new, in bundles at 6½¢; Salmon in bbls, \$5.00@6.00, hf do, \$3.50@4.50; Case Salmon, \$3.00 for 1-lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85¢ per box; Mackerel, No. 1 hf bbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.00@2.25; Mess, \$2.50; Extra mess, \$3.00.

NAILS.—Quotable at \$6.00@9.00 for assorted sizes.

PAINTS.—Standard White Lead 10@12½¢; Whitening, 2¢; Chalk 2½¢; Paris White 3¢; Ochre, 3½¢; Venetian Red, 3¢; Red lead, 11½¢; Litharge, 11¢ per lb.

RICE.—Sales of China No. 1 at 6¼@7¢ and No. 2 at 5½@5¾¢ per lb. Siam, quotable at 5½¢ in mats; Japan, 5½@6¢ per lb.

SOAP.—The prices for local brands are 5@10¢, and Castile, 11½@12¢ per lb.

SUGAR.—We quote Cal. Cube at 12¢; Circle A Crushed, 12¢, and Granulated 12¢; Golden C, 10¢; Extra Golden C, 10½¢; Hawaiian 8@9½¢, as extremes per lb.

SKRUP.—Prices may be given as follows: 32½¢ in bbls, 35¢ in hf bbls, and 40¢ in kegs.

SALT.—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

TEA.—We quote as follows for bulk descriptions: Amoy—Common to fair, 30@

45¢; superior to fine, 55@65¢; extra fine, 75@85¢. Poochows—Common to fair, 35@45¢; superior to fine, 50@60¢; extra fine, 75¢. Souchong and Congou—Common to fair, 35@45¢; superior to fine, 50@60¢; extra fine, 75@95¢. Japans—Common to fair, 30@35¢; superior to fine, 40@45¢; extra fine to finest, 55@75¢ per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, Oct. 31, 1872.

MISCELLANEOUS.	
Butter, Cal. fr. lb.....	60 @ 75
do Oregon, lb.....	60 @ 75
Honey, lb.....	20 @ 30
Cheese, lb.....	20 @ 25
Swiss Cheese, lb.....	50 @ 60
Eggs, Cal. doz.....	65 @ 75
do Oregon, doz.....	62½ @ 75
Lard, lb.....	18 @ 20
Sugar, cr., 7½ lb. 100 lb.....	60 @ 80
Brown, 8 to 10 lbs. 100 lb.....	12 @ 15
Beet, do.....	12 @ 15
Sugar, May, lb.....	30 @ 40
Plums, dried, lb.....	15 @ 30
Peaches, dried, 12½ lb.....	10 @ 12½
Wool Sacks, new 70 lb.....	75 @ 100
do old, 70 lb.....	75 @ 100
do 100 lb.....	75 @ 100
do 150 lb.....	75 @ 100
do 200 lb.....	75 @ 100
do 250 lb.....	75 @ 100
do 300 lb.....	75 @ 100
do 350 lb.....	75 @ 100
do 400 lb.....	75 @ 100
do 450 lb.....	75 @ 100
do 500 lb.....	75 @ 100
do 550 lb.....	75 @ 100
do 600 lb.....	75 @ 100
do 650 lb.....	75 @ 100
do 700 lb.....	75 @ 100
do 750 lb.....	75 @ 100
do 800 lb.....	75 @ 100
do 850 lb.....	75 @ 100
do 900 lb.....	75 @ 100
do 950 lb.....	75 @ 100
do 1000 lb.....	75 @ 100

PRODUCE, ETC.	
Flour, ex, 35 lb. 25	@ 50
Superfine, do. 40	@ 50
Corn Meal, 100 lb. 25	@ 40
Wheat, 100 lbs. 140	@ 100
Oats, 100 lbs. 150	@ 80
Barley, cwt.....	1 20 @ 1 25
Beans, cwt.....	4 00 @ 5 00
Dry Lima Beans, lb.....	12 @ 15
Wheat, 100 lbs. 140	@ 100
Oats, 100 lbs. 150	@ 80
Barley, cwt.....	1 20 @ 1 25
Beans, cwt.....	4 00 @ 5 00
Dry Lima Beans, lb.....	12 @ 15
Wheat, 100 lbs. 140	@ 100
Oats, 100 lbs. 150	@ 80

FRUITS, VEGETABLES, ETC.	
Apricots, lb.....	@ 25
Pine Apples, cwt.....	@ 25
Bananas, doz.....	75 @ 80
Cantaloupes.....	50 @ 60
Watermelons.....	25 @ 50
Cal. Walnuts, lb.....	25 @ 30
Raspberries, lb.....	25 @ 30
Strawberries, lb.....	25 @ 30
Raspberries, lb.....	25 @ 30
Gooseberries, lb.....	25 @ 30
Cherries, lb.....	25 @ 30
Oranges, doz.....	75 @ 100
Limes, per doz.....	25 @ 30
Figs, fresh, lb.....	10 @ 15
Asparagus, wh.....	50 @ 75
Artichokes, doz.....	75 @ 100
Brussels sprouts, 5 lb.....	25 @ 30
Beets, per doz.....	25 @ 30
Potatoes, New 2 lb.....	25 @ 30
Potatoes, sweet, 4 lb.....	25 @ 30
Broccoli, doz.....	50 @ 60
Cauliflower, 1 lb.....	10 @ 15
Cabbage, doz.....	10 @ 15

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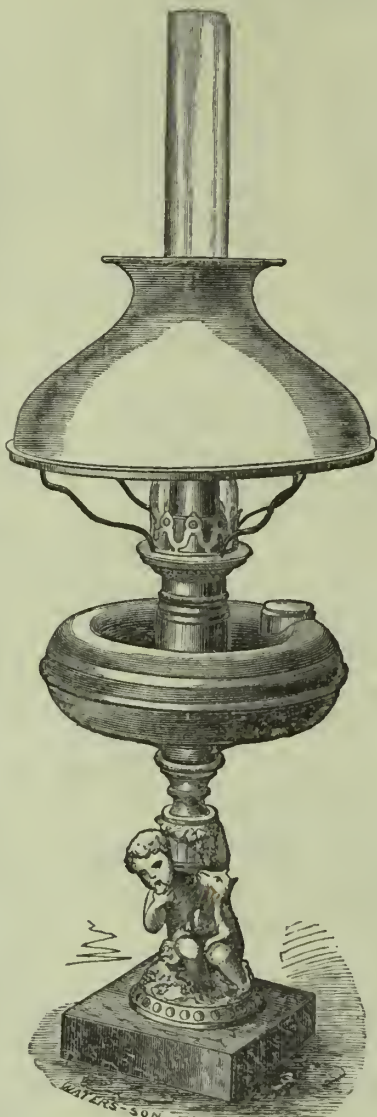
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BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

1444-lamp

Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, one will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur, the worst consequence that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.

6th.—In case of accident, the Lamp falling or being thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

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A large lot of Angora Goats and Cotswold Sheep for sale. Also 100 Southdown and Cotswold graded Rams, and Angora graded Bucks up to 31-32.

All of the above will be sold on reasonable terms and delivered on the cars at Watsonville free of charge.

JUST ARRIVED!

Eighty-five head of Choice, Pure Breed Angora Goats—47 Bucks and 38 Ewes—the largest importation ever made to this coast, mostly from the flock of Richard Peters, of Atlanta, Ga. A pamphlet, with particulars, furnished to breeders on application.

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TO SHEEP BREEDERS!

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Just imported from Addison County, Vermont. These Sheep were all selected from noted flocks by one who has bred this variety of Sheep for fifteen years, and are superior in the combination of qualities that go to make up a perfect Sheep. A portion of this flock will be offered for sale on reasonable terms.

NOW IS THE TIME TO BUY,

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For Sale in Lots to Suit Purchasers.

Including a Choice Lot imported by A. EUTY CHIDES native of Angora. For particulars apply to

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The undersigned has perfected arrangements to receive consignments of the Best Bred Stock from Europe and the Eastern States, consisting of Short-horned Durham, Devon and Alderney Cattle; Cotswold, Spanish Merino and Silesian Sheep; Angora Goats; Berkshire and Essex Swine. All of which will be sold on reasonable terms, and pedigree guaranteed.

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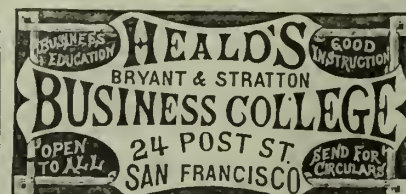
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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies.
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Raspberry and Blackberry Plants, 6 varieties, \$2 per C.
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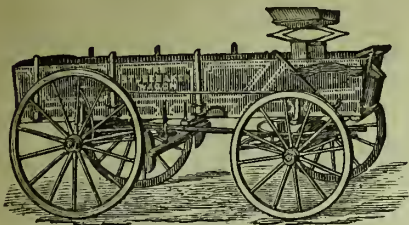
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GOOD PROPORTION,
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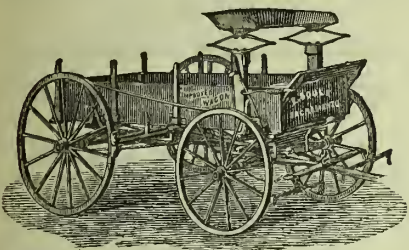
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Of all sizes, with HEAVY TIRES riveted on,
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The following are some of the reasons why these
Plows are entitled to preference over any other Plow
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They will plow any kind of soil, and leave the ground
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FIRST PREMIUMS!

These Plows have taken First Premiums at the State
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Premium of \$40 for the best Gang Plow, after a fair test
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Champion Deep-Tilling Stubble Plow,
Took the First Premium over all competitors at the
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This Gang Plow combines durability with cheapness,
being made entirely of iron by experienced workmen, of
the best material. Over three hundred are now in use,
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And also by most leading Agricultural Dealers in the
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Took the Premium over all at the great Plowing
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This Plow is thoroughly made by practical men who
have been long in the business and know what is re-
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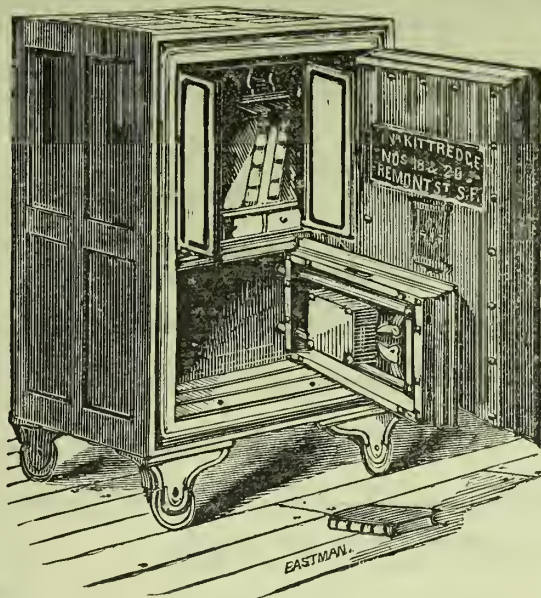
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MANUFACTORY OF

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A LARGE ASSORTMENT OF SAFES OF ALL KINDS CONSTANTLY
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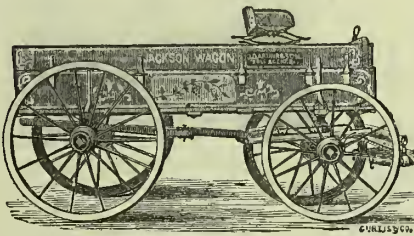
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JACKSON MICHIGAN WAGONS are known to be
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COAST. Send for Certificates. The

JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair,
Michigan, over the Studebaker and all others.

Important improvements have been made in our
Wagons now arriving. Our large Two-horse and Four-
horse Wagons have heavier tires, broader and deeper
felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We
sell gearing only; or fitted up with California Racks and
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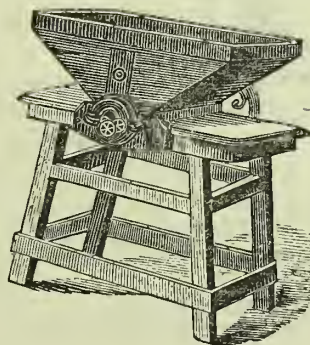
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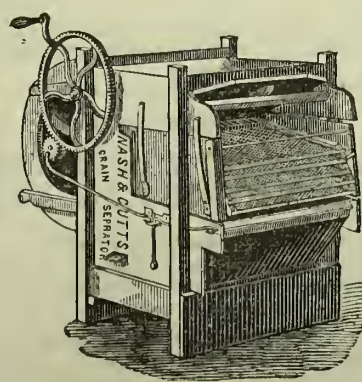
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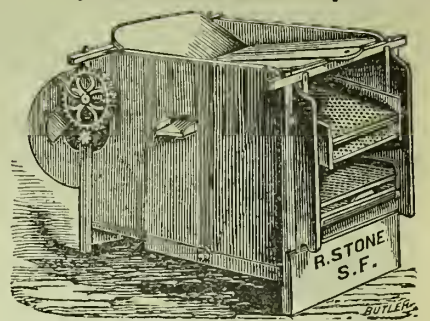
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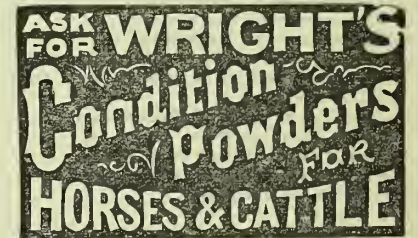
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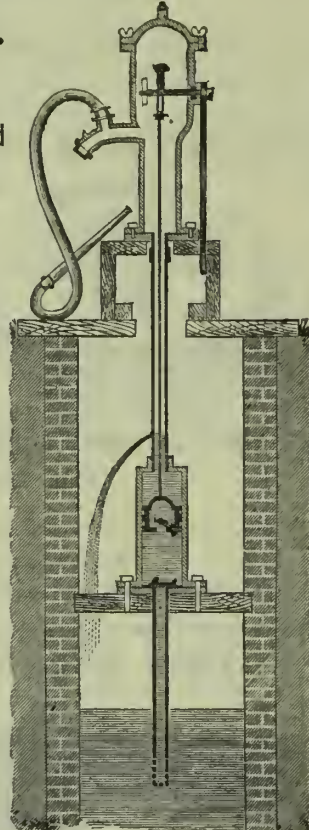
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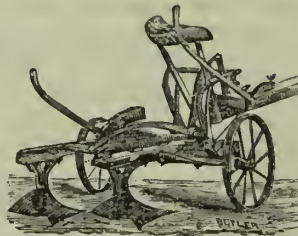
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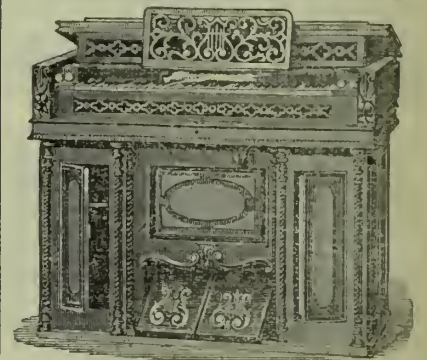
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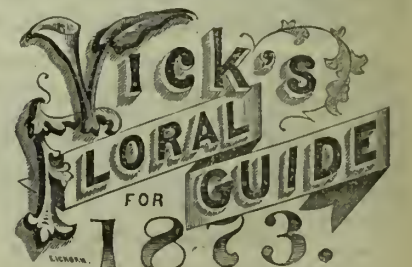


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Volume IV.]

SAN FRANCISCO, SATURDAY, NOVEMBER 9, 1872.

[Number 19.]

Lecture Upon Scale Insects.

Delivered Before the Oakland Farming, Horticultural and Industrial Club, Oct. 25th, 1872, by Dr. Wm. P. Gibbons of Alameda.

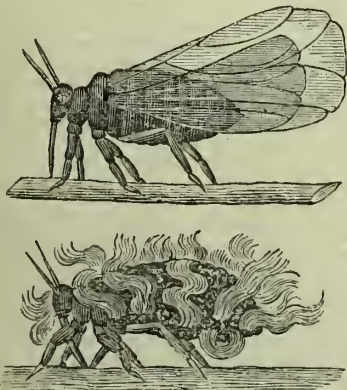
While pursuing occasional investigations into the habits of predaceous insects, I find the subject so expansive as to require more time and labor than I can now appropriate to it. My observations will therefore be directed to 3 or 4 species only, which are prominent on account of the great mischief which they commit in our orchards and gardens. We will commence with the

Aphides.

The aphides, or plant lice are so universally diffused, that everybody knows them. In the United States there are about 40 species enumerated. They belong to the sub-order Hemiptera, which includes all insects whose mouth is furnished with stylets, with which they pierce the vessels of plants and animals, and suck in their food. Thus, besides plant-lice, the order includes bed-bugs and body-lice, locusts, cicadas or scale insects, chinch bug, and many others.

Our interest lies in the species commonly known as the Woolly Aphides; it differs from some others in being without a pair of honey tubes, which some have projecting from the 6th segment of the body. Bonnet discovered that aphides were parthenogenetic; i. e. able to produce offspring without the presence of the male. To some extent, the observation of Dr. Burnett will apply to our California species. He states "that in early autumn the colonies of plant lice are composed of both male and female individuals; these pair, the males then die, and the females begin to deposit their eggs, after which they die also. Early in the spring, as soon as the sap begins to flow, these eggs are hatched," and the young lice soon come to maturity. "In this state it is found that the whole brood, without a single exception, consists

Figs. I and II.



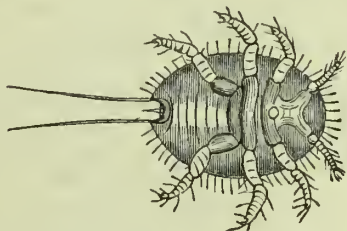
solely of females, or more properly of individuals who are capable of reproducing their kind. This reproduction takes place by a viviparous generation." The second generation pursues the same course as the first, the individuals of which it is composed having no trace of the male among them. The same conditions are again repeated, and according to Bonnet, he carried them through 9 generations under these conditions. Duval obtained 11 generations in seven months, and Kyber states that a colony of *aphis dianthi* continued to propagate for four years, without the intervention of males. Dr. Burnett considers this anomalous mode of increase as a process of budding, and that the whole series, like the leaves of a tree, constitutes but a single generation, which results from the union of the sexes during the preceding fall.

Our California winters are scarcely ever so severe as to destroy those animals which enter into a state of hibernation, and though I have watched closely during the present season, I have never been able to detect a solitary male upon an apple tree. Numerous broods of young, however, were apparent from time to time, and as the community was piled up by those coming to maturity, some friendly wind would transport a woolly group to another tree, which, happily might be on my neighbor's premises.

Hence, I entertain no doubt of our species

maintaining its perpetuity without the presence of males. The only group of the two sexes which I have succeeded in finding, was on a pear tree. There were not more than fifty in the community, about one-half of which were males. The figures here referred to give a correct diagram of each sex. These aphides are now on the look out for winter quarters. A loose scale of bark—an old adherent bud envelope—a scratch or cut into the bark—the projecting edges of new wood over the surface from which a branch has been pruned, all constitute localities where they can snugly winter. To be sure, some are more fastidious and make their way down below the surface of the ground, and settle among the roots of the tree, where they continue to propagate with marvellous rapidity; so that when the careful husbandman starts in on his vernal tour through the orchard, and removes the soil from around each tree, he not unfrequently finds ten times more heads of

Fig. IV.



Young female *Aspidiotus* from a pear tree.

of live stock within a few inches square, than he has of civilized herbivora on the entire ranch.

The Aphis, as is well known, commences its career either on the trunk of a tree, or on a small branch. It appreciates all the careless habits of a gardener, by selecting such spots for colonies, as have had bark bruised or torn; or such rough places which may have been left by clumsy pruning. From these points it gradually sends forth its pioneers to the next leaf axil, and continuing this process, it soon takes entire possession of the tree, if left alone. During the fall, in our climate, if it does not secrete itself in the manner heretofore stated, the female deposits her eggs in such places as have been already indicated, from which points they begin to hatch out in February.

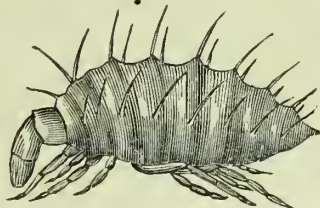
The other genus belonging to this sub-order, which we will here notice, is the *Aspidiotus* or scale insect. In the Eastern States the most generally diffused and destructive species is the *A. conchiformis*, so named from its scale cover representing in shape an oyster shell. As I am not certain of the identity of this species with that of California, I will pass over any effort at description till a more convenient season; simply premising that our list of the number of species, sustains the established reputation of the Pacific Coast, there being not less than five.

There is no necessity for me to repeat the account which I gave some weeks ago, of the habits of this insect. It is probably the most destructive and aggressive of any which infest our orchards. Should a single female once gain foothold on a tree, her progeny never leaves it till growth and vitality are destroyed.

Our present object is to deal with the question in its practical aspects. And while giving full importance to the injury inflicted on orchards by predaceous insects, we must not overlook other causes which impair the vigorous growth of trees. Most prominent among these, is insufficient or careless cultivation. Neglect this, and you neglect the fundamental conditions which produce healthy trees and perfect fruit. With vegetation as with animals, imperfect or arrested nutrition lays the foundation of disease, and gives easy development to parasitic or fungoid growth; the presence of which, reacting on the vegetable tissues, soon destroys them. How many of your orchard trees are now literally covered with a common lichen, the *Cetraria Californica*! Now, pull off a plant of this, which has been rooted on the bark for two years, and what will you see? 1st, a large pupa of an hemipterous insect; 2d, the *aspidiotus*, or scale insect; 3d, the larvæ of a neuroptera; 4th, an acarid, or mite insect; 5th, one or more spiders. And were it not for making the record appear unreasonably large, I would add a small worm which I have not diagnosed. Take the lichen, gentlemen, examine for yourselves the happy family which it contains;

number these various animals on the trunk of a small pear tree one inch and a half in diameter, and five feet long, and when you reach the record of 30,000, say whether you have completed the census. Without doing this, you would hardly believe that you have scarcely an apple or pear tree in your garden which does not sustain a living population of 100,000 insects. Nay, don't be alarmed; this is a very

Fig. III.



small number even for a careful gardener. Let me treat you to a twig of almond or peach tree. Do you see that beautiful red tint which is spread round the angle of the branchlets? It looks as though some rural artist had been practising on lights and shadows. Now bring your eye glass to bear upon it, and you will see an aggregated mass of beautiful little eggs, round as a sphere, and sparkling as rubies. Count an inch of them in linear dimensions—you can't make less than 200 eggs, which will yield 40,000 to the square inch. Next number the branches and the twigs of that small tree twelve feet in height, and by the time you finish your estimates with the greatest care, you will have over 5,000,000 of those little eggs figured out on your account book. Do you think you have them all? Then take a few leaves of the tree, and bring your eye glass in requisition once more. Of course you perceive those little animalcules which are busily striding along on four legs, apparently not knowing what to be at, yet very anxious to make themselves useful in some manner. Count again, but don't overtax your arithmetical genius. One, two, three, four and five hundred you find on a single leaf, saying nothing of an extra one hundred eggs which mamma forgot to leave below on the branches. I might as well here tell you that there are 30,000 leaves on that tree; and if we make a fair average, and estimate two hundred animalcules to a leaf, there will be a living population of 6,000,000 of these *arachnida* with the 5,000,000 of eggs in expectancy, to be supported on that small arborial territory.

Having now got all these animals together and they present quite a formidable array—the next question is to dispose of them in an advantageous manner. The last named insect belonging to the spider family, though probably producing some little injury to trees, on account of its great numbers, is of especial benefit to the garden; it feeds upon the aphids and the scale insect. I must confess however that

Fig. V.



my acquaintance with it is of so recent date, that I am not yet prepared to demonstrate its habits, without a liability of making some errors. I first discovered them about the 1st of June, in limited numbers; two months afterward they greatly multiplied and by September they had attained their greatest development. A stream of water from the hose exterminated most of the animals and repeated once a week it almost cleared a tree on which I found the greatest number. Though found on almonds, peach, cherry, plum, apple and pear trees, they are only in quantity on the first three and I have been unable to find a live aphid or aspidiotus on either cherry, peach or an almond tree. The cause of this exemption may not be owing to the presence of the acarina, but it is strongly suggestive. Next season I propose to cultivate the crop on apple and pear trees in order to determine the true relation which they hold to other insects.

It is still an unsolved problem how to deal with our apple and pear trees; I have been prying into the experience of writers and gardeners, without deriving any substantial results. After numerous experiments I am induced to believe the most effective treatment for the scale insect, is a solution of caustic potash. Four ounces of water to one of potash, will kill the animals and the tree also. Sixteen ounces of water to an ounce of potash may be applied without injury to tender bark or buds. The entire tree may be washed over with a white-wash or paint brush. One of my neighbors extolled the use of tobacco juice, as a certain poison. As he used tobacco largely in his own system, he could speak advisedly of its toxic properties; and I shall hereafter adopt the combination in full faith that should the reduced strength of the potassa liquor fail to kill the insect, the narcotic combination will surely settle the question.

This mixture is also the best which I have found to kill aphides. These animals have a film of resinous matter over their hide, which prevents a liquid, not alkaline, from coming in close contact with their absorbent surface. Whale oil soap water is much used for the same purpose, and probably with good results. Under no conditions, however, will the result be satisfactory, unless the applications are applied often enough to destroy the last animal or egg that may be living on the tree. The proper time to do this work is during early autumn, soon as the leaves fall, or before. Every trunk, branch, twig and bud should be carefully washed with the liquid. True, the process involves considerable outlay of time and some little money. But how much did your trees cost you in the first case; how much money and labor have you bestowed upon them already? How many years have you been waiting for them to bear fruit? And will you now let them die for lack of two hours culture over each tree and five cents' worth of potassa? Try the experiment on one tree, and if the foregoing plan will not clean off every particle of moss and kill every insect, and insure a good, healthy, productive tree, instead of that diseased runt which can hardly hold on to life on account of its one hundred thousand parasites, then bring your bill of expenses into the Farmers' Club, and I will pay it for you.

One more remark will conclude my paper. There are some nurserymen within a thousand miles of this locality, who sell from one to five hundred insects with every tree that leaves their premises. This is especially true in respects to plants and shrubbery raised under glass. Every horticulturist and amateur gardener should avoid such establishments as he would a pest house. No young tree nor shrub should ever be transplanted to your garden without being closely inspected and thoroughly cleansed of all insect life. Care and watchfulness will protect your fruit trees and gardens, as perfectly as it will keep vermin and itch from your children.

Angora Goats in Oregon.

We learn from our agent and correspondent in Oregon, that Butterfield & Son have sold 650 of their Angora Goats lately driven to that State, for sale and propagation there. Mr. B. says that the young goats raised from the stock he sold there last year, are better than those he raised in California.

He is confident that they will do better generally in Oregon than in California, and gives proof of his sincerity by the purchase of a half interest in 1,880 acres of land, on which he has put 200 goats and will largely increase the number as circumstances may warrant.

In another column of the Press will be found an account of sales of Mohair made for Butterfield & Son, by Davis & Foulke, Philadelphia, showing the value of the different grades of mohair as obtained in England.

THE NEXT PRESIDENCY.—Returns, as far as received, would indicate the re-election of Gen. Grant as President for four years next succeeding the 4th of March, 1873.

WHAT in life is more beautiful than happy human faces?

CORRESPONDENCE.

A Harvest Festival.

EDS. PRESS:—I have been wishing to-night that I could "clasp hands" with some of my California friends across the chasm that lies between us; then I thought, "why can't I say 'how do you do' to them, through the columns of their favorite paper?" And perhaps the readers of the PRESS would like to read a few notes from the old Bay State.

Haverill is a beautiful city of 16,000 inhabitants, and I doubt not some people in California would be glad to be here this fall, and visit the places of interest, as the birth-place of the poet Whittier, which is only a pleasant drive from here; but I think they would be glad to return to a warmer climate by the time Jack Frost had bitten their noses several times. We have had but one short visit from him as yet. The trees, nearly all of them, retain their green dress, and the scarcity of bright leaves in the city drove the young people of the 1st M. E. Church up on "Mount Washington," (a "commanding hill" lying southwest of that city,) last Friday, October 11th, to obtain evergreens and autumn leaves for their Harvest Festival.

The idea of a Harvest Festival is new here, though I believe they are held occasionally in the West. The first evening the church was decorated with wreaths of evergreen and autumn leaves; handsome bouquets of flowers adorned the gallery front, and the pulpit, over which rose an arch, with the words "Harvest Festival" on the upper part, while the sides were wreathed with leaves of flaming red and gold. The exercises consisted of voluntaries from the organ, singing by the choir and Sabbath Schools, select readings and recitations, and original poems and essays. The exercises were all excellent, and of a character suited to the occasion; but those most worthy of note were: an essay, by Miss Holbrook, (a graduate from the Gilton, N. H., Seminary;) reading from Holland's "Bitter Sweet," by Rev. O. W. Scott, the pastor; an original poem, by Mrs. O. W. Scott, and the recitation by Miss Holbrook of a poem, written at the parsonage, entitled "The Vegetable Convention," which I will send for publication, as this is a day of conventions. Perhaps it will hear a little study.

The second entertainment was held at Music Hall in the evening of October 16th. Contributions of fruits, vegetables, fancy articles, etc., had been solicited, and were brought in from all quarters. Music was furnished by a good band; an excellent farmers' supper was furnished in the dining room joining the hall, and within the hall were six tables—a fruit table, a vegetable table, a candy table, an ice-cream table, a table for "Yankee notions," and a fancy table, covered with an astonishing array of tidbits, wax-work, pictures, collars, aprons, etc., etc. The hall was crowded, and the evening was full of enjoyment, without any of those so-called "pleasures" which leave intense weariness or a "sting" behind, as dancing, gambling, or drinking intoxicating liquors. The entertainments were of the highest character. Perhaps these suggestions will be of use to some society wishing to raise money and have considerable enjoyment out of it.

J. E. JAMES.

Haverill, Mass., Oct. 17, 1872.

The Open Polar Sea.

The Open Polar Sea must be discovered soon if at all. At least so argues a writer in *Nature* (an English periodical), who believes the sea will soon cease to exist. Land is said to be rising everywhere between the pole and the fifty-seventh parallel, and the greatest movement is at the pole itself.

Some interesting facts are quoted in support of the theory. Pliny said that Scandinavia was an archipelago, and spoke of bold seamen who had circumnavigated the group of Islands. Ptolemy confirmed this statement. Ctesius said, in the seventeenth century, that Norway was rising at the rate of forty inches a year. Sir Charles Lyell indorses the theory. The water level in the gulf of Bothnia, falls one foot every fifteen years. Near Gefte there are low pastures where old men remember seeing boats afloat. Near Stockholm, seventy feet above the level of the sea, the remains of shell-fish, identical with the present coast species are found. At Soduleige, ninety feet above high water, there is a bed of sand which contains some wrecked boats and an old anchor. In the interior of Spitzbergen, skeletons of whales have been unearthed above sea-level. The fishermen say that land has risen so much that the shallowness of the water has driven away the right whale, which, once abundant, is now rarely seen.

On the Pacific shores around Bhering Straits are low and flat, but a mile or two back there are ranges of bluffs parallel with the coast, and containing innumerable shells of the littoral species. If the theory is true, it offers a curious case of compensation. While the ocean is washing away Great Britain, France, Holland and New England, away to the north the continents are encroaching on the sea. The only thing to regret is that the process cannot be reversed, and Neptune enriched at the expense of the frozen north, and to the gain of the more habitable south.

HOME AND FARM.

Scallawag Stock.

It is not at all uncommon to hear a farmer declare that there is no profit in keeping fine cattle; that it would not pay him to purchase a good shorthorn bull at say five hundred dollars wherewith to improve his herd. Let us see how the thing figures up. He raises ten steers of what the drover denominates the scallawag sort, and sells them at three or four years old, or possibly he feeds them six years, when they realize four cents per pound on eight hundred pounds weight, which is equal to thirty-two dollars per head, or three hundred and twenty dollars. It is safe to say that the cost of these cattle will be not less than the price received, so that there will be no profit to the feeder, if there is no loss.

Another farmer raises ten grade shorthorn steers, which at three years old are sold at eight cents a pound, and weigh one thousand six hundred pounds each. Their money value is one thousand two hundred and eighty dollars. They may have cost six hundred and forty dollars to feed, which is double the cost of the scallawags, and then there is a profit of six hundred and forty dollars. This will represent a small part only of the gain made by the use of a thoroughbred bull; for at least he may be expected to sire twenty-five calves per annum during six or seven years, and his services will thus be found worth at any rate not less than three or four thousand dollars on this basis. Here is nothing counted to his credit, but the simple profit on beef alone, and that is based on the tangible and stable foundation of a market report. There is naught extenuated and naught set down in hope which may or may not be realized. Some farmers have said that this result is hopeless for them, that they cannot expect to gain one cent per pound extra from a drover for a better quality of stock. It is true that there are such farmers and that they say this, but it is strange if this is not a prejudice born of a want of energy and business tact.

How can beef differ in this respect from wool or pork, butter or cheese, or corn or wheat, all of which prices exactly in a ratio with their several qualities. Drovers who come across such men will "fool them to the top of their bent," undoubtedly, and will persuade them that good stock has no more value than poor, if possible; but it is hard to believe that in this age of newspapers, such a farmer could be found. "It is naught, it is naught, saith the buyer, but when he hath gone his way he boasteth;" and drovers are often such buyers, but it is a farmer's own fault if such a buyer ever has a chance to boast over a bargain of this sort made with him.—N. Y. Tribune.

Good Walks Around Farm Buildings.

There are too many in all sections who are in the habit of neglecting matters and things about the dwellings and out-buildings, which may be called small comforts. In many cases they are overlooked and are not considered of sufficient importance to deserve attention, at least any special attention. Among these there is nothing that add more, not merely to comfort and convenience but to the health of the family, than good walks about the house and premises. We have known these in many instances to be utterly neglected. They are regarded as good enough when the weather is dry, and when the weather is wet they cannot be made better. And thus year after year the members of the family are left to wade through mud to the cow stables, hog pens, wood or coal shed, to the pump or spring house, to the place of drying the wash, and so on.

Now the little labor it would cost to make hard, dry paths to all the points, is not worth mentioning. About every place there are stones, old mortar and brick, which could be laid down in an excavation of six inches and covered with coal ashes. This would last for a dozen years, and would always be dry in five minutes after a rain. Or, in lieu of this, lay down board walks, which, if taken up in the spring after the weather is settled, and carefully piled up, will last eight or ten years. Try it; it will save in shoe leather and doctor's bills four times as much as the cost, leaving out of the question the great convenience and comfort enjoyed.—Ex.

AMERICAN FARMERS.—The Artisan says: We hazard the assertion that no class of equal average means lives so well as American farmers. One of these possessing a farm and buildings worth say ten thousand dollars, will gather about him and enjoy more real comfort than could be obtained from the income of a hundred thousand dollars in New York. He may live in a more commodious dwelling than a metropolitan citizen having ten thousand dollars annual income. He may have his carriage and horses. His table may be supplied with everything fresh in its season. His labor is less wearing than the toil of counting-room and offices, and he has more leisure.

United States Bureau of Statistics.

The United States Bureau of Statistics publishes the following information, taken from the last census returns:

Wine has increased fourteen fold since 1830, and nearly doubled in the last decade, California being its chief producer.

Hops have increased seven fold in the same time, and more than doubled in the last ten years, New York growing two-thirds of the whole crop.

Barley has increased six fold. Flax six fold, and flaxseed trebled. Wheat trebled and oats doubled.

Irish potatoes have only increased one-third, and sweet decreased one-half.

Live stock have trebled in value, and now amount to the handsome total of one thousand five hundred and twenty-five million of dollars, or an average of nearly two hundred dollars for every family in the nation.

Animals slaughtered have nearly quadrupled in value, now amounting to four hundred millions of dollars annually.

Wool has increased from sixty to one hundred millions of pounds.

Cotton is half a million of bales above what it was in 1850, and three-fifths of its amount in 1860.

In only one instance is there a decrease of an important product, and that is in Indian corn, which falls short of the amount reported in 1866 by seventy-eight millions of bushels, or ten per cent. of the whole.

Why She Planted Roses.

A blacksmith had in his possession, but under mortgage, a house and piece of land. Like many others he was at one time fond of the social glass, but was happily induced by a friend to join the temperance society. About three months after, he observed his wife one morning busily employed planting rose bushes and fruit trees.

"Mary," said he, "I have owned this cot for five years, and yet I have never known you before care to improve and ornament it in this manner."

"Indeed," replied the smiling wife, "I had no heart to do it until you gave up drink. I had often thought of it before, but I was persuaded that, should I do it, some strangers would pluck the roses and eat the fruit; but now, with God's help and blessing, this cot will be ours and we and our children may expect to enjoy the produce. We shall pluck the roses and eat the fruit.—Ex.

Long Life of Farmers.

In a recent address before a Massachusetts Farmer's Club, Dr. Nathan Allen said that according to the registration report of deaths in Massachusetts, published now for about thirty years and preserved with more accuracy and completeness than anywhere else in the country, the longest age is found to obtain in agricultural life. In the ten different occupations as given in these reports, the cultivators of the earth stand as a class, at the head, reaching, on an average, the age of nearly sixty-five years, while that of the next class, merchants, is only about forty-nine years; that of mechanics of all kinds, about forty-eight years, and that of shoemakers about forty-four years. Thus there is an advantage of about fifteen years on the side of the farmer, as compared with merchants, and they reach an average age but little short of three score years and ten allotted by the Psalmist for human life.

THE MEN WHO PLOW.—In the following grim, grand way does Thomas Carlyle take off his hat to the man that plows, that hoes, and reaps, and mows, and thrashes wheat for bread: "The toil-worn craftsman that with earth-made instrument laboriously conquers the earth and makes her man's. Venerable to me is the hard hand, crooked, coarse, notwithstanding wherein lies a cunning virtue indefeasibly royal as the scepter of this planet. Venerable, too, is the rugged face, all weather-tanned, bearded, with its rude intelligence, for it is the face of a man, living manlike—the more venerable for the rudeness, even because we must pity as we love thee, hardly treated brother. For us thy back was so bent, for us were thy straight limbs and fingers so deformed. Thou were the conscript on whom the lot fell, and fighting our battles thou wert so marred! For in thee, too, lay a God-created form, but it was not to be unfolded; incrust must it stand with the thick adhesions and defacements of labor, and thy body, like thy soul, was not to know freedom. Yet toil on, toil on! thou art in thy duty, be out of it who may; thou toiler for the altogether indispensable, for daily bread."

PIAZZAS.—The plainest farm-house should have its broad piazza. To no other person is the luxury so desirable as to a farmer and to his family. When the heat of a summer day has passed, and the cool shades of evening begin to render "all out doors" an inviting place of resort, the mechanic sallies forth from his close shop, the lawyer from his musty office, the minister from his study, the broker from his counting-room, to enjoy with their wives an evening call, or a walk, or drive, and to them, as to the weary seamstress, it seems like a glorious rest. While to the farmer who has been bronzing and blistering all day in the sun, and to his wife who has for a large share of it been broiling over a hot

cook stove, the thought would prove anything but refreshing and comforting. To him, when he would rest at will, and surrounded by the lovely evening sights and sounds of nature, refresh his mind with the news of the day, or the pleasant chat of his assembled family, the broad piazza becomes an indispensable source of pleasure and comfort.—Ex.

The Flowering of the Fig.

To the uneducated eye the fig is a wonder. The fruit seems to come out in the place where flowers ought to be; and the appearance is that there are no flowers before the fruit, as there is in other plants. It was the habit in past ages to attribute something miraculous to every appearance out of the ordinary course of nature, and to take the occasion to connect these marvelous appearances with some individual whom they wished the world to venerate and esteem. So this fig tree marvel came to be associated with the flight of Mary into Egypt with the infant Jesus.

The Spaniards tell us that in her flight she sheltered herself under a fig tree. In recompense for the security afforded, she blessed the tree, and bestowed upon it marvelous power. It produces two crops a year, and this was one of the blessings then conferred. But in order that the tree might be fertilized—for even in those days it was known that flowers were of two sexes—the tree put forth, by her command, one magnificent white flower of rare beauty. It was pure white and shot forth rays of phosphorescent loveliness. This fructifies the whole tree, and renders any other flower unnecessary.

This flowering still continues every year on one night only—St. John's night. It opens for a few minutes at midnight, and whoever could see or secure this flower, at the expense of the whole future of fig culture, would possess himself of a charm which would enable him to procure anything he might desire in this world.

The Virgin Mary, knowing this, caused the fig, for this evening of its flowering to be guarded by all kinds of horrible things. There are snakes, lizards, bloated toads, birds of ill omen, wild beasts and venomous reptiles of every description, so that no one has ever been able to get near enough to see this miraculous and wonderful flower.

The story is firmly believed in by all those old Latin races, whose chance for life is cast in those regions where the fig-tree dwells; and has always been a sufficient reason to them why the fig-tree has never any flower, as they think.

What a pity it is that the cold hand of science is so ever ready to crush to death all these beautiful stories. It tells us, in spite of these lovely traditions of ages past, that the fig has flowers like unto any other plant, but the flowers are inside what we call the fruit. All flowers rest on something.

Take the apple for instance. The lowest are set on small globular productions. The floral parts, the stamens, rise out of the center of the globe; and after they die away this globe swells and becomes the apple which we eat. The fig is formed pretty much in the same way.

The little globe which we see pushing from the axle of the leaf, and which afterwards becomes the fruit, is filled with floral parts, just as we see in the apple; but these parts never project up the center so as to be seen by vulgar eyes. There is a small orifice at the apex through which the pollen is drawn, and that is all that is known to any one except of the more curious class.

The curiosity is rewarded, on breaking open a young flower, by finding it filled with a pink, spongy substance; each of the little projections composing it being found by a small pocket lens to be a small flower. Thus the mystery ceases. The fig is really a little community in which hundreds of individual flowers dwell, and thus ends in hard cold facts the mystery of the Virgin and fig-tree.—Ex.

PRESERVING GRAPES.—A recent process for preserving grapes through the winter, introduced by M. Tremellat, of Marseilles, is commended in agricultural journals as answering its purpose better than many of the improved methods of the day. This depends upon the fact, that in the ordinary storage of grapes, a portion of the water, both of the stem and of the berry, is lost by evaporation, so that they dry up unless moisture is restored to them. To obviate this difficulty the bunches are cut in such a manner as to leave a considerable portion of the adjacent woody part of the vine, and are then suspended over a vessel filled with water, so that while only hanging near the surface of the water the ends of the stems are immersed. As the moisture evaporates from the grapes it is restored by capillary absorption through the stem, and no change takes place. By means of the arrangement thus indicated, M. Tremellat has succeeded in keeping grapes from one year over into another, fresh and fair as in the moment of gathering, and his method is now used on a large scale in Paris and elsewhere.

Good nature, like the little busy bee, collects sweetness from every herb; while ill nature, like the spider, collects poison from honeyed flowers.

POULTRY NOTES.

Hen Surgery.

Mr. F. W. Babcock, of Fair Haven, Conn., thus writes upon the subject of "Hen Surgery:"

It has often been asked if many of the cures in the poultry books has ever been tried? The operation of removing a fowl's crop seems at first sight a difficult one and likely to be attended with fatal results, but having performed it upon several choice fowls and all having recovered, perhaps I can give some useful hints to other poultry fanciers.

During the past fall, a number of the writer's fowls obtained access to a large quantity of new yellow corn for several successive days, or until their crops were distended to their utmost capacity. Then by drinking plentifully of water the membrane swelled still more, until it was larger than a pint measure. In a few days their pain was so great and the certainty of their death so sure that I determined to try "hen surgery;" and, as is the case with other doctors, either to "kill or cure." Accordingly selected three of the worst cases, namely, a Brahma hen and a Dominique and white Leghorn cock, and made an experiment which saved them all, and set them to growing at an astonishing rate.

I first plucked off a handful of feathers near the top of the crop and made an incision one inch in length, avoiding all veins and nerves. I then by means of a small spoon removed the putrid mass and washed the inside of the crop with warm water, taking a few stitches in one case and in the other two, leaving the incision open. Then placing them in a coop for two days by a warm fire, and giving nothing but bread and milk for food. I had the satisfaction of saving them all, and in the case of the hen, securing fresh eggs the following week. The time occupied with each fowl was one hour and a quarter, the mass had been nearly as solid as lead and weighing in each case over two pounds.

IMPORTANCE OF A HEN LADDER.—A hen ladder, says an exchange, is an indispensable piece of furniture in a poultry house, though frequently absent. This is a sort of ascending scale of perches, one a little higher than the other, not exactly above its predecessor, but somewhat in advance. By neglecting the use of this very simple contrivance, many valuable fowls may be lost or severely injured, by attempting to fly down from their roost—an attempt from succeeding in which the birds are incapacitated, in consequence of the bulk of their body preponderating over the power of their wings.

STRANGE FREAK OF A HEN.—The Dumfries (Scotland) *Courier* says that not long ago, as a game-keeper at Kirroughtree was going his rounds a lady drew his attention to a hen's egg lying broken at the bottom of a tree. The lady requested John to ascend the tree in search of a hen, which she was certain must be somewhere perched amongst its branches. Branch after branch, however, was searched, but all to no purpose, and he was almost inclined to give up the search as hopeless, when he thought of giving it another trial. Climbing still higher, and when about fifty feet from the ground, he observed "chickey" sitting comfortably in a pigeon's nest, far away on an overhanging branch, which gave John no small trouble to reach, but which he did in safety, bringing six eggs with him, thus robbing the hen of her nest, but perhaps preventing a catastrophe at a future period.

RAPID DEVELOPMENT OF EGGS.—On leaving the ovary, the egg to be extruded a week hence is not much larger than a pea in a common pullet. In its passage through a tube hardly eight inches long, it imbibes fluids from the wall to increase its size. On its transit through the four inches the growth is still more rapid, while it also is coated over with lime, mixed like paint with mucus, which hardens quickly. That is the finishing process before being laid. In twenty days the eggs of one hen would exceed the weight of her body. So of any bird. Yet the whole of that mass of albumen is drawn directly from her blood. If stunted in food, of course it would limit the number as well. In the laying season, if domestic fowls can not range for insects and worms, which furnish albumen for their eggs, they must be fed with animal food to meet the demand upon their systems for that material.

TO PRODUCE EGGS.—More eggs can perhaps be obtained from hens by mixing breeds than by any other mode; and it is generally conceded that crossing also promotes the health of fowls far more than the vile practice, as some are pleased to term it, of in-and-in breeding. Little trouble need be apprehended from roup, gapes, cholera, and other diseases in poultry, if that care is observed in breeding and crossing that is so essential to all well regulated poultry yards.

PAINTING ZINC.—Oil paint may be made to adhere to sheet zinc by coating the latter with a composition of one part nitrate of copper, one part chloride of copper, and one of sal-ammoniac, dissolved in sixty-four parts of water; add to the solution one part hydrochloric acid. This should be left from twelve to twenty-four hours to dry. It acts also as a protection to the metal against atmospheric influences.

THE SWINE YARD.

Hints About Hogs.

Swine fill an important place in good husbandry, because they will convert into pork and manure very much on the farm, which would otherwise be lost. It is true that for a year or two past pork has sold at a very low price, which has had a discouraging effect upon those who have been engaged in rearing swine and making pork. But it is not likely that this state of the market will prevail for any considerable length of time to come.

The proper policy is to procure a sow of some first-rate breed, or else breed the best common sow you can find to a thoroughbred boar, and raise a good breeding sow. Make your plan so as to have two litters, one early in the spring, and the other long enough before winter to have them good size before cold weather sets in. Good pigs are always in demand, and good ones will always bring a full price. The same amount of food given to a good pig will make twice as much meat as when fed to a poor one.

Hogs and pigs should most certainly have occasional access to a good field of clover, or other suitable grass, both as a matter of economy and of health, as they will keep in good condition and grow rapidly thereon with but little or no feed.

The question is often asked, "What is the best breed of hogs to keep?" This is very difficult to answer. The breed that suits one will often not suit another. The Chester White is a good breed, far in advance of those preceding it. The Berkshire are a good breed, fatten well in proportion to their food, and are excellent breeders. The improved Suffolks, though not large, are a very fine breed.

Yorkshire Hogs.

A letter from a correspondent was read at a recent session of the New York Farmers' Club, soliciting some expression concerning the comparative merits of the Yorkshire and Chester breeds of hogs, to which Col. Curtis made the following reply:

"The Yorkshire is the base of all the improvements in the white breeds, they having been improved originally by the Chinese. It is an objection to them that they are thin-haired, and I have been trying for several years to produce a breed with all the good points of the Yorkshires, but with better hair. How well I have succeeded, is not for me to say. I have given them a good name—'Victoria,' after Queen Victoria—and I might add that I think they do honor to the noble lady. It is said that in the South the white breeds are more subject to skin diseases than the black ones; and I suppose that the less hair they have the more liable they are to blister and get diseased. The Jefferson County hog has taken the most premiums at our State Fair, and they are made up by crossing upon the Yorkshire. I think well of the Berkshires, but the Magie hogs are a good breed, as they are larger, and, although black and white, seem to be popular out West."

BOILING CORN IN THE EAR FOR HOGS.—An experienced man in Illinois says that he finds much economy in boiling corn in the ear and so feeding it to his hogs. He supposes that the alkalies contained in the cob act upon the flinty covering of the grain and soften it, while they also loosen the attachment of the kernel to the cob. Certainly, the animals prefer to have the corn in this fashion. They fatten faster and keep in finer condition.

We learn from the *Practical Farmer* that a fine porker was cured of pneumonia by a dose consisting of a tablespoonful of carbolic acid. It was also given to others mixed with the slop, though in much smaller doses, and soon stopped all further spread of the disease.

THE ANDES ON A DECLINE.—A recent number of the *Ausland* tells us a sad story of diminished altitude. Quito was found by La Condamine in 1745 to be 9,596 feet above the sea; Humboldt, in 1803, could only make 9,570 feet of it; Boussingault, in 1831, was started to find it was only 9,567 feet; Orton, in 1867, found it reduced to 9,520 feet; and Reiss and Stubel found, in 1870, that it had shrunk to only 9,356 feet above the level of the sea. Quito, it seems, has sunk 246 feet in 125 years, and Pichincha 218 feet in the same period. Its crater has sunk 425 feet during the last 26 years, and Antisana 165 feet in 64 years.

MISCELLANEOUS.

Zoellner's Theory of Terrestrial Magnetism.

Zoellner proposes a new theory in regard to the origin of terrestrial magnetism. He adopts the idea of drift currents upon the liquid surface of the sun, by means of which he tries to explain the movements of the sun-spots. These drift-currents originate, according to his conception, from the current of heat continually ascending from the interior, and from the rotation of the sun. Such currents, Professor Zoellner maintains, exist in all rotating cosmical bodies, even after the surface, cooled by radiation, has become rigid to a certain extent. This is the case with the earth, and the continuous regular currents of the interior liquid mass produce different effects upon the outer shell, mechanical, thermal, and also magnetical, the latter as a necessary consequence of the electricity originated by the currents. Zoellner further maintains that by this hypothesis the general phenomena of terrestrial magnetism may be satisfactorily explained, and that they are related to the currents of the inner liquid mass, and whatever effects these currents, as, for instance, volcanoes, reacts immediately upon the magnetism of the earth. Whenever a cosmical body becomes entirely solid, no induced magnetism can exist; so our moon, which appears entirely solidified, and in which all volcanic action has ceased long ago, has no influence on the terrestrial compass-needle.

That terrestrial magnetism is caused by electric currents running from east to west under its surface, and which compel the compass-needle to place itself at right angles with the current, thus in a north and south direction, according to the law discovered by Oerstedt, in 1819, was already suggested by Ampere forty years ago; but to apply this idea to cosmical bodies in general, and even to the sun, where a temperature prevails excluding all magnetic action, according to our present experience, is an idea entirely original with Zoellner, and if it were not supported by so eminent a name as Zoellner's, we would not take any notice of this theory.—*Exchange*.

Phenomena of the Spheroidal State of Liquids.

At the recent meeting of the British Association Mr. W. F. Barrett read an interesting paper upon the conditions affecting the spheroidal state of liquids and their possible relationship to steam boiler explosions. It appears, in brief, that he has found that the presence of alkalies or soaps in water quite perceptibly aids in the production of the phenomenon of the spheroidal state. He relates as one experiment, which first drew his attention to the subject, that having occasion once to cool a red-hot copper ball, he plunged it into some water in which he had just washed his hands. He states that, to his surprise, the ball entered the water without hissing, and without visible evolution of steam, and on being removed was apparently as hot as before.

This accidental observation led to experiments, with a view of ascertaining the causes of this curious phenomena, since it appeared impossible that the spheroidal state could be maintained with water by a body at so low a temperature. Fresh water was tried, but with a different result. The ball, upon immersion, evolved a loud hissing sound and gave off a copious discharge of steam. By adding a little soap to the water, he was enabled to reproduce the phenomenon at first observed, the ball entering the liquid quietly. Albumen, glycerine, and organic substances generally produced the same results.

The best method of reproducing the phenomenon, the author says, is to make use of a soap solution mixed with water, and to plunge into this a white-hot copper ball about two pounds in weight. The ball enters the liquid smoothly and quietly, and glows white-hot at a depth of a foot or more beneath the surface. Even against so great an hydrostatic pressure, the ball will be surrounded with a shell of vapor perhaps an inch in thickness. The total reflection of the light from the bounding surfaces of the vapor bubble surrounding the glowing ball, gives to the envelope the appearance of burnished silver, making the experiment quite an interesting one. As the ball gradually cools, the bounding envelope becomes thinner, and finally collapses altogether, followed by a loud report and the evolution of large volumes of steam. From the facts elucidated by his experiments, the author makes the suggestion that the traces of oil, or other organic matters which find their way into a steam boiler, may similarly produce a sudden generation of steam sufficient to account for certain problematical explosions.

MARBLEIZING SLATE.—The following is the new process employed for making slate assume the appearance of marble, for decorating interiors: After being properly cut and trimmed, it is scoured with pumice stone, then rubbed with powdered pumice stone, and polished with felt. It is now ready to be transformed into marble. The slabs, having been painted with the groundwork color, are ready to dip. A vat containing water mixed with ox gall, on which the colors are floated, is at hand. A brush is dipped in the colors and sprinkled on the surface; then the water is fanned with a

The Constitution of Matter—Matter and Force but a Single Entity.

Matter, as we conceive it, is inert, that is to say, is unable to change of its own accord its condition of motion or of rest. That which is capable of communicating a movement is known as force.

There are several forces of which we have knowledge—heat, light, electricity, magnetism, attraction of gravitation, life. For many centuries these various forces were considered as so many distinct entities, but in our age it is understood that they are merely different manifestations of a single force. In fact, these forms are converted one into another with the greatest facility. When we heat an iron bar, it lengthens, mechanical action is produced, heat is absorbed. If we could reduce the bar to its original size by compression, the mechanical work produced by the heat would be destroyed, but the heat absorbed would be set free. When we pass an electric current of certain intensity through a fine copper wire, the wire becomes hot; and at the time the intensity of the current diminishes, electricity is converted into heat. The identity of light and radiating heat has, moreover, been distinctly demonstrated, as well as that of electricity and magnetism. It may be considered certain, then that but a single force exists, manifesting itself to us under different aspects according to circumstances.

At the time when the different manifestations of force were thought to be so many distinct entities, the disappearance of heat, of light, and of electricity could only be accounted for by assuming a total annihilation of these agencies. On the other hand, since heat, light, and electricity are always everywhere found in Nature, besides their possible annihilation, some were led to conjecture the possibility of their creation and to seek for perpetual motion. We have passed this period of errors; mathematical calculation as well as experiment demonstrates that force can neither be created nor destroyed. A constant ever-living force exists in the universe, manifesting itself sometimes in one way, sometimes in another, but the sum of which is absolutely invariable.

Should we then preserve these two entities, force and matter, as having a distinct existence? I think not. Force and matter: these are abstract ideas serving to assist our comprehension of that which exists under a two-fold aspect. Accordingly, then, we should admit but one thing, matter endowed with motion.

All these forces with which we are acquainted are but the resultant of the motions of matter, and differ from one another only in the nature of this motion.

Finally, then, minute indivisible particles or ultimates grouped in atoms, molecules, and tangible bodies, each endowed with motion capable of being communicated from one to another without the possibility of the quantity of matter or motion being increased or diminished—such we hold is the grandest conception of the universe.—*Naguel, in the American Chemist*.

FILIFORM SILVER ARTIFICIALLY PRODUCED.—Native silver occurs frequently as metallic threads or wires twisted in every direction, and often bent at sharp angles. Specimens of this filiform silver were exhibited, from Kongsberg, in Norway, associated with calc spar, and from Chili, associated with greenstone, and it was shown that the metal was tough and non-crystalline. Precisely similar threads of silver were produced under the microscope by decomposing a solution of nitrate of silver with suboxide of copper. The white filaments shoot forth in every direction, and twist about or double back in their course; while the cuprous oxide becomes black, splitting up, in fact, into cupric oxide and cupric nitrate. Most of these threads are so fine that their diameter is only one-twenty-five thousandth of an inch, and a gramme of such silver wire would stretch from London to Brighton, and many are much finer still. Sometimes these filaments will end in crystalline knobs, or crystals of silver will form upon them, as is not unfrequently the case in mineralogical specimens. Attempts to prepare them by means of other substances than suboxide of copper had not proved successful; but, as that substance is by no means a rare mineral, it was thought that their formation might result generally from its action on silver salts in solution.—*Dr. J. H. Gladstone*.

DISCOVERY IN MAGNETISM.—Pagnet's recent discovery of new forms of permanent magnets is a matter of much interest to electricians. It is well known that it is impossible to magnetize a plate except in the direction of its greatest length, and that a square cannot be made to show the magnetic action at all. This new discovery, however, shows that by cutting slits nearly up to the middle of a steel plate, a square plate in one piece can, with such slits, be regularly magnetized. By this means even an oblong square can be regularly magnetized, and with as many poles as may be required, in a direction transverse to its greatest length.

PREVENTION OF EXPLOSION OF FULMINATES.—In the working of fulminate of mercury in the manufacture of percussion caps, dangerous explosions frequently take place. These may be to a great extent prevented, by granulating and mixing the fulminate in vacuo. A mixture of cyanide of copper and chlorate of potash may be substituted for fulminate of mercury.—*Ph. Neumann*.

FARMERS IN COUNCIL.

Farmers' Club of Sacramento.

Drying Fruit with Heated Air.

The club met Saturday, October 26th. Wm. M. Haynie, in behalf of the committee to attend and report on the experiment of curing grapes in Haynie's hop-house, as agreed upon last week, made a verbal report: That Mr. Rutter furnished, as agreed, the ton of Los Angeles grapes, and some of the White Muscat. Mr. Greenlaw contributed about twenty-five pounds of the purple fig. The hop-house is provided with a set of boxes with wire-cloth bottoms, and some twelve or fifteen feet below these boxes are a couple of large stoves or furnaces so arranged that the smoke passes off by pipes outside of the building, while the cool air passed in at openings at the bottom of the building, and being heated by the furnaces, passes up through the wire-cloth and grapes, and out at ventilations at the top of the building, the walls of the building being battened and calked very close. The fire was kept up during the day-time and allowed to cease during the night, so that the grapes had been subjected to the heating process about twenty hours. The committee exhibited some samples of dried grapes of each variety, and some of the figs. The Los Angeles grapes were, some of them, dried about right, and others were still soft or green, the curing being somewhat uneven. The White Muscat grapes were still quite soft and more imperfectly dried, while the figs were pretty fairly cured. But the heat had evidently been raised too high, the grapes having the taste of being somewhat cooked. The committee stated that they had to their satisfaction discovered that the moisture of the grape all passed off through the stem, the skin being water, steam and air-tight. The evidence of this was the fact that the grapes cured so slowly that no perceptible moisture passed off through the ventilation above, and the grapes themselves remained perfectly dry upon the surface during the whole process. Another evidence was the fact that the stems of the grapes while exposed to the heat became very dry and crisp, and when taken out very soon became restored to their natural toughness or elasticity. The committee were well satisfied from the experiment that making raisins by artificial heat could be made successful, practically and financially, but wire cloth to lay them on was objectionable. A better way would be to suspend them or lay them on some material which was a non-conductor of heat. Wherever the fruit came in contact with the wire it was cooked. They also thought the heat should be generated outside the building and forced through the fruit in the form of heated air. This suggestion brought up the process used by L. A. Gould, as referred to in last week's discussion.

Johnston said: You can't force the drying of grapes, and in his opinion the process used by Gould, called desiccating fruit, will prove a failure. The air as it passes through seems to take the substance and flavor of the fruit with it, leaving the fruit much like chips and tasteless. And there was no reason for constructing houses in which to cure grapes when they could be successfully cured on the vines and gathered in the form of raisins.

Aiken said the Committee on Dried Fruit refused to award Gould the first premium for his desiccated fruit, giving the sun-dried fruit the preference, and gave as a reason the one stated by Johnston. Grapes do not dry evenly on the vine. While some of the berries on the same bunch dry to a crisp others remain green.

Rutter agreed with Aiken in the last remark. He has White Muscat grapes of the first crop still hanging on the vines, and still as green as ever.

Manlove—It is easy to account for the opinions of Aiken and Rutter. Aiken's vineyard is on the river bottom, low land, and is covered with sand, which causes some of the grapes exposed to the reflection of the rays of the sun to scald and crisp, while those not so exposed are, by the natural dampness of the surrounding atmosphere, kept from drying at all; while Rutter irrigates his vineyard and thus keeps the sap running in the vines and to the grapes. He has 100 vines of White Muscat grapes evenly and successfully converted into raisins, and now hanging on the vines and ready for picking and packing. His vineyard is on clay or adobe soil, which, when not irrigated, absorbs the heat of the sun in the day-time and retains it in the night; thus keeping up the drying process of the grape. He had formerly dried all his fruit on scaffolds, but he had been taught by a Greek who had worked for him that the ground is better, as it is certainly much cheaper. When gathering his Muscat grapes for the market, he made a practice of assorting them—throwing the unmarketable bunches on the ground between the rows. Here they are allowed to remain until cured, when they are gathered up and packed as raisins, and he sells them at from 13c. to 15c. per lb. The expense of curing being nothing, he had found this practice to pay. Grapes or any other fruit will dry one-third faster on the ground than on boards, and better. A clay or adobe soil is the best, because it does not become so hot under the rays of the sun as to scald the fruit, while it retains the heat longer when the sun disappears.

Johnston said this is the mode of drying figs and grapes on the Mediterranean, and is undoubtedly the cheapest and perhaps the best. It is sometimes practiced to send heat through

under dirt scaffolds by means of furnaces constructed something after the style of the furnaces under brick kilns. This secures the continuance of the heat during the night, and takes advantage of all the heat of the sun in the day at the same time, and he thinks it questionable whether any drying house can be made that will be as economical and effective in this country as the method suggested.

Hoit said he had listened with a considerable interest to the report of the committee on the experiment of drying fruit in the hop-house, and he could not reconcile the idea that all the dampness of the grape passed off through the stem. The skins of grapes, if submitted to a microscopic examination, would be found like the skins of all other fruit, to contain pores. And the fact that no vapor or dampness could be perceived to pass from the fruit was no argument, for it must pass off in some way and could be seen if passing through the stem as well as if passing through the skin. Again, the fact that the stems become very brittle and crisp while exposed to the heat, was an argument against the theory of the committee rather than in its favor. If the dampness of the grape all passed through the stem, then this process would keep the stem moist and elastic. That the stem recovered its toughness when exposed to the atmosphere only proved that the dampness of the air was concentrated in it to restore the equilibrium of nature. This dampness did not necessarily come from the grape, which itself, as well as the stem, became more moist when exposed to the outside air than when first taken out, and for the same reason.

Recess.

The club here took a recess of fifteen minutes to try some raisins from the White Muscat and Los Angeles grapes, prepared by Rutter in the usual way—drying in the sun—also a box of luscious Muscat grapes which was presented to the club by Mr. Rutter. They were all pronounced excellent, and the thanks of the club were given to the donor. After recess, J. R. Johnston read the following essay on

Dried Fruits.

There is no occupation in the cultivation of the soil that brings profits and ready money to the farmer, and so satisfactorily proves the economy of labor generally, as that of growing and propagating fruits. It is also a source of wealth distributed among a class of men whose tastes and pursuits have alike been cultivated in early youth in the garden and nursery of their ancestors. Following this genial pursuit from instinct and habitual love, man plants the vine and the tree with anxious care and solicitude, hoping to enjoy with profit the promised fruits of his labor. Having accomplished this task, the blossom bursts forth, the golden fruit hangs upon the tree, his eager hands pluck the prize, and the heart is made glad to behold the bounties of an all-wise Providence! Such seems to be the sensations of the fruit-grower. Now we will look at the other side of the picture and prospect for the benefits to be derived from the drying and curing of fruits. Fruit-growers in California in general say that drying fruit will not pay. The reasons they give are that they have no convenient way to facilitate the work of drying, and that labor is too high to dry fruits in the ordinary way of sun drying. With these propositions I partly agree, but I differ from them by saying that the waste and falling fruits can be dried with profit. I do not recommend sun-drying upon scaffolds, but recommend the erection of drying houses, heated by pipes from an ordinary furnace or stove constructed for the purpose, or otherwise by kilns with a surface constructed, say twelve feet by twenty, and the furnace draft underneath. This kind of kiln can be constructed with brick or stone, and is well adapted for the quick drying of all kinds of fruits. Such kilns are used for drying fruit in Pennsylvania and Ohio. The advantages of kiln drying are apparent from the fact that the acid of the fruit is retained, and the saccharine properties of the fruit undergo no fermentation, only the vegetable and water substance is evaporated, leaving the fruit with all the solids and excellent flavor belonging to the juices of their several kinds. Such drying kilns can be constructed to last any length of time by being covered from the weather, and would be more convenient and economical than drying houses—they turn out better dried fruit. I have had considerable experience in drying fruits for the past fifteen years, and I find that to make a good quality of dried apples they must be cut or sliced when in the ripening state, but not fully ripe. The same will apply to the peach, plum and pear, also the smaller fruits. When dried sufficiently for keeping they should be immediately and compactly packed in boxes of suitable size, especially in California, in order that the fruit will not undergo the changes in our climate from humid to dry, which tend to mold and change the flavor.

In drying figs I believe the out-door surface drying kiln would be the best. The Smyrna and Sicily figs are dried upon a smooth, clean surface of hard clay, as also under glass in houses constructed for the purpose. So are the beautiful layers of white Malaga and blue Portugal raisins. The Zante currants are dried upon fire kilns and in ovens constructed for the purpose, at a temperature of heat not exceeding eighty degrees. The German and French prunes are dried in clay ovens similarly constructed. All of the imported fruits are similarly dried, and the condition and appearance they come in prove conclusively that they are cured by fire heat, by some mode or other. This should teach us all to abandon the lazy system of sun-drying, and stimulate us all to adopt the fire system,

and by this means give to our markets choice and saleable fruits. There is no country upon the face of the globe that produces better qualities or varieties of fruits for drying than California, and this business can be made a great source of wealth and one of the leading economies of the farmer.

In regard to the relative quantities of green fruits per pound required for one pound of dried fruit, it is variously estimated. One fact I do know, is that with our ripe fruit, the more it will take to make dried fruit. The proportion of apples varies from four to six pounds; peaches the same, when not too ripe; plums yield a larger per cent. in dried than any other fruit except figs; small fruits contract about 80 per cent.

In conclusion I would recommend all who cultivate fruits to remember that "a penny saved is a penny earned," and that drying fruits is one of the economies of the garden and orchard.

New Winery.

The Secretary read the following communication:

FRANKLIN, Sacramento county, Oct. 24, 1872. T. K. Stewart, Esq.—Sir: Will you please invite the grape-growers of the Sacramento Farmers' club to meet the following named gentlemen: Chas. D. Childs, Isaac Lee, Charles Lowell, C. A. Pearson, Joseph W. Hall, E. Baldwin, P. A. Strong, S. H. Merwin, R. Allen, N. Stewart, W. J. Barrett, A. H. Simmons and William Kendall, at the East Park, on Saturday, November 2d, at 10 o'clock A. M., to make arrangements to convert our grapes (next year and thereafter) into wine, at some convenient point, by the same machinery and by experienced men. By a proper effort now, on the part of the grape-growers, we can realize \$30 or \$40 per ton for our grapes, instead of \$15 per ton, the ruling price this year. All grape-growers are invited to be present and take part in the proceedings. Respectfully yours,

AMOS ADAMS.

On behalf of the gentlemen above named.

The invitation was accepted and a resolution passed, inviting the grape-growers to meet with this club after the adjournment of their meeting.

The meeting then adjourned.

The Club met Saturday, Nov. 2d.

Curing Grapes by Artificial Heat.

Mr. Greenlaw, from the committee to report on the experiment of curing grapes by artificial heat, stated that the committee had no meeting since the last meeting of the club, and were not prepared to complete their report. That the subject was one of considerable importance, and to investigate it fully would require considerable study and experiment, and hoped the club would allow the committee time and wait patiently for their final report. The committee were granted further time.

New Members.

On application, Warren Smith, Amos Adams, R. S. Locket, C. A. Pearson, John Smith and F. J. Thompson were elected members of the club and came forward and signed the constitution.

Co-operative Winery.

The subject for consideration, "a co-operative winery for the neighborhood," being called up, Mr. Greenlaw said farmers are generally very busy in the performance of duties at home, and are not generally inclined to talk much—but when a subject has been ventilated by others and the press, the farmers are ready to do the work. Those who have been members of the club any length of time, have learned that to accomplish anything for their general interest requires some talk as well as work. Farmers need to come together and interchange ideas and thoughts, and in this way get new ones, to learn each other's wants, and to learn to talk together and express opinions, and if those opinions be different, to learn in good humor, to reconcile them. Now let us talk about a plan for a co-operative winery, and if we have different ideas on this subject, as we likely will have, let us talk the matter over, and develop and adopt the best plan.

Here an extended and interesting discussion ensued, in which a variety of ideas and suggestions were made in relation to the organization and management of a co-operative winery, and resulting in the appointment of the following

Committee.

Adams moved that the Chair (Dr. Manlove) be the Chairman of a committee of nine—the other members to be appointed by the Chair—to report a place for the organization of a co-operative winery, and report three weeks from to-day to the club.

The motion was carried, and the following gentlemen compose the committee: W. S. Manlove, J. H. Kerr, William Beckman, A. Adams, R. S. Locket, T. J. Thompson, James Rutter, I. N. Hoag, R. Davenport, and C. S. Lowell.

Location.

On motion of Adams the committee was authorized to call for proposals for the location of the winery, and he would give five acres of land and \$100 in cash to have the same located on his place.

Punctual Meetings.

On motion of Davenport the members of the club were urged to meet hereafter punctually at 1 o'clock, in order that the business may be finished earlier, so that members can get home earlier.

Next Subject.

On motion of Johnston, the subject for the next meeting is "Wine Making, its Profits, etc."

Adjourned for one week.

Whenever the organization of the co-operative winery shall have been effected and some definite action taken, we will give it such notice as the importance of the undertaking may seem to deserve.

Napa County Farmers' Club.

SATURDAY, October 26, 1872.

Club met as usual; President W. A. Fisher in the chair. The question for discussion was announced by the President as follows: To-day we are to discuss the "Labor Question." It is especially important in view of the present circumstances. White skilled labor is scarce—not enough to supply the demand. The Chinese, upon whom we are dependent for help, have taken advantage of this circumstance and demand an increase of wages—more than they are worth, and more than we can afford to pay. The difficulty is beyond the reach of legislation. The value of labor depends upon the demand, which the Legislature can no more control than it can the succession of seasons. He hoped to hear something practical.

Mr. Nash said he had given the subject less thought than it merited, and could only speak of what he had learned by experience. The farmers have always some subject of complaint, none more serious than this one. Be the reason what it may, farming is not as profitable as it might be, nor as it has been. We sometimes feel discouraged when we foot up our accounts at the end of the year—but we can't quit. A business that doesn't pay isn't saleable, and we can only work on, hoping that the "good time" will come by-and-by. We can work together in these Clubs until the movement becomes general and strong, and then make things go differently.

Chinese labor, in the present crisis, is our only resource. The Chinese are thoroughly organized, and under discipline. They demand higher wages—as has been said, "more than they are worth; more than we are able to pay." The only practicable way to escape the dilemma, that suggested itself to him, is to pass a resolution round among the Clubs, to the effect that we will not pay more than a given sum for a day's labor, just as other employers do when employees strike on them.

For years past farm labor has been too high in this State. Almost the gross receipts of the farm are required to pay help, leaving the farmer a very scanty net income. Labor is organized. Mechanics and tradesmen of all kinds fix their prices. The railroads, professional men, the school-teachers, and even farm hands, all except the farmers themselves, club together for mutual support and protection. They set a price on their services and products, and the farmer must pay it. It is singular—unaccountable—that farmers will not unite, nor even think seriously and to the purpose, on these things. They are certainly as much entitled to consideration and pay as any other class of men, for they support all other classes.

Mr. Mansfield was satisfied that the farmers had been imposed on by the laboring classes. They always take advantage of his necessity to demand exorbitant prices for work. As to paying the Chinese more wages than heretofore, it is out of the question. He would rather have one white man than two Chinese; indeed, the more Chinese the greater the odds. But here we are in a dilemma, and the Chinese, perceiving it have struck. We must have help. He knew of no remedy at present.

Mr. Gridley was glad that the Club was giving attention to this matter. He believed that a little investigation and thought would dispel some of our common notions. He did not think there was any real conflict between labor and capital. The real difficulty here is that labor is scarce; there isn't muscle in the country to do the work. It is clearly to our interest either to drive the Chinese out of the country altogether, or to induce them to come until the country is flooded with them. There are just enough of them here now to form a class competing with intelligent labor, and the latter is driven from the field. This, however, is not our greatest grievance. We see that somehow our affairs do not go right, that we do not make money enough, and attribute it to whatever happens to be up—the wheat monopoly, the railroad or the Chinese. For his part he hoped to see the Chinese strike succeed this time, and word of its success go abroad. No more pressing invitation could be sent to laborers to come hither. True, we would suffer this season, but it is better that a few farmers suffer and labor reap the benefit. He liked to see labor organizations, and hoped that their influence would become so great as to tell in politics. We would be no worse off, if the Internationals, with their extravagant notions, would succeed, than we are at present.

Our difficulty, here in California, may be remedied. Laborers who come from the Eastern States are not satisfied with the treatment they receive here. We pay them fair wages for a little while, and then shove them out with their blankets to do the best they can until they are needed again. They are illy provided for, and no notice is taken of the fact that they are better than dumb cattle. No wonder labor is scarce, and of poor quality. Farmers themselves must turn over a new leaf. Treat men well and they appreciate it; treat them like men and they are men. He hoped to see nothing done by the Club that would discourage labor.

Mr. Fisher said the conflict is not so much between capital and labor as between two classes of labor. He agreed with Mr. Gridley as to the treatment of men. Intelligent and manly-feeling white men do not like to be put on an equality with the Chinese, nor confined to the barn. They like to be treated with respect, and will more than repay our kindness

by their faithfulness. He believed that the employment of Chinese is bad policy. They cannot become citizens, and of course have no interest in the country, beyond making money. They hoard their wages and drain the country of its gold without leaving here any adequate return.

Mr. McClure was struck with the proposition of Mr. Nash—that we, who have all along been denouncing rings should thus attempt to form one of the grandest rings yet, and arbitrarily fix the wages of our employes. The result would be a curse upon every farmer who entered into it. If every farmer in the Clubs throughout the State should obligate himself to pay only so much per day, farmers not in the Clubs, by paying a little advance would control the best labor, and leave the poor and inexperienced on our hands. We would merely shut ourselves out from fair competition. No such system can subserve any good end. Labor and its wages must be regulated by supply and demand. At some seasons farmers must have labor at any price. He saw the difficulty and thought he knew the reason. We do not treat our laborers well. As Mr. Gridley has said, "we should try to mend ourselves." No good reason exists why we should not have plenty of labor here. It is well paid, that is, so far as money goes.

Mr. Nash thought Mr. Gridley was wide of the mark. The reason laborers have left us is that they have got our money. They are well paid and not so badly treated. There is a material difference in working qualities, between a white man and a Chinaman. He proposed merely to regulate Chinese labor, to offer opposition to the ring they had formed for the purpose of extorting unreasonable wages from the farmer. He suggested a resolution to be signed by all who are obliged to hire Chinese help, in the Club or out of it. It is unfair to force intelligent white men, citizens of the country, to compete with the Chinese. The Chinese are not skilled, they are not citizens, they drain the country, and their wages ought to be regulated. They keep crawling up, exacting more and more, and are always ready to take advantage of a crisis like the present.

Mr. Gridley thought the disposition manifested by some members of the Club to force terms on employes, one of the strongest objections to its existence.

Mr. Brownlie. Mr. Gridley is right. The value of labor depends entirely upon supply and demand, and any attempt on the part of the Club to prescribe wages is arbitrary and out of place. He has three men that have been with him for five years, and a Chinaman that has been with him for nine years. One of the men he pays \$35 per month; and the Chinaman \$30. These are the facts, the Club may draw its own inferences. Thought that any action of the Club would be premature, because the present state of affairs could not continue long.

Mr. Marshall said he had only a small farm and required but little help. Had employed only one Chinaman, and that only for one day, since he had been in the country. He always furnished his hands well, paid them good wages and they staid as long as he wanted them.

Mr. Robinson said that the labor question assumes a different aspect here from what it does in the East. Men come here mature, and they required men's wages if they did boys' work. Back there much work is done on the farm by boys. Here farmers' boys do not think of going out to work. It will be a long time before we have the same supply here, unless we go to raising boys. Foreigners who come here soon find homes and become employers themselves. He had no experience with Chinese labor and wanted none. Thought it a good idea, and profitable, to keep men busy all the year, in improving the farm. Thought any action of the Club would amount to nothing; for when laborers can be had for \$1 per day, nobody will pay \$1.50; and when they demand \$2 the farmers must pay it.

Mr. Fisher said wheat farmers cannot afford to hire men by the year. There are only two seasons in which they need help. It had been his custom, when he got a good man to pay him well; when he got a poor one to let him go. Men who come here from the East come to make money. Their expectations are too high; they are disappointed, and hence are not so content with their treatment and wages as they were there. He thought the Chinese were estimated too low. They are good at some kinds of labor, and good ones want good wages. At any rate they must be our chief dependence for some time to come. He thought it an easy matter to say how much they could afford to pay for their work.

Mr. Duhig said he required but little help on his place. He had let work to the Chinese by the job and found they could do more than they could by the day. He thought this the better way. White men will get all they can, and each farmer must look out for himself, that he does not pay too much. We can't force men to stay with us. He tried to treat his men well; at the same time he got all the work out of them he could. He did not hire men for ornament, but to do his work. It is difficult to keep good men long, because they soon get homes for themselves; and poor ones nobody wanted long.

Time having expired, Mr. Brownlie suggested a continuance of the subject, which was agreed to.

By motion of the Club, Mr. Gridley was requested to prepare an essay on the subject of the discussion, to be read on Saturday two weeks, Nov. 9th. Further discussion of the question was also deferred to that day. Mean-

time, the subject for next Saturday, Nov. 2d, is "Stock Raising."

The Secretary was requested to communicate with Prof. Carr, with reference to engaging him for a lecture before the Club.

Club adjourned. G. W. HENNING, Sec'y.—*Napa Register.*

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The Club met at the usual time. The officers being absent Mr. Jessie Hobson was chosen temporary President and W. W. Kennedy, Secretary.

The minutes of the preceding meeting were read and approved.

Mr. Settle moved that the President be requested to withdraw his resignation which was carried unanimously.

Mr. Herring had, on the minutes of the previous meeting, offered his resignation. Mr. Dubois offered a resolution to the effect that the interest of the Club required that he should continue, and requesting him to withdraw his resignation. The resolution was unanimously adopted.

On motion of Mr. Cadwell the Club adopted a new order of business, in which any member of the Club may ask for information in regard to his business, which may be replied to by any or all members of the Club, before taking up the regular question of the day.

Mr. Cadwell appeared to think that the question of taxation had been disposed of in rather an unsatisfactory manner at the preceding meeting, and moved that the subject be referred to a Committee of three, which was adopted, and the President appointed Messrs. Cadwell, Settle and Ware said Committee.

Mr. Settle moved that hereafter

The Hour for Adjourning

Be fixed at three o'clock, which was carried after a short discussion.

Mr. Burgland moved that we take up and decide whether we do or do not belong to the

The California Farmer's Union.

A short discussion followed in which Messrs. Burgland and Settle favored immediate action and Kennedy opposed. Mr. Dubois thought the matter out of order. Mr. Chipman thought not, said it was on the table and could be called up by motion at any time, and moved that it be adopted as the question for discussion on Saturday, Nov. 14th. Mr. Ware was requested in the meantime to procure an official copy of the Cal. Farmer's Union. The question adopted for discussion at our next meeting is "How shall we best procure green feed during the dry season?"

What Should We Discuss.

The Club next proceeded to discuss the following:

Resolved: That all questions selected by this Club for discussion shall have a direct and special bearing on agricultural and horticultural interest. Mr. O. Cottle favored the resolution but was not going to make an argument, we had all seen that discussing other subjects had materially effected the interests of the Club.

Mr. York was opposed to the resolution on general principles. Farmers are interested in everything, and should be free to gain information on, and discuss any subject. It is this thing of tying people down that leads to slavery. Mr. Erkson is opposed also. He considers all household affairs and mechanics just as interesting. Mr. Burgland is no one idea man, he believes we should be free to discuss everything, because with the spread of intelligence everything belongs to the farmer. Don't let us pin ourselves down to the raising of pumpkins. That is good, but are not commerce and trade and school and government worthy of our attention?

Mr. Cottle thinks agriculture a big subject. There is plenty of ground to occupy our two hours; science is beyond our reach and if we meddle with schools or government we will make a terrible muddle of them. We can't prosper without some such restriction as is proposed in the resolution.

Mr. Dubois thinks it too late to talk about shutting us down to potato digging and the like and let others tax us and take everything from us excepting barley enough to keep us alive; he believes we should be free to examine and discuss any and all questions. We are part of the body politic and everything that pertains to us.

Mr. Settle don't propose taking any one out of the body politic, but if we are a farmers' club let us discuss farming. If we were a temperance society we would devote our attention to the temperance cause.

Mr. Holloway believes in remaining perfectly free to discuss whatever interests the most. We have to select our law-makers and teachers and how can we do it intelligently without we agitate such subjects. What good to raise potatoes if they were to be of no value to us after we have them; just so with this society; don't let us lose off any of its good qualities.

We have often heard that a person was of no account if he never made anybody mad. The things that we dislike are often for our best interest, so, perhaps, the things we dislike about the society may be for its best interest. We must have some frictions in the club in order to be assured of life and interest. Let

each extend to all, the privilege he would like to have for himself, of selecting for discussion whatever questions the majority may desire.

The hour having arrived the President declared the Club adjourned till next Saturday at 1 P. M.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

Meeting October 25th. President Dr. E. S. Carr, presiding. Before calling to order he exhibited a bar of the

Metal Aluminum.

It is of white color and scarcely heavier than hard wood; has a clearing, and with 10 per cent. copper makes a malleable article called oriole, appearing much like gold. In its natural state it does not corrode and would make as good or better article for spoons and tableware as silver, save that it would not be so expensive. It can be used for plating base metals more cheaply than nickel. It is produced from alumina, a clay-like earth. Mr. Pryal exhibited a

Caladium Esculentum

(The taro of the Sandwich Islands), leaf which measured 2½ feet long by 32 inches in breadth. It was grown on the place of Mr. Kelsey, and is a soft, pliable, beautiful leaf. This plant has been cultivated but a few years in California. Older plants, in other countries are said to attain nearly twice these dimensions.

Mr. Pryal also presented what he claims to be the first red seedling potato produced in California; also a seedling kidney—both small as the first product. The seeds were planted 4 months since in his greenhouse.

E. P. Sanford exhibited, to the admiration of ladies and others present, samples of a

Fine and Beautiful Moss

Brought from Cloverdale by a lady who requested the name of the same. Her question will be answered after critical examination. Dr. Gibbons' lecture on

"Scale Insects,"

(Published elsewhere in the RURAL) was attentively received, and a hearty vote of thanks given him. It was illustrated with large drawings on canvas.

In reply to questions, Dr. Gibbons said he had noticed the acarida only during the last year. Thought they were brought through nursery stock. Mr. Pryal also believed they came with imported trees. Mr. Bagge said he had seen the scales on oak trees ten years ago, and thought they belonged to this State. As we have no severe winters, it was thought that without prompt action they would prove a greater scourge here than elsewhere. In answer to Mr. Hyatt about the

Grape Insect

Dr. Gibbons said he had been told that charcoal, well pounded and mixed placed around the roots was effectual in removing them.

Mrs. Carr said Dr. Strentzel's practice was when the leaves began to fall to remove the soil at the base of the vines; the rains wash the insects out.

Mr. Montandon recommended lime dissolved in water. Some used the common dust on the road.

Mr. Pryal knew of boiling water having been used.

The Horse Disease

Was referred to by Messrs. Pryal, Dwinelle and Dr. Sherman. The latter said that the disease seemed to be sporadic and not epidemic. The symptoms were inflammation of the capillaries of the horse, and the head swells very much. He thought there was no occasion to fear the disease coming here. On motion Messrs. Thomas Hart Hyatt, G. D. Jewett and J. V. Webster were appointed by the President, a committee to report information on this subject at the next meeting.

Drinking Fountain,

Mr. Pryal reported that President Chabot of the Contra Costa Water Co., had consented to furnish water free for a drinking fountain, whereupon a vote of thanks was tendered the company for this prompt act of generosity. The subject of

Forest Tree Culture,

Was decided upon for discussion at the next meeting, Friday evening, November 8th.

SHERMAN ISLAND.—The overflow of Sherman

Island last winter, although producing great damage, was not wholly destructive. The farmers have been enabled to raise a fair crop of potatoes. The Antioch Ledger says that the levee is approaching completion, and that its dimensions are such as will hereafter prove an effective barrier to the floods.

THE LAST NOVELTY IN PATENTS.—Three

Chinese have taken out a patent in Paris for the invention of a new automatic and autographic continuous telegraphic instrument, by the aid of which apparatus the dispatch is transmitted to the receiver as an exact fac-simile of the transmitter's autograph.

The Moon's Changes.

A correspondent says he "would like to have us answer an agricultural (?) question or two." He puts his questions in this wise: "If the changes of the moon affect the weather, why not the growth of plants? And do you not believe that it is better to plant some kinds of seeds, and transplant young trees in a certain time of the moon's changes?"

We believe nothing of the kind. The changes of the moon, as harped upon by some as affecting the growth of vegetation and changes of the weather, are simply "moonshine." The attraction of gravitation, the only effect—except that of light—really felt by our planet; and causing the diurnal tides, is always the same, for the plain reason that the moon is always of the same size, always exerting the same influence.

The effect of its light is not discernible on vegetation. In any portion of the Atlantic States it is not unusual to have the light of the moon entirely obscured by clouds, during the whole season of its increase and full, and yet no one ever observed the least possible effect in the growth or even the color of plants from the absence of its light.

If farmers would give more attention to securing good seed, putting their lands in better condition for the reception of it, and more care in the management and culture of their crops, they might "whistle at the moon," so far as its power to affect them either for good or evil is concerned. We would like to have some one tell us, if he can, what effect the changes of the moon have had upon the almost unclouded California skies the last six months; why they have not been able even to "lay the dust."

Reversible Water Filter.

A filter that cannot be reversed, and thus made self-cleaning, says the *Scientific American*, is not worth much. A filter that does not allow the filtered water to rise, instead of falling, into the pure water chamber, is imperfect.

The engraving on page 294 represents a filter adapted to all the purposes for which filters are used, which is essentially a self-cleaning filter, in which the water leaves all its sediment behind as it bubbles up into the pure water chamber in the center of the filter. The filter is supported on central trunnions in a wooden frame, and is turned, end for end, by simply detaching the supply pipe. The valves act by their own gravity as the filter is reversed. The perforated heads, which confine the filtering material and secures the central cylinder, are loose disks held in place by the outside heads. For further particulars address H. N. Taft, 18 Lafayette Place, New York City.

Horse Disease.

The Toronto *Globe* published where the horse disease first broke out, has the following remarks on the subject, inspired no doubt by Dr. Smith, principal of the Toronto Veterinary School, a gentleman of thorough education on all diseases of the horse. "The disease that has so widely spread among horses in this district appears to have run its course, and now shows considerable abatement. Dr. Smith informs us that this is the case in the principal stables in the city. The disease now appears to be extending eastward. There have been very few fatal cases, and of those it may be said they were the result of a want of ordinary care of the animal, or, what is less excusable, a resort to quack nostrums and practice. These are entirely useless in a disorder like the present, which must run its course, and requires simply attention and ordinary treatment during the continuance of the fever."

Later reports state that the disease is raging throughout Western New York. It is in the form of influenza, and of catarrhal characteristics. The first symptoms noticed are a flow of tears, a watery discharge from the nose, and a general languor and cough. The nature of the disease seems to puzzle the veterinary surgeons. Blood letting and drenching have been found to fail to cure, and many die from this treatment. Among the various remedies are solution of tar belladonna and acouite given homeopathically, and Taylor's Compound Food, a product of the Manhattan Feed Company. This last method is the only remedy that has met with marked success as a preventive, and has cured many cases in Jersey City and Hoboken.

A New York special of Oct. 28th, to a Chicago paper, gives the result of a post mortem examination of a horse dead of the new disorder. On opening the throat the membrane lining of the larynx was found covered with bloody mucus. This mucus, gathering in the gullet above the larynx passes into the larynx and causes inflammation. The mucus working up and down in the larynx lodges in the tubes connecting with the lungs and produces pneumonia. It first strikes the left lung and if inflammation sets in, the right lung becomes affected and death ensues from what is styled "Double Pneumonia." All other parts of the body were found in a healthy condition. The result of the examination shows it to be important to force the mucus through the nose and thereby prevent its passage through the larynx into the lungs.

Solano and Napa Fair.

The first Annual Fair of the Napa and Solano District Agricultural Society was duly inaugurated Tuesday, Oct. 8th.

Opening Day.

The initiatory steps of forming the society and locating the grounds at Vallejo were taken late in the season, and taking into consideration the amount of labor performed in erecting the buildings and grading the track with limited capital to disburse, the improvements will certainly satisfy the most querulous and speaks well for the officers and Trustees having charge of the work.

The road between the city and race course, having been well sprinkled, is in fine condition and affords a pleasant drive for any and all who may wish to see the races and stock.

Pavilion.

The hall was tastefully decorated with flags, evergreens, etc. The handiwork of Mr. James M. Thompson and lady of Suscol is everywhere visible. The handsome evergreen wreaths made by this gentleman at his orchards and nursery were an attractive feature in the decorations of the hall. The wreaths were hung in festoons and were over one hundred feet in length. They are composed of twenty-five different varieties of evergreens. The general display of articles on exhibition is excellent, calling forth much praise from the visitors.

Opening Address.

Professor Carr began his remarks by referring to the importance of education. He said it was necessary to the man of business, the mechanic and the laborer as well as those who pursue a profession. Education was necessary to the maintenance of the liberties of the Republic. But to no class of men was a systematic education more indispensable than to agriculturists. [Our space will not admit of giving the address at length.—Ed. RURAL.]

Entries.

J. M. Thompson makes an extremely fine display of fruit from his orchards at Suscol. The exhibition contains one hundred and fifteen different kinds of apples, alone, ranging from the mammoth Gloria Mundi, down to the smaller but more finely flavored varieties. Of the pears and grapes there are ninety-five different varieties, sixty-five of the former and thirty of the latter. The fruits are contained on two long tables in the center of the room, and are by far the most attractive feature of the vegetable exhibitions. Besides these fruits, Mr. Thompson enters a fine assortment of French sugar beets, pumpkins of enormous size, potatoes, squashes, broom corn, musk melons, corn on the stalk, etc.

W. S. Jacks, of Napa, exhibits a fine variety of choice plants and shrubbery.

J. B. Frisbie, of Vallejo, makes a handsome display of vegetables including sugar beets of the German variety, mangrel wurtzels, etc., and a collection of trees and shrubbery. Among the latter a specimen of the century is noticeable.

Mrs. R. E. F. Moore, from Suscol, exhibits, also, a table of magnificent fruits, apples and pears.

Mrs. Alex. W. Brown, of Vallejo, displays preserved fruit.

M. R. Miller of Pleasant Valley, Solano, four boxes of raisins.

Second Day—Wednesday—At the Park.

The scene of the Fair grounds this morning is interesting and pleasant in the extreme. The parade of stock took place at the appointed hour, 10 A. M. Every one acknowledged the show of thoroughbred and graded stock to be splendid.

The pavilion, presents a splendid appearance, and is none the less to be admired because it far surpasses in appearance the previously formed expectations of its visitors. The articles are all arranged after an excellent method, so that not only each is exhibited to the best advantage, but the general appearance is striking and handsome. As we have intimated, the display in variety and quality is much superior to anything which the public have been led to expect. All unite in expressions of admiration, and exhibitors feel proud that with the first exhibition of the Society so complete a success should have been attained.

We notice the following additional exhibitors: Mrs. R. E. F. Moore, of Suscol, exhibits an extremely large variety of pears. It is most edible looking fruit, and nearly equals in size the famous Napa pear of General Jacks.

J. M. Thompson, of Napa, displays a lot of corn on the stalk; the stock stands twelve feet in height, and was grown by Mr. Thompson on a piece of reclaimed salt marsh.

W. B. Miller, of Pleasant Valley, makes a splendid display of raisins quite equaling in quality the famous Malaga. As an instance of the profit to be derived from this branch of industry, it may be mentioned that the exhibitor cured one ton of these raisins, last year, which he disposed of at fifteen cents per pound. This year he will cure five tons, which will undoubtedly command as good a figure.

Robert Brownlie, of Suscol, exhibits twenty-one fine varieties of grapes picked from his vineyard. These are as fine grapes as any ever exhibited in the State, without exception, and were raised by Mr. Brownlie on a piece of ground which four years ago, he could not have

given away. An evidence of the splendid average excellence of Mr. Brownlie's vineyard may be found in the fact that all these varieties on exhibition were picked in twenty minutes.

Third Day—Thursday.

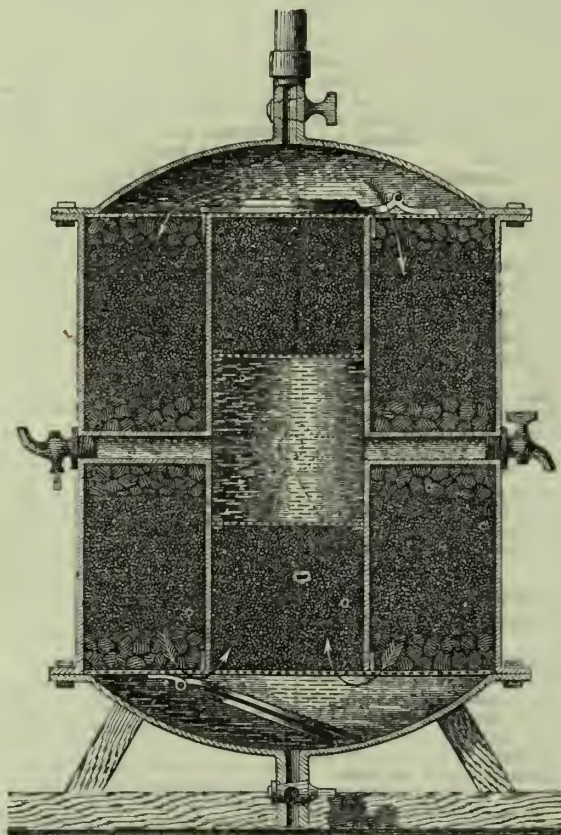
The display of stock this morning was particularly interesting, as the thoroughbreds showed to good advantage, while the graded stock was good. The cattle were first brought out and led into the centre of the Park, after which the horses were paraded around the track and taken into the Park also. After waiting some little time for the Judges, the stock was dismissed, the cattle was taken to the stalls and the roadsters put upon the track for exercise, which amused the spectators for a short while, as many of them were fast and made good time. The attendance at the Park, to-day, is much larger than on the two previous days.

The Pavilion.

The Pavilion during the day was attended by many, and in the evening, was crowded to its utmost capacity. The number present, in fact, was larger than on the previous night. We continue the list of exhibitors and articles exhibited: George McMullen, Suisun, exhibits a sack of fine Chili wheat grown on his farm. The crop of which it is a part averaged forty-five bushels to the acre.

Mrs. C. Hutton, Vacaville, wheat bread.

George F. Logan, of St. Helena, makes a very fine display of agricultural products. It embraces twenty-five varieties of apples and nine of pears, also dried apples, peaches and plums.



REVERSIBLE FILTER.

The most interesting feature of the display is a variety of Egyptian corn, the seed of which came from the Egyptian tombs and was received from Illinois by Mr. Logan. We understand there is nothing like it on this coast and probably none within the United States, excepting Illinois. The kernel of the corn is about the size of a grain of wheat, and resembles it somewhat in appearance. They grow in a thick heavy cluster, being about the size of a tea cup. Mr. Logan has planted this corn for the two past years, and finds by experience that it yields better in a poor sandy soil than in fertile ground. R. B. Woodward, Oak Knoll, exhibits numerous varieties of apples.

[It is quite impossible for us to give the full list of beautiful and useful articles placed on exhibition by numerous contributors.—Ed. RURAL.]

Stock, Etc., at the Park.

CLASS 1.—N. Coombs, 4 thoroughbred stallions, Lodi, Bimere, Photos and Ruth Ryan. Geo. Reaves, 1 horse for all work.

CLASS 3.—G. Bement, 1 stallion, General Taylor; J. Grogan, 1 stallion for all work; N. Coombs, 1 filly three years old; L. B. Abernathie, 1 stallion, Happy Jack; John Farmer, 1 filly three years old; P. Dillon, 1 brood mare.

CLASS 4.—R. W. Pemberton, 1 stallion, Prince June; W. Middleton, 1 span of draft and brood mares, Suscol Maid and Black Bess; John Wilson, 3 fillies; J. Grogan, 1 draft mare; L. Radcliffe, 1 mare roadster, 1 stallion, 1 draft mare; T. Morgan, 1 draft stallion.

CLASS 5.—M. L. Durbin, 1 horse, Rob Roy; E. Bonham, 1 stallion, Charlie Hendricks; John E. Williston, 1 Morgan stallion; Jno. Brownlie, 1 horse, Billy, roadster; E. McGettigan, Gratz Brown; T. J. Waldran, 1 mare, Minnie Waldron; Vick, 1 horse, Ethan Allen, roadster; J. A. Hill, 1 horse, John Morgan; G. Bement, 1 stallion, General Taylor, 1 mare, Highland Mary; John Wilson, 2 draft stallions; O. T. Tyler, 1 pacing mare; P. Dillon, 1 pac-

ing horse; J. Grogan, 1 stallion, Hamiltonian Chief; J. Jacks, 1 stallion, Robert Burns; Jno. Callender, 1 gelding horse, Baldy, 1 gelding horse, Stormy Bill; William Clark, 1 mare and colt, 1 span of geldings; M. D. Cooper, 1 span of mares; John Farmer, 1 mare three years old.

CLASS 6.—M. L. Durbin, 1 double team, horse P D and mare Josie, 1 mare Jennie and 1 saddle horse; E. McGettigan, 1 horse Lum-mux; G. C. McMullen, 1 double team, Frank and Fisher, roadsters; J. M. Thompson, 1 span of mules, Tom and Jennie; John Wilson, 1 horse and one mare; D. Dutton, 1 span of roadsters; John Callender, 1 double team.

CLASS 7.—J. M. Thompson, 1 Durham bull; P. S. Weaver, 1 Jersey bull, 1 Jersey heifer; John Hollman, 1 Durham heifer; Wm. Fleming, 2 Durham bulls, 1 Devonshire bull, 1 Durham cow, 1 Durham heifer; Cannon & Staples, 1 Durham bull, 2 Durham heifers; E. Hussey, Durham bull.

CLASS 8.—D. W. Harrier, 1 fat ox.

CLASS 9.—J. A. Hill, 1 Spanish Merino buck; G. Bement, 1 Southdown buck, 3 Southdown ewes; J. M. Thompson, 1 Southdown buck, 3 Southdown lambs; W. Fleming, 1 Cotswold buck, 3 Cotswold ewes; J. A. Hill, 1 Merino buck, 3 Merino ewes.

CLASS 10.—S. Wing, 1 Angora buck goat; 1 Angora ewe, 1 Angora kid.

CLASS 11.—J. A. Hill, 1 Berkshire boar, G. Bement, 1 boar; S. Wing, 1 Berkshire boar, 1 Berkshire sow, 2 Berkshire pigs; Cannon & Staples, 5 head of hogs.

CLASS 12.—G. Bement, of Napa, poultry

Increased Consumption of Sugar.

Though the manufacture of sugar was commenced in the West Indies early in the sixteenth century, yet its use in domestic economy did not become general in Europe or America before the beginning of the last century. In the year 1700, only 10,000 tons were used in Great Britain, though the English were at that time the leading manufacturers of sugar. The consumption of sugar in the British Islands in the year 1870 is stated at 600,000 tons. In this country the consumption of sugar is steadily increasing. Since the close of the late war, the ratio of increase has been about 10 per cent. annually, and in the year 1871 the sugar consumed in the United States amounted to 700,000 tons, an increase of 15 per cent. on the preceding year. This is the largest consumption of sugar, in proportion to the population, found in any nation on the globe. A very small proportion of the sugar consumed in the United States is produced within our own territory, while in Europe the production of sugar is rapidly increasing and bids fair soon to render the principal nations of that quarter independent of the tropical regions in regard to the supply of sugar. Since the year 1850, the production of sugar from beets in France has risen from 60,000 tons to 300,000; in Austria, from 10,000 to 80,000 tons; and Russia, where beet-culture was introduced since 1850, now produces 100,000 tons of sugar. The increased consumption of sugar may be taken as the evidence of an advance toward a higher civilization.—*Ag. Report for September.*

The River Nile.

The bed of the Nile, like that of the lower Mississippi, is higher than the valley through which it passes. Warburton said: The Nile's bed is a sort of savings bank by means of which the deposits of four thousand years have enabled him to rise in the world and run along a causeway of his own. It is the only river in the world which runs upward of twelve hundred miles, in undiminished volume, without a tributary stream. It moves on its long course without the help of even a creek, tapped by innumerable canals and thirsty gardens with which it is fringed, absorbed by hot sand banks and hotter sun, and empties greater bulk at its mouths than it has between the cataracts. The products of Egypt are the gifts of this stream. The land on which the towns and hamlets of Egypt repose is foreign soil, brought from the far south by this public carrier. For more than four thousand years he has faithfully brought his burden and deposited it at the feet of Egypt. The Rameses and the Ptolemies come and go, and the Nile remains unchanged.

MELON SYRUP.—Mr. A. W. Lester, of the Colonia, has kindly brought to the Signal office three specimens of syrup made from watermelons. He is from Oskaloosa, Iowa, where the manufacture of sorghum molasses is as common among the farmers as the growing of corn. Coming into this region a few days ago he observed that watermelons here were unusually sweet, and the idea at once occurred to him that they could be turned to account in the manufacture of syrup. His experiments were so successful that he now proposes to go extensively into the business next summer. The sample in our possession is as thick as honey and as clear and golden as the best cane or sugar syrup, and of a very pleasant flavor. He thinks there would be no difficulty in converting it into sugar. From a single melon he obtained over three and a half ounces. As melons can be produced in Southern California in unlimited quantity, and of superior quality, we see no reason why people here should not make syrup for home use if not for export.—*Ventura Signal.*

AMERICAN INVENTIVE GENIUS.—American genius stands pre-eminent in the perfection of mechanical appliances to supersede manual work. Perfect invention to this end is, indeed, the offspring of necessity in the United States, where scarcity of hand labor has forced forward, to an almost inconceivable degree, human ingenuity. In this special branch of invention, there can be no dispute that the Yankee can give the world long odds and beat him. In England, where labor has been always abundant, and until of late, cheap, the genius of invention has trodden rather the higher than the humbler path, has tended rather to achieve great ends than to effect simple purposes, has given mechanical handicraft less attention and devoted itself to great physical revolutions. In America, it is far different; there is scarcely an industry too humble, a labor too mechanical or common to escape the attention of the inventor, who, with an almost infinite ingenuity, sets himself to work to combine all the known mechanical movements and invent new ones, until the slight of hand of the operator is imitated to the life, and the dead metal is imbued with life and power with which flesh and blood cannot compete.—*Engineering.*

Silver-spangled Polands, Japanese Bantams, Buff Cochins, Japanese Silkys, Brahmas, Frizzled Dorkins, 1 pair of games; P. S. Weaver, 1 pair of Cochins chickens; J. G. Carrington, of Denver, exhibits fowls—3 Hondans, three Golden Polands, 3 Silver Polands, 2 dark Brahmas, 2 imported Brahmas, 1 cock and 9 hens (Farmer's Pride), 3 Buff Cochins.

Friday—Last Day.

The display at the Park this morning was well worth witnessing, and the number of visitors was much larger than yesterday. The stock was led out, and looked fine. The several committees were busily engaged in passing upon the same, and awarding premiums.

After the awards were announced at the Pavilion, the premiums were paid by the Secretary. The fruit and vegetables were sold at auction for the benefit of the Society.

The day drawing to a close, Major W. G. Morris called the assembly to order and announced the Fair of the Napa and Solano District Agricultural and Mechanical Art Society closed, and in a few appropriate and well-timed remarks thanked the visitors and exhibitors kindly for the good order which had prevailed, and that one year from this they would give them a fair equal to any district fair in the State, the crowd cheering him lustily and departing for their respective homes.

NARROW GAUGE RAILWAYS are exciting great attention in Great Britain, and Mr. Robert F. Fairlie has just published in London a pamphlet entitled "Railways or No Railways, or the Battle of the Gauges Renewed in 1872." The pamphlet comments severely on the English reviews of the report of Gen. Buell in favor of a three feet six inch gauge for the Texas Pacific Railway, and arrives at the conclusion that broad gauge means "costliness with extravagance," and narrow gauge means "economy with efficiency."

USEFUL INFORMATION.

Lime a Preserver of Wood.

Lime is likely to be used largely as a preserver of wood. It has lately been discovered that vessels which carry lime last much longer than others. For a block pavement it is said an application of lime can be successfully made. In frame-houses, the space between the lath and siding could be filled compactly with lime, and the usual decay prevented at no very large expense. In regard to lime in connection with ship timber, the experience of an old ship-builder on the coast of Maine, published in the *Mechanics' Magazine*, is of interest. He had been in the habit of filling up the spaces between the timbers with hard stone lime, and ramming it in, calculating that slight leaks would cause the lime to expand and fill the crevices. Long observations had led him to consider lime a good preservative. A coasting schooner, built of Maine timber, unseasoned, and loaded with lime, had gone ashore and bilged. Being raised and repaired, the schooner remained sound for thirty years, with exception of the wood that had been used in making the repairs. It had been noticed, also, that the vessels carrying cargoes of lime generally lasted longer than others. But the most striking case was that of a platform of pine planks, used to mix mortar on, and that had been employed by father, son, and grandson, and, being no longer needed, was suffered to remain on the ground and become overgrown with grass and weeds. After a period of sixty years, having occasion to use the ground, the planks were removed, and found to be as firm and hard as when first laid down.

A writer in the *Western Rural* makes the following statement. If true, it is a very important discovery.

I discovered many years ago that wood could be made to last longer than iron in the ground, thought the process so simple and inexpensive that it is not worth while making a stir about it. I would as soon have poplar, basswood or quaking ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set seven years, that were as sound when taken up as when first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents apiece.

For the benefit of others I will give the recipe: Take boiled linseed oil and stir in pulverized charcoal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rotten.

Chemistry of Honey.

A correspondent of the *Scientific American* says:—The chemical formula for honey is, carbon, 12, hydrogen, 14, oxygen, 14: for beeswax, C, 24, H, 34, O, 2.—Glucose, or grape sugar, is obtained from honey by treating it with alcohol. This sugar is employed in Europe for ordinary sweetening purposes, for confectionery, etc. But the abundance of cane sugar in this country makes its manufacture unprofitable.

Chemists have given us the foregoing formula for honey, but, when first gathered, honey partakes more or less of the essential properties of the plant from which it is gathered. This essence soon evaporates, if the honey be obtained from certain plants; while from others—buckwheat, for instance—the odor and taste is retained for a great length of time.

The crystallization of honey is an evidence of its purity; but many persons are more fastidious than wise about the food they eat. Honey in the comb is generally preferred, because of its beautiful appearance, and the impossibility of its being adulterated. Still wax is very indigestible, and pure, extracted honey is not only cheaper, but far more healthful and convenient to handle. There is a process for converting honey into wax, but owing to the large amount of honey required to produce a small quantity of wax, the manufacture is unprofitable.

SOLOMON'S TEMPLE IN THE VIENNA EXHIBITION.—Francis Langer, a sculptor of Kaaden, but born at Weipert, began to cut the model of Solomon's Temple out of lime tree wood according to the details given by the historian, Josephus Flavius. For thirty years he worked unceasingly at this laborious work, and at length died in 1850 at the age of 72. His son continued the unfinished work until his death in 1858. Two citizens of Kaaden then took the matter in hand, and, partly by working at it themselves, and partly by getting others to follow the plans and details left behind by Langer, succeeded in perfecting it. The completed work takes up a space of 325 square feet; or, if in a square, a space 18 by 18 feet. The present owner applied to the director of the Vienna Exhibition as to whether they might exhibit it, and after some little delay, received a reply that space would be reserved for it. This result of their labor during so many years requires twenty-eight chests to pack it in, and will now be forwarded to the exhibition at Vienna.

GREASE AND PEARLS.—Owners of pearl jewelry should be careful to keep them from exposure to greasy surfaces, as contact of this kind destroys their lustre.

Patchouly.

It is well known that the real India shawl possesses a peculiar and agreeable odor, which was as new to European noses as the shawls themselves were to European eyes. The odor pertinaciously clung to the fabric, and a genuine "India" unfailingly advertised itself as such in its perfume. The cause of this odor was fully inquired into, and it was found to be given to the shawls by contact with a herb known to the Hindoos as patchapat or patchouly, as it is commonly spelled.

Importation of the dried herb, as an aid to the shawl-makers enterprise, naturally followed, and this led to its introduction as a perfume in Europe, and thence to our own country. Patchouly resembles our common garden sage, and is largely distilled in India. It comes to us in large, black wine bottles, holding the odd amount of twenty-one ounces, and is worth about \$75 at wholesale rates, or \$4 to \$4.50 per ounce. The handkerchief essence known as "extract of patchouly" is simply a solution of the oil in deodorized alcohol, a small proportion of otto of rose being usually added, which materially improves the scent.

Genuine India shawls and India ink were formerly distinguished by their odor of patchouly; but since the perfume has become common in Europe the test does not hold good. Ill effects, such as loss of appetite and sleep, nervous attacks, etc., have been ascribed to the excessive employment of patchouly as a perfume.

A Good Idea.

The *American Chemist* has a notice of a new social safeguard in England, which promises to become a terror to evil-doers. To sand sugar and water milk are vile practices which—the latter especially—have been so laughed at as good jokes on city people that they have not received the punishment they deserve. The blue cow's tail, which is the pump handle, has figured in cities since milk was first dispensed; how much water might be put in was only limited by the scarcity of milk, the rapacity of dealers and the patience of customers. But the much suffering English people are at last to be protected. Official chemists have been appointed by a recent law as public analysts; they are empowered to examine suspected articles of sugar and milk, and, if they find them adulterated, to summon the persons who supplied them before the magistrate. For the first offense the penalty is a fine of \$250; and for the second, imprisonment at hard labor for six months. In order to make this practical, any buyer who has been thus cheated may have the article analyzed on payment of a small fee, which will be returned to him and charged in the costs of court to the seller if the examiner's report is adverse. Such a law, if found of ready application abroad, should be enacted in this country. It can injure none but the fraudulent seller; and the abolition of "sky-blue" would insure comfort, soothe ruffled tempers, and make happy and thriving babies.

AUTUMN LEAVES.—Who does not admire the forests in autumn? What a glory of gold, and crimson and richest brown the leaves present! The cool autumn mornings seem warm as we look upon their brilliant colors. Many persons think that all the brilliancy is the work of the frost, while the fact is we have the finest coloring in those seasons in which the frost holds off the longest. The appearance of the color shows that the leaves are ripe. They have finished their work and are just ready to pass in to decay, just as the ripeness of fruit is the first step toward decay. The dying leaves are so beautiful that many gather them in that they will retain their brilliant colors, and are disappointed in finding them turn in a few days to a dull brown. The colors can be preserved, but to do this you must arrest the process of decay, and this can only be done by drying as rapidly as possible. As soon as the leaves are gathered, place them between perfectly dry papers, old newspapers will do, and change the papers every day until the leaves are quite dry, which will be known by their becoming brittle. When the leaves are dry keep them between papers until you wish to use them for making wreaths and other decorations. To make the colors come out more brilliantly, the upper surface of the leaf should be lightly brushed over with boiled linseed-oil. The leaves may then be pasted or glued upon card-board to make wreaths or lampshades, or used in any other way that fancy may suggest.

FISHES' EYES.—The eye in the lancelet and the hag is of the simplest form, consisting of a nerve termination coated with black pigment and capable only of perceiving the presence of light. In young lampreys, while they remain buried in the sand, the eyes are very minute and undeveloped; but when they reach the adult period these organs are developed to an average size. In the majority of fishes the eyes are admirably adapted to the purposes of vision in water, and in the four-eyed fish of South America not only are the eyes very perfect, but they are also divided into an upper and lower portion, giving them the appearance of two pupils and enabling the fish to pursue its prey when out of as well as when under the water. In the cat fishes the greatest variety is found in the size and arrangement of the visual organs, from the large eyes on the sides to minute ones placed on the upper surface of the head. In some of the members of this family they are so buried under the skin or incased in folds of cartilage as to be of little or no use.

GOOD HEALTH.

A Ferocious Parasite Taken From a Man's Leg.

A short time ago a sailor went to the City Hospital from the British bark "Georgiana," who was supposed to be suffering from a sore leg. The man had been ailing for near three months, but none of his shipmates supposed there was anything serious the matter with him. Accordingly, when a few days before his removal to the Hospital, he declared himself unable to walk about, the Captain of the ship supposed that he was endeavoring to make an excuse for getting away from the vessel that he might be left in port, the ship being prepared to sail in a few days. When removed to the Hospital, the man's right leg was very much swollen, and manifested all the symptoms of erysipelas, for which malady his affection was at first mistaken. At the end of a few days however, an abscess formed upon the inner side of the ankle, from which, after it had burst, protruded about three inches of a white membranous-looking substance, about an eighth of an inch in diameter. This singular manifestation induced a careful examination of the leg, which developed the fact that the man was afflicted with *dracunculus*, or Guinea worm. This is a horrible parasite, found only along the shores of the Indian Ocean, Red Sea and certain portions of the Mediterranean. It infests damp and unddy soils, and impure water, and generally attacks the feet and legs, but sometimes other portions of the body. At the time that it forsakes its native element for the more luxurious habitations of flesh and blood, it is scarcely larger than a common flea; but having once buried itself beneath the skin, it grows with alarming rapidity, and will attain a size varying from six inches to six feet in length by one-twelfth to one-eighth of an inch in diameter. It lies dormant until it reaches the age of maturity, after which it commences a series of wanderings and meanderings about the muscles and bones which cause intense pain to the unsuspecting victim. It always travels downward, and with such rapidity that it will sometimes travel the whole length of the human frame in twenty-four hours. It will sometimes come to the surface and lie under the skin like a long white cord; but should the surgeon attempt to extract it with the knife without first securing it with a nipper, it will elude his grasp and scamper away with the agility of an eel. If a portion of the worm is removed the remaining portion will not die, but continue as gay and lively as ever. The first symptoms of the Guinea worm are a disagreeable itching and irritation of the infected parts. After it begins to move about, its paths are followed by external abscesses, and when the paths be along the stomach, internal abscesses also. It always ultimately endeavors to leave the system by working its way through the skin, generally near the ankle, but this is only after it has left from ten to fifteen young behind. The usual number of worms that is found in one person varies from one to fifty. There is one case on record, however, of a man dying from the effects of the Guinea worm, whose body and skin were nothing but a network of these horrible creatures. Death rarely results from the ravages of this worm, and when it does it is generally the result of some disease produced by the inflammation and other effects of the worm's wanderings. The Guinea worm does not confine its ravages to man, but will also attack dogs and horses. The sailor in question made a voyage to the eastern coast of Africa, about six months ago, and while there received the parasites into his system. One of these worms has already been extracted from his right leg, but another has made its appearance in the left. He is doing as well as can be expected under the circumstances. This is probably the first case of the kind ever known in Charleston. —*Charleston News.*

Our Food.

There is no country where there is so much dyspepsia as in America, because our people pay so little attention to food, and eat too much meat for the exercise they take. If one has mental labor, fish every second day at least is requisite. Soup sets all the glands at work, and prepares the stomach for the more important functions of digestion, and therefore should be taken at dinner every day. Beef broth is to the old what milk is to the young. Cookery properly attended keeps a man in health. If the stomach is out of order, the brain is affected. We should eat more fruit, vegetables, soup and fish. Good and well-prepared food beautifies the physique, the same as good and well-directed education beautifies the mind. Wrinkles are produced by want of the variety of food. The man who does not use his brain to select and prepare his food is not above the brutes, which take it in the raw state. —*Home and Health.*

IODINE AND BOILS.—As soon as a boil becomes hard and inflamed, paint it with iodine. The poison will not be scattered, but will be absorbed by it.

Popular Physiology.

Much importance has been justly attached to the subject of temperament, both as respects the training of children and the education of adults, and the selection of companions for life in the matrimonial relation. Respecting physical and mental training there is much error, not only in our system of common-school education, but also in vocations and habits of life. Children who are weak in body often take precociously to books, and the early indications of mental talent are often treated with a forcing or hot-house culture, to the utter ruin of the bodily constitution; while children who manifest vigorous muscles are put to the exercises or business pursuits which aggravate the disproportion between mind and body, and produce an adult with a strong body and imbecile mind. The proper application of the doctrine of temperaments reverses this custom. The feeble parts of the organism should be most assiduously trained. A harmonious organization should always be aimed at in the rearing of children and education of youth. There will always be unbalanced conditions enough; and when the child has attained the vigorous development of full-rounded manhood or womanhood, there will be time enough to cultivate special talents. In this manner only can genius be placed on an enduring basis, and extraordinary original capacity be rendered safe to its possessor and most useful to mankind.

In the selection of conjugal partners, some authors advocate the rule of similarity, and others that of diversity of temperaments; and it has been most absurdly pretended by some writers on human temperaments that two perfectly harmonious temperaments are constitutionally incompatible, indeed, "physiologically incestuous." The teachings of nature, however, as manifested in the history of all the races of men, and as illustrated throughout the whole animal kingdom, are not difficult to understand. —*From the Science of Health.*

HOW ROYALTY SLEEPS.—It is now commonly believed that where two persons sleep together, one abstracts from the other some amount of vital force. This is especially the case where old and young persons share the same bed. Besides, in a room where there is no decided current of air, the emanations from the lungs and skin of a sleeper poison the atmosphere for a considerable distance. In the public walls of great hospitals, never less than two and a half feet is allowed between each bed for this reason. In the sleeping apartments of royalty and nobility single beds are everywhere the rule, and nowhere the exception. The Emperor of Germany sleeps upon a narrow bed and a hard mattress. The single bed covering is a wadded silk quilt. The Emperor and Empress of Austria take their royal slumbers on similar beds, with the same description of coverlet. One of the principal advantages of these narrow beds is that the mattresses are more easily aired. —*Galaxy.*

TREATMENT OF ASTHMA.—George Goskoin, surgeon to British Hospital for Diseases of the Skin, has had success in treating this disease by rubbing briskly into the chest, for the space of an hour, a chloroform liniment. The counter-irritation produced by the liniment was of benefit, but this benefit was increased by the jolting resulting from the rubbing. Anything that leads to the displacement of the air stagnant in the vesicles has proved able to relieve in many instances. It is advised that the friction be made with as much roughness as the case admits. Slight blows with the palm of the hand or the end of a towel on the ribs are quite allowable; and the friction should be extended to the front of the neck at the lower part, where the vagi enter the chest. The composition of the liniment need not trouble us, provided it be warm and work well. —*British Med. Jour.*

DREAMS.—The following are medical signs of dreams, as published in a medical work:—Lively dreams are, in general, a sign of nervous action. Soft dreams, a sign of slight irritation of the brain; often, in nervous fever, announcing the approach of a favorable crisis. Frightful dreams are a sign of determination of blood to the head. Dreams about blood and red objects are signs of inflammatory conditions. Dreams about rain and water are often signs of diseased mucous membranes and dropsy. Dreams of distorted forms are frequently a sign of abdominal obstructions and disorders of the liver. Dreams in which the patient sees any special part of the body suffering, indicates disease in that part. Dreams about death often precede apoplexy, which is connected with determination of blood to the chest.

HOME COMFORTS AND HEALTH.—A neat, clean, fresh-aided, sweet, cheerful, well-arranged house exerts a moral influence over its inmates and makes the members of a family peaceable and considerate of each other's feelings and happiness. The connection is obvious between the state of mind thus produced and respect for others, and for those higher duties and obligations which no laws can enforce. On the contrary, a filthy, squalid, noxious dwelling, in which none of the decencies of life are observed, contribute to make its inhabitants selfish, sensual, and regardless of the feelings of others; and constant indulgence of such passions renders them reckless and brutal.



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SAN FRANCISCO:

Saturday, Nov. 9, 1872.

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MORE RAIN.—We had a fine shower on Saturday, Oct. 26th, and another on Monday, Nov. 4th, sufficient to lay the dust and clear the air beautifully; whilst they portend the usual November rains.

OVERLAND MONTHLY.—This valuable publication for November is before us, and fully up to its usual standard of excellence.

D. C. Gilman, President of University of California.

We present herewith a portrait of the gentleman who was inaugurated, on Thursday last, as President of the University of California. The engraving was drawn from a photograph kindly furnished us by an Oakland lady, and has been executed on wood by our own artist, especially for the columns of the SCIENTIFIC and RURAL PRESS. The photograph, we judge by the maker's imprint, was taken in England, and probably within two or three years past. The engraving will be remarked as a very correct likeness by those who know him.

President Gilman was born in Norwich, Conn., in 1831, and in his boyhood removed with his father's family to the city of New York, where he was fitted for college. He graduated at Yale in 1852, and after a year of past graduate study, partly in New Haven and partly in Cambridge, he went to Europe as an attaché of the American legation at St. Petersburg. He spent a winter in study at the University of Berlin, and was afterwards Secretary of the

great institution of learning, such as we are now endeavoring to make the State University at Oakland. We have no doubt but his inauguration to the Presidency of that institution will prove an important era in its history. We bespeak for him a hearty welcome, and earnest support from all who are interested in the great cause of education.

Opium at Riverside.

Riverside is the name given to the locale of a flourishing colony in San Bernardino County, of which we have several times before made mention. As a community of practical farmers and horticulturists, it is excelled perhaps by none other in the State. The different varieties of fruits and farm products suited to their soil and climate, are given special attention with a view of establishing the fact of their adaptability to extended culture, and among them we find the opium poppy.

Mr. John Brodhurst from Riverside has made us a call and shown us a pound ball of opium, apparently of an excellent quality, being a fair



DANIEL C. GILMAN, PRESIDENT OF THE UNIVERSITY OF CALIFORNIA.

Commissioners to the Paris Exhibition of 1855. His time in traveling was largely devoted to the study of educational and charitable institutions. On his return to New Haven he became interested with others in the establishment and development of the scientific department of Yale College, which has now become the Sheffield School of Science. He was librarian of the college from 1856 to 1865, and Professor of Physical Geography and History in the Sheffield School from 1863 to 1872. For several years he was also Superintendent of the City Schools of New Haven, and subsequently State Superintendent of Instruction in Connecticut. He has written for the *North American Review*, the *New Englander*, the *Journal of Science*, and other periodicals, and has printed several public addresses, but has published no volume.

In addition to his other duties Professor Gilman held the office of Secretary of the Sheffield School of Science, a position attended with much labor, but at the same time one giving rare opportunities for becoming familiar with the working and wants of such an institution. He comes among us young in years, but ripe in scholarly attainments, and especially familiar with what is useful in building up a

sample of some 20 pounds produced in the colony this season. He brings but four pounds with him, the gathering of the Bros. Twogood, who were eminently successful in their production of the poppy and opium.

But on bringing the opium here he is surprised to find there is no market for it. True there are those who offer \$3.50 a pound for it, while the Smyrna opium no better than this, is worth \$7.50 per pound. A portion of the 20 pounds raised this year has been sold in San Bernardino at \$6.00 per pound; but thinking to get its full value in San Francisco, brought 4 pounds to this market where they offer him as above \$3.50 a pound.

Now, this is just about the way that San Francisco encourages agricultural enterprises, by offering about half of what the thing is really worth; and so long as the farmer cannot help himself to a market the wrong is continued. The RURAL speaks of the introduction and growth of the opium poppy because a good article of opium is worth \$6. or \$7. a pound. The opium is produced and only \$3.50 is offered. We then assert that there is no market for opium in San Francisco, meaning by this, as we did in the matter of mohair and cocoons,

no such paying market as there ought to be. We never consider that we have a market for an article when we can only obtain half what the article is honestly worth.

Sales of Mohair.

We are permitted to extract from a letter from Davis & Foulke, Philadelphia, to Thos. Butterfield & Son, as follows:

Sales by Davis & Foulke for account of Thos. Butterfield & Son.

Dec. 20, Cash, Fine, not kempy, lbs. 36@1.20	\$43 20
" " " Low " " 47@1.10	51 70
" " " Fine kempy 59@ .80	47 20
" " " Low " 97@ .79	67 90
" " " Shorts 39@ .40	15 60
" " " Breech 29@ .40	11 60
307 lbs	\$237 20

CHARGES.
Storage, Labor, Fire Ins., Guarantee and Com. for selling, 5 per cent. \$11.86
Freight and Drayage, 18.55 30 71

Net proceeds due you this date, \$206 49
DAVIS & FOULKE, per MILLER.

Philadelphia, December 27, 1871.

In the accompanying letter which was somewhat lengthy, they account for delay caused by having sent samples to Europe, and close by saying:

"If you have any more of the mohair, send it forward at once, as we have found the best market for it. There will not be the same delay in disposing of it as there was with the samples. Yours very truly,
DAVIS & FOULKE."

So there can be no doubt as to there being a market in Europe for mohair, and that by sending to the above firm in Philadelphia, it can be sent to Europe and sold; a fact of which we never had the least doubt, and the same we presume if sent to any other wool forwarding house in New York or Boston. What we hope to see, however, is a market at our doors the same as for wool, which is often bought of California growers before shearing.

Growth and Culture of the Orange.

Gardeners in the Atlantic States who have, either in open grounds or green house succeeded in growing the orange and lemon, are aware how long and slow the growth is before arriving at fruiting maturity. A seedling usually attains a height of 12 or 15 inches the first season, and often only large enough to admit of being budded in the autumn of the same first year.

See the contrast as between their climate and ours, as shown in the growth of this family of fruit trees—Judge North, of Riverside, San Bernardino Co., has lemon trees fourteen months old from the seed that are seven feet high; equal or very much exceeding the usual growth of apple, pear or peach in the most favored soils and climates.

The judge has also a banana tree, the seed or bulb of which he obtained in February last, which is now nine feet high, the stem of which is two feet in circumference at the ground. We speak of these as showing the encouragement we offer to fruit growers who may be contemplating a removal to the orange, lemon and banana districts of California.

A writer of Los Angeles, in the very land of the orange, lemon and fig tree, and where we would suppose the most practical demonstration of the best modes of culture would appear on every side, asks for information regarding the cultivation of the orange, lemon, lime and fig, on the ground of his being a "new comer from Mo." Will not some practical grower of these fruits, in Los Angeles or other southern district of the State impart the desired information, making the RURAL PRESS the medium.

CALIFORNIA FRUIT.—A large number of cars are now employed in the transportation of fruit to the Eastern States. In addition to the shipments of fresh fruit, a large business is done in canned fruits and vegetables.

ABALONA SHELLS.—Sixteen tons of shells have been ordered from this coast by two firms, one in Boston and the other in Philadelphia. They are for manufacturing into buttons and many kinds of fancy articles, and bring good prices. The islands opposite to this county are literally covered with the finest shells for this purpose found in the world. Why are they not utilized? On the shores of Anacapa of Santa Cruz, a few men could soon load a schooner.—*Ventura Signal*.

LOCOMOTIVE ENGINEERS.—The Brotherhood of Locomotive Engineers at St. Louis were in executive session recently. A resolution was adopted favoring the abolishment of all Sunday trains, and a committee was appointed to confer with railroad officials throughout the country on the subject. A clause to be inserted in the act of incorporation, providing for the expulsion of any engineer addicted to the use of intoxicating liquors, was also adopted.

Selection of Seed.

Under this head in our last week's issue our remarks were mainly directed to the adaptability of varieties to certain soils. We now speak with reference to the importance of using only seed that has attained full development and maturity. We believe all stock men agree as to the importance of breeding only from the best animals and never think of raising superior stock of any kind from inferior or diseased parents.

Now if there is any natural law operating in the case, the same law as completely controls the vegetable world as it does the animal. A healthy and vigorous plant, capable of perfect development and maturity can hardly be expected from an imperfect and diseased germ. This principle cannot be too strongly enforced, and yet hardly any other within the whole range of agricultural science is more frequently ignored in practice.

There are many farmers who plant potatoes only from the refuse; they first select out such as are fit to eat or will bring the highest price in market and the remainder, small and immature ones are used for seed. The result of next crop is just what might be expected, a meager crop of watery, perhaps diseased tubers, hardly worth the cost of production.

The same applies to the growing of wheat, and many are not only content with utterly neglecting the due preparation of the soil, but are equally reckless in the selection of seed, willing to use any they may have left over from a previous inferior, immature or shriveled crop, or perhaps such as they can buy at the very lowest price of some careless ches or mustard-growing, smut-producing neighbor.

This neglect of procuring the best seed applies equally to all other crops raised by the farmer as it does to wheat or potatoes. In saving the seeds of vegetables care should be had in preserving only such as are fully matured and of healthy development, all others should be discarded, as we would the illshapen, weakly animal, for the perpetuation of its species.

Osage Orange Hedge.

We are inquired of as to whether the Osage orange is grown from seeds or cuttings, and how a hedge of this plant should be cultivated; the object being two-fold, a wind-breaker and a fence against unruly boys.

The Osage orange is usually grown for hedge purposes from seeds; but can be grown under favorable conditions of soil, heat and moisture from cuttings. If from seeds—which is the most desirable mode—they should be planted in the place where it is desired to grow the hedge, and particularly is this advice applicable to California.

It is all important to the success of hedging that the young plants as well as the mature hedge, have at all times a sufficiency of moisture, and to secure this in all seasons in our dessicating summer climate, the growth of the tap-root should be favored; and nothing contributes more to this than planting the seeds of trees in the places where they are to remain, besides adding greatly to the health and long life of the tree.

As it is not the proper season to start a hedge of Osage orange, we shall defer directions for preparing the seed, previous to planting to secure a certain growth, and their after cultivation, until the proper time arrives, and will then give the subject further attention. In the meantime, whenever the soil will admit, turn the same deeply on the line you intend the hedge to occupy, and harrow or plow the same as often as weeds or grass make their appearance, till the proper season of sowing, which is in March, or even as late as April.

In the meantime, procure your seed from reliable seedsmen, such as advertise in the *RURAL*, then follow directions in next February's number, and you will have no difficulty in growing your hedge.

Oakland Farming, Horticultural and Industrial Club.

Hon. J. W. Dwinelle, of Oakland, will give a short address before this Association on Friday evening, Nov. 8th, on the culture of forest trees and the grape, as observed by him in Europe. Forest tree culture for profit is the subject for discussion. Meetings of the Club are free, commencing 7½ o'clock, in the chemical lecture room of the University.

The Building of the University.

An Inaugural Discourse, Delivered at Oakland, November 7, 1872.

[By DANIEL C. GILMAN, President of the University of California.]

Grateful for the kindness with which I have been met, and full of hope for the future which opens before us, I accept the trust now put upon me, imploring for the University of California the generous support of all good men within this commonwealth and seeking the divine blessing upon our united efforts for the advancement of knowledge, the formation of science, and the furtherance of the welfare of our fellow men.

It is an academic usage, in our land at least, that on occasions like this the incoming officer should give utterance to his views upon the higher education, and the usage cannot well be disregarded when one who is almost a stranger first enters a community of experienced teachers and aspiring scholars like this which is here assembled. My theme will therefore be the Building of the University.

The Building Elsewhere.

Since the University of California was organized it has happened that several of the leading colleges of the country have witnessed ceremonies like that in which we are now engaged, and so there have been ample and fresh discussions of some of the questions which most interest us.

At Cambridge, New Haven and Princeton, those historic seats of learning where traditions and usages both help and fetter, at Ithaca, Ann Arbor, Minneapolis and St. Louis, in newer, freer and harder circumstances, and in other places, which are neither old or new, have the voice of experience, and there the voice of hope has been heard, sounding different notes in harmonious eulogy of learning and culture and in earnest plea for progress and support.

Whoever reviews these various utterances and makes a note of the topics which are taken up must be impressed with the fact that great changes have come to pass in American education within the last few years, great improvements have been made, and great results are not far off. If then he turns to the venerable shrines at Oxford and Cambridge, before which every scholar loves to bow, and traces the wonderful changes which have been introduced into those homes of conservatism and precedent, since the Parliamentary inquiries of five and twenty years ago began their revelations he will find abundant reasons for surprise and congratulation that the doors have been open to modern science as a teacher, and to nonconformists as pupils. If his eye is turned toward the continent he may see scholastic Germany, the United States of the old world, engaged at this very moment in the foundation of a new University at Strasburg, as the greatest boon which can be given by a triumphant nation to a recovered province—a university which in its comprehensive faculties, its liberal structure, its probable power, approaches the University of Berlin, and may well serve as an example to those in this country who desire completeness, and who want it quick.

Side by side with the university foundations, sometimes a part of them, oftener apart from them, the modern schools of science and technology are springing, up at Zurich, Aachen, Karlsruhe and Vienna, at many places in the new born Kingdom of Italy, and in every State of the American Union, partly under the beneficent action of the Morrill bill for the formation of agriculture and the mechanic arts, and partly under the generous gifts of Sheffield, Cornell, Stevens and their peers. Everywhere, among enlightened people, universities in their most comprehensive spirit are in this year of grace, receiving impulses which are as creditable to the spirit of this age as they are hopeful for the ages yet to come. Especially in this country our State and National Governments have discovered that the questions of the higher education must be met in legislative and administrative councils and in many places are vying with each other to devise wise schemes of educational development; the builder's hammer is heard in many seats of learning, at Harvard, at Yale, at Amherst, at Princeton, at Cornell, at Philadelphia, constructing the walls which shall furnish homes to successive generations of pupils; collections of books, maps and charts, of works of art, museums of geology and natural history, and archaeology, laboratories for chemical, physical, botanical and zoological researches are multiplying with a marvellous rapidity; lenses are made for the microscope and the telescope surpassing any which the physicist and astronomer have hitherto possessed; prizes, scholarships and fellowships have been endowed sometimes for continued residence at the college and sometimes (like the Kirkland scholarship, at Cambridge, just given by the historian Bancroft) providing for residence in foreign universities; to the traditional schools of law, medicine and theology, and schools of advanced study are added schools of philosophy, of history, of the fine arts, of chemistry, engineering, agriculture and mines, devices and arrangements to allure young men to higher attainments and to aid them in their onward steps; underlying all this, supporting all this, indispensable to all this, have been the prolific gifts of men of wealth, farsighted and generous benefactors, whose

names a grateful posterity will cherish forever as the true nobility of the republic, the lords and gentlemen of the American state.

California's Opportunity.

Such is the hopeful aspect of University education in the States beyond the Alleghanies and to some extent likewise in the valley of the Mississippi. Now comes the turn of this new Empire State, California, queen of the Pacific, to speak from the golden throne, and decree the future of her University;—California, the land of wonders, riches and delights; whose valleys are decked with purple and gold, the luscious vine and the life giving corn; whose climate revives the invalid and upholds the strong; whose harbors are the long-sought doorways to the Orient; whose central city is cosmopolite like Constantinople of old; whose pioneers were a bold, strong and generous class, illustrations of the modern notion that in the struggle for life, the fittest must survive; the builders of whose institutions have been farsighted and catholic, bringing hither the best ideas of many different climes, and laying with faith, hope and charity, the foundations of a modern Christian State, whose people are patriotic, determined and intelligent in a very uncommon degree; whose future no seer can foretell.

California thus endowed and thus inhabited is to build a University. What sort of an institution shall it be? This is the question of the hour. Let us consider it well, for though time only can determine the answer, forethought and faith may be factors in the problem.

Two things are settled by the charter of this institution and are embodied in the very name it bears. First, it is a University, and not a high school nor a college, nor an academy of sciences, nor an industrial school which we are charged to build. Some of these elements may indeed be included in or developed with the University, but the University means more than any or all of them. A University is the most comprehensive term which can be employed to indicate a foundation for the promotion and diffusion of knowledge, an organization to advance the arts and sciences of every sort, and to train young men as scholars for all the various professions of life. Universities greatly differ in their internal structure. The older institutions are mostly complex in their organization, including a great variety of colleges, chairs, halls, scholarships and collections, more or less closely bound together as one establishment, endowed with investment privileges and immunities, and regarded as indispensable both to the moral and material progress of the community, or in other words, as essential both to church and State. In this country the name is often misapplied to a simple college, probably with that faith which is the substance of things hoped for and the evidence of things not seen. We must beware, lest we too have the name without the reality. Around the nucleus of the traditional college which has been so well maintained since the earliest days of this State, we must build the schools of advanced and liberal culture in all the great departments of learning, just as fast as may be possible, and we must at least begin to recognize the various sciences by chairs which may each in its turn be the nucleus of a school or department.

Secondly, the character and the name declare that this is the University of California. It is not the University of Berlin, or of New Haven, it is not the University of Oakland, or of San Francisco, it is the University of the State which has created it. It must be adapted to this people, to their public or private schools, to their peculiar geographical position, to the requirements of their new society and their undeveloped resources. It is not the foundation of an ecclesiastical body or of private individuals. It is of the people and for the people—not in any low or unworthy sense—but in the highest and noblest relation to their intellectual and moral well being.

What Have We to Build Upon.

Bearing then in mind that this is to be a University, and that it is to be the University of California. Our first inquiry is what we have to build upon?

You may all be supposed to know much better than I, the conditions of the State University; but having taken an account of stock, before deciding to join you in an enterprise which seems to be full of promise, a rapid enumeration of the features which have arrested my attention may be of use.

In the first place I observe you have a good Charter; I will not call it perfect, for what human instrument is perfect, but a charter carefully drawn up after a study of the best kindred enactments in the United States, gathering the useful and rejecting the cumbersome, and adapted in all its provisions to the wants of California. The freedom from tuition charges, and the admission of women to the privileges of instruction are two of its most marked peculiarities. The generous recognition of all the arts and sciences, the new and the old with scientific, literary and professional culture, shows a liberal prospect. The long tenure of office given to each elected and appointed Regent adds dignity and responsibility to the Board and tends to conservative and steady progress. The care which has been taken to enlist for the University's service the influence and counsel of the high executive officers of the State, to secure the all important aid of the Superintendent of Public Instruction, and at the same time to enlist a popular interest in its welfare through the Agricultural Society and the Mechanics' Institute, should insure the confidence of the people, while the peculiar mode

mode of selecting the Regents would seem to entirely prevent sectarian or ecclesiastical control.

Under this charter you have a good body of Regents—men, so far as I have become acquainted with them, who are earnest, unselfish, determined and strong, who mean that the trust committed to them shall succeed, and who will not be disheartened by the difficulties and perplexities which beset all great and enduring undertakings. Their unpaid labors deserve the grateful recognition of the community.

The University has inherited a good College, with its buildings for present use, its collections, its repnte, its experience, its short but worthy list of graduates, and its hold upon the people of the State. Hence it does not begin entirely anew, but the foundations of over twenty years are ready to be built upon. I cannot here refrain from paying the tribute of gratitude and respect to those pioneers who endeavored with the earliest organization of this State, to establish a college. They followed the footsteps of the earlier pioneers of the Atlantic, who founded the college at Cambridge when the country was still a wilderness. Here the task was no less difficult than there. The lack of funds, the lack of an organized society, the pressure of material wants, in short the struggle for life was so great that the wonder is the college lived at all. It was the harbinger of good not yet fully realized, not yet fully appreciated; but he sure that a hundred years hence, when the centennial of the University is celebrated, as it surely will be, grateful homage will be rendered to the foresight, the vigilance, and the self-denial of those who founded and cherished the College of California. Then, too, just credit will be given to those who were sagacious enough to admit that a University was greater than a college, and when the hour arrived were ready to offer that which had already been accomplished, as the foundation for greater things to come. There are chapters of unwritten history which may some day see the light, and illustrate the intelligence, the public spirit, and the wisdom of more than one of the counselors by whom I am now surrounded.

With other goods bequeathed by the college, the University has inherited a Site at Berkeley, the beauty of which is already renowned, and none can tell what it will be when academic halls and monuments shall have added their architectural charms, and when a society of scholars and of cultivated families shall have made a dwelling there. Some regard it as an open question whether all departments of the University can best be maintained at a distance from the great city, where every form of human activity is manifested, where hospitals favor the study of medicine, and courts of law promote the study of jurisprudence, where libraries and picture-galleries, and the collections of science are likely to be accumulated. Upon this question I will not enter. Fortunate is it that the site selected is so near to the great metropolis of the Pacific—so that ample space, delightful prospects, salubrious air, and academic quiet may all be enjoyed without the complete surrender of the advantages of the town. Indeed, the growth of this neighborhood is so rapid, that one can readily believe that the distance between the city and the suburb, will soon appear no greater than the distance of Cambridge from Boston; it may even be that at Berkeley the time will come, as it has already come at Cambridge, when the creators will find more space essential to the growth of the University; never, I trust, will an acre of our fine domain be sold.

When I first stood at Berkeley, under the kind auspices of one of the Regents, and looked at the mountains and the bay, the town and the distant glimpses of the open sea, I recalled an hour under the elms at New Haven, more than two years ago, when I listened to the story of how this spot was chosen, of the rides and walks which were directed by an observing eye over the hills and into the valleys of this charming region, with a prophetic anticipation of the coming day when the college germ, already planted, would require a site worthy of its growth. The services of that enthusiastic scholar, whom California would gladly have kept, if Connecticut would have spared him, are honorably recorded in your early college annals, and are not forgotten by those who labored with him; but I cannot forbear to utter at this time the name of one to whose counsels and whose benedictions my presence here is due,—the name of Horace Bushnell.

Among other possessions you have the credit of a good system of Public Instruction, of which the University is to be the crown. I rejoice that it is so, and I hope that in all time to come, the primary school, the high school, the college and the University shall all be regarded as one system, essential and honorable to the State by which they are fostered.

You have a good community, made up in a very remarkable degree of men of intellectual force and superior education. The list of college graduates resident on the Pacific has been scrutinized in the colleges of the East, and the number of professional men who are resident in this immediate vicinity occasions wonder. Here also are graduates of other colleges than the chartered institutions,—those who have been taught in the stern schools of experience, and who have learned wisdom and judgment by the hardest and most varied lessons of practical life. The children of such are now ready for their higher training; how well it will be if they can have a worthy training almost at their own doors.

Again, we have as a foundation on which to build a vast amount of scientific and literary

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Last Words.

However physiologists may question the importance of the feeble utterances of the dying, it is certain that mankind in general finds a deep significance in the last words of those who are vanishing into the unknown life.

"He raves!" said the physician, when Dr. Adams, Rector of the High School of Edinburgh, was passing away; but as we catch the last words of the raving, our own eyes are dimmed. "It grows dark, boys," stretching forth his hand; "you may go." "All my possessions for a moment of time!" moaned Queen Elizabeth. Wesley, calmer, said as he died, "The best of all is, God is with us." And deaf Beethoven, whose soul had ever been filled with harmony, exclaimed gladly, "I shall hear!"

"Is your mind at ease?" Goldsmith was asked by his physicians. "No, it is not!" was the mournful reply, and he spoke no more. How different the parting words of Dr. William Hunter! "If I had strength to hold a pen, I would write how easy and pleasant a thing it is to die." Or the assurance of President Edwards, as his dying grasp loosened on hard forms of dogma, "Trust in God and you need not fear."

Byron said wearily, "I must sleep now," and Goethe, turning to his wife, called "Light, more light!"

Dr. Johnson died in a tumult of uneasiness and dread. Cowper sank to rest as peacefully as a child. "I am taking a fearful leap in the dark," cried Hobbes the Deist; and "Now, Lord, Lord, receive my soul!" whispered Herbert on his last "sweet day."

Politeness was no longer a ruling passion, but a chasm, when Chesterfield in dying said, "Give Dayrolles a chair," and surely something was forgiven of Charles the Second, when he bade farewell to earth's pomp, and wickedness in "Don't let poor Nelly starve."

Haller's last words were, feeling his own pulse, "The artery ceases to beat." Petrarch died suddenly and silently in his library, his head upon a book, and Sir Isaac Newton was winding his watch when he was ushered into the life that hath no end.

Talma, the great actor, exclaimed pitifully as he went, "The worst of all is, I can not see;" and John Locke murmured, "O the depths of the riches of the goodness and knowledge of God!" The dying admonition of the learned Grotius to his race was, "Be serious." Scarron, the French wit, said faintly to his weeping friend, "Ah! mes enfans, you cannot cry as much for me as I have made you laugh in my time;" and Lord Thurlow in reckless wonder exclaimed, "I'm shot, if I don't believe I'm dying!"

When poor Robert Burns gasped with his last breath, "Don't let the awkward squad fire over me!" he did not allude to his commentators and critics, yet what a significance should the words have for them! And how little Aune Boleyn thought, when, awaiting the executioner, she clasped her fair throat that "It is but small, very small," would link her forever to the heart of Christendom!

Yes, we can not doubt that many of the most eloquent sermons mankind has ever listened to have fallen from dying lips. Caesar's griefed "And thou, Brutus!" John Quincy Adams' "This is the last of earth;" Mirabeau's frantic cry for "Music," after his life of discord; George Washington's "It is well"—do they not grow richer in meaning every day? And is it not still blessed to remember the last moments of Melancthon, the friend of Luther? "Do you want anything?" asked his loved ones eagerly. "Nothing but heaven," he answered gently, and went smiling on his way.

JOSH BILLINGS IDEA OF PRAYER.—"It ain't necessary that a prayer, tew be good, should be very long or very loud. I have used one like this for the last seven years, and it suits me: O lord, visit mi heart fust, mi head next and mi pocket book last."

No good that the humblest of us has wrought ever dies. There is one long unerring memory in the universe out of which nothing good ever fades.—Woolsey.

The Latest Fashions.

Crinoline.

Dress skirts are absolutely flat in front and on the sides, with great fullness massed behind, and held there by strings underneath. A succession of stiffly starched flounces is down the back, and a deep kilt-pleated flounce of snowy French muslin, buttoned on just above the knee, forms the lower part of the petticoats.

Silk Suits and Over-Skirts.

Two materials enter into most costumes this winter, and silk suits are now half velvet, and half silk. For these dressy toilets basques with over-skirts are preferred to polonnaises. Among favorite designs are those made with very plain fronts, either falling open or with an apron, scarf-like sashes elaborately looped and knotted. The round, long overskirt of last year should have tapes in the second side seams to draw these seams almost together behind, quite low down; the back breadths should then be irregularly caught up to hang in a long slender loop in the middle of the back.

Black Costumes.

Notwithstanding the fancy for dark rich colors, handsome black costumes—partly faille, partly velvet—will retain their popularity for street suits. These have either a basque and over-skirt, or a basque, apron, and flounced back breadths; polonnaises are almost confined to velvet and woollens. Aprons of over-skirts are alternate strips of velvet and faille, while the back is formed of two wide scarf-sashes of velvet lined with silk, tied to show a velvet loop and one of faille. Velvet is much used for facing silk in the simple way described last week for silk and cashmere.

Afternoon and Dinner Dresses

Of black silk are made with plain untrimmed skirts lying half a yard on the floor behind. The back breadths are caught up in a panier puff. A flat double apron, very short, very pointed and richly fringed with jet, is on the front and sides, and terminates in white sashes trimmed with jet passementerie; and tied low down behind, with long ends that hang to the edge of the train.

Velvet Brocaded on Silk

Is the novelty in rich black silks. For dinner dresses, black silks covered with vines woven in the Jacquard loom, brightened here and there with clusters of brocha flowers.

Reception Dresses.

Demi-trained dresses for day receptions and for calls of ceremony are fashionable, dark shades of velvet and faille combined—velvet for the over-dress and silk for the long skirt, with elaborate silk flounces headed by shells arranged to show their velvet lining. Mazarine blue, violet, and Vandeyck brown suits of this description are among the reception dresses and carriage costumes.

High-Necked Dresses

For evening parties, and other full-dress occasions, have a postilion-basque behind, and sharp points in front of the corsage. Many low-necked dresses retain the point and basque, though the novelty of the season is the round Josephine corsage described last week. These dresses are embroidered in profusion.

Evening Bonnets.

Opera and reception bonnets are round, soft crowns of pink or blue faille, with high black velvet brims piped with the color. Two soft puffs of silk for face trimming, and a rose-bud under the left side; ostrich tips of the color and black with faille loops hanging behind. Others are made without any frame, and are therefore comfortably tight. One with two shades of rose-colored faille is a soft puffed crown, with a shirred front; two ostrich feathers, one long, the other short, curl over the front and left side; black lace ruche and scarf.

Opera Cloaks.

The new evening wraps are Dolmans and paletots of creamy white camel's hair, literally covered with wool embroidery, and edged with white yak lace. A ruche of lace is around the neck, and the garment is fastened by a large clasp of oxidized silver of antique design, showing Egyptian heads, the Sphinx, Griffins, etc. Stylish paletots with immense sleeves are of soft Cashmere-Sicilienne, wrought all over with soutache cord and edged with crimped fringe.

"I was ever of opinion that the honest man who married and brought up a large family did more service than he who continued single, and only talked of population."—Goldsmith.

Words to Women.

Positive Character.

A trait of character always to be admired in women, is positiveness. If she can give to her life the impress of character that the good she has shown is of such a positive character that its mark has been set upon the being of any other person, she is indeed worthy of praise and admiration. The woman who can never decide a question submitted to her, but hesitates and falters, in a prompt decision, is indeed unfortunate.

There is often much lost to a life where the head and heart have not the strength of prompt, decisive, positiveness, to say yes or no; and at the moment it is needed, to right a wrong, give a charity, or resent an insult.

The woman who has positiveness as the base of her character, and is a mother, will give it to her offspring, and, when tempered with reason and wisdom, will give to the world, men and women who will make their mark—be known and respected. The positiveness of character in the mother is almost surely seen in the child. If after education and association do not destroy it, there is no better heritage for a child to receive from a parent.

In our circle of acquaintances there is a little Mrs. Annie P., who exhibits this trait of positiveness in a remarkable degree. If she takes a position and feels that it is right, there is no mortal agency, we believe, that could cause her to change her opinion or determination. It is the one great, brilliant, controlling element of her character. It gives to her an intellectual predominance over minds less positive. She is ever gentle, modest, respectful, and careful not to offend those who may differ with her; but she will not, for favor, flattery or fear, renounce what she believes to be right. She is not hasty at decision or forming of opinion, but usually weighs all her thoughts in the scales of justice, and, once deciding, from it there is no appeal.

Patience.

Another trait of character that adorns the female life with a brilliant luster; gives it a pureness that can never imbue the life of one who is fretful and impatient. Patience is one of the rarest jewels that can gem the heart of woman. It tones down the jealousies, disturbances and disquietudes of her existence; in sickness, it creates uncomplaining quietude and resignation.

To the young girl who is receiving her character impress; her first lessons in the delicate school that is fit for her womanhood—patience should enter into her whole forming character. It will save her many heart burnings, many sorrowing hours, many tears. Patience is the parent of resignation, and the companion of love, justice and mercy. Patience leaves the heart quiet, peaceful and forgiving. The mother who has patience with the little ones God has permitted her to own and control, is to us the one being worthy the name of mother. The inquisitive mind, the little likes and dislikes, the stubborn mind and disposition, irritations, fretfulness, waywardness—all, all require patience in the mother more than any other human being. The mother, with a due appreciation of patience in the nursery, will impress the young, springing lives of her children with the solace that will tone down and soften the inequalities that passion may throw to the surface of their lives.

Mothers, you have a great responsibility resting upon your souls; not alone the care of your own future in the "land of the dead," but of your every child. A little patience exercised at all times with their childish whims, wants and wishes, will give to their lives an impress of the same good quality. Many of you, we fear, little consider the tenderness, the newness, of the characters you have given to you to help form into mature years. It is with youth—childhood—where patience is best expended, and where its fruits will soonest be seen and admired.—Coleman's Rural.

THERE is a religious element in the nature of man. It is no more true that men hunger for bread, than that they have a soul-hunger for God. Naturally men worship; the religious sentiment appears in all ages and all nations. Men have ideas of right and wrong, and some sense of duty, responsibility, burdens their hearts. And the mystery of death presses on them. They yearn to live on, and forever, and part for some assurance of an immortal life. In joy, in sorrow, in youth and age, with heart and flesh they cry out for the living and loving God.

FEMININE FELICITIES.—A lawyer riding through the town of Worcester stopped at a cottage to enquire his way. The lady of the house told him he must keep on strait for some time, then turn to the right; but said that she herself was going to pass the road that he must take, and if he could wait a few moments till she could get her horse ready, she would show him the way. "Well, said he, 'bad company is better than none—make haste.'" After jogging on five or six miles, the gentleman asked if he had not come to the road he must take. "Oh, yes," she said, "we have passed it two or three miles back; but I thought bad company was better than none, so I kept you along with me."

YOUNG FOLKS' COLUMN.

Thank God for little children!
When our hearts are cold and gray,
They come as sunshine to our hearts,
And charm our cares away.
I almost think the angels
Who tend life's garden fair,
Drop down the sweet wild blossoms
That bloom around us here.

What the Church Bell Did.

One Sabbath morning, as the people of God were gathering in His sanctuary, a boy of some twelve summers was seen to go half way up the church steps, stop, hesitate, go down again, and away toward the fields. He was walking briskly when the clear, silvery tones of the church bell rang out on the morning air. The boy started, and a troubled look swept across his face. "Has that old bell got a voice," he thought to himself; "it certainly said, 'Come, come, come.'"

"You promised to spend the day in the woods," whispered the tempter, and was George Gray ever known to break his word. "And besides it is so dreadfully warm up there in the church, and so cool and pleasant out here among the clover and the daisies."

"Come, do come," chimed the bell. "Can not you worship God just as well among the grand old trees and beside the running brook?" suggested the wily one.

"Come, come, do come," urged the bell. George sat down on a stump, and such a battle he fought there. He was just on the point of yielding to the tempter, when there came up before him the many times he had prayed at his mother's knee—"Lead us not into temptation," and of the night when his father went "over the river" into the better land, how he called him to his bedside, and laying his hand lovingly upon his head, with his dying breath, said, "Love God, my boy, and do right always."

Getting up, he began to run toward the church, and never once stopped until he reached the church steps. As he went in, these words fell upon his ear: "My son, keep thy father's commandments, and forsake not the law of thy mother. Bind them continually upon thine heart, and tie them about thy neck." When a few months after, God visited that church with bountiful showers of heavenly grace, George was among the "first fruits."

He is an old man now, with locks white with frost of many years, and feet trembling on the borders of the grave, but he never wearies of telling how God made the bell of his sanctuary to praise and honor him.—Am. Rural Home.

A Bird Stepmother.

While living south, in the summer of 1868, there was a schoolhouse about one hundred yards in front of my dwelling, and between that and our house was an orchard.

There is in the south a species of birds called cat-birds, and I believe they are known in the east as the northern mocking bird.

A pair of cat-birds had built a nest in one of the peach trees near one of the front windows, and my wife took great delight in watching them through incubation and feeding the young. My little boy was taught not to molest them, and he felt great pride in having his bird's nest. One day a bad boy from the school began to throw stones at the birds; my son told him not to hurt his bird, but a stone struck the female bird and killed her. There was considerable fuss made in the school about it afterward.

My wife felt grieved about the young birds and watched them and the male bird—the father of a nest full of unfledged, motherless birds. During that afternoon the widowed bird sent forth his plaintive call for his mate repeatedly, and seemed very disconsolate. The next morning he was very industrious in feeding his young until about ten o'clock, when he flew away and was gone about two hours, when he returned with another female bird of the same tribe. She took a survey of affairs and hopped around on the tree. The male bird poured forth several snatches of his sweetest melodies, when she flew away and in a few minutes returned with food in her beak and fed the young birds; from that time till they could fly, she was a faithful stepmother to them.—Cor. Phrenological Journal.

A Word Fitly Spoken.

A wonderful deal of good often comes from what Solomon calls "a word fitly spoken." The Hebrew for "fitly spoken" here means "set on wheels." All our words are set on wheels. If they are evil words, they go wheeling on for evil. Remember this.

One day a boy was tormenting a kitten. His little sister, with her eyes full of tears, said to him, "O, Philip, don't do that; it is God's kitten."

That word of the little girl was not lost. It was set on wheels. Philip left off tormenting the kitten, but he could not leave off thinking about what his little sister had said.

"God's kitten, God's creature—for He made it," he said to himself; "I never thought of that before."

PRIDE and indolence make more slaves than oppression.

CENSURE is the tax a man pays to the public for being eminent.

Diamonds in New York.

This country is rapidly advancing in all that tends to promote its general prosperity, and promises soon to surpass foreign nations in the prosecution of those arts which they have always deemed their specialties. Until a very recent date, Amsterdam has held the monopoly of the business of cutting and polishing diamonds, and by the experience of hundreds of years, during which period generation after generation has been born to and educated in the art, that city has attained an almost world-wide renown. Some years ago, however, a firm in Boston became engaged in the pursuit and has met with well-deserved success; but their attention was chiefly directed toward the repairing of diamonds, involving the reforming of the stones, and, of course, the repolishing. It was reserved for New York to go into the business thoroughly, and, much to the satisfaction of the leading jewelers of the country, the venture has proved more than successful.

Not long since several gentlemen of this city determined to organize a company having for its object the formation of a diamond market here. This was no small task. It required a large outlay of capital. It was necessary that the most experienced workmen in Amsterdam should be induced to come to this country to give us the benefit of their experience. Machinery had to be invented which should, if possible, surpass in efficiency that used in Amsterdam. These difficulties were overcome; the capital was obtained. Hollanders of long practice signified their willingness to embark in an enterprise which commended itself to their common sense. Machinery was invented which fulfills the requirements of the business, and just a year ago the "New York Diamond Company" began operations, having for President Mr. Isaac Hermann. The process of preparing diamonds for use is of singular interest. The business is divided into three distinct branches, and such is the proficiency necessary in each branch that it is extremely seldom that a workman can be found who is master of all three.

The rough diamond is first handed to the "cleaver." He is expected to see in an instant where any flaw in the stone is situated; he must be able to tell what parts must be split off in order to get rid of any flaw, and at the same time retain as much weight as possible, with the greatest brilliancy. He calculates how much the clippings will be worth, whether they will make small brilliants or rose diamonds, and having reached his decision he fastens the stone in the end of a wooden stick, securing it by a cement made of rosin and brick dust. Another diamond, already split and having a very sharp edge, is served in like manner, and with this he cuts a notch in the diamond he is about to split. This operation is performed over a small box containing a sieve which catches the diamond dust. The notch being made, the cleaver takes a small steel rule, which he places on the line in the direction of which the cleavage should be made. Having, apparently, taken his aim, he places the ruler in the notch, and with one or two quick taps with a steel rod the stone is split. Heating the cement, the workman removes the diamond; it has been so split that the flaw has been entirely removed. The diamond may be worth hundreds, perhaps thousands of dollars, and any ignorance or error on the part of the cleaver might destroy for his employer more than they could recover in weeks.

From the cleaver the stone is passed to the "cutter," and secured in exactly the same way. The diamond to be shaped is held in the left hand, which is protected by a heavy leathern glove. In the right hand is the stone which is to be used in grinding down the facets of the diamond which is under treatment. The process is very slow, and when the stone leaves the hands of the cutter it has lost whatever brilliancy it may have had, and looks more like a common pebble. But now comes a great transformation.

Visiting the polishing-room the attention is first attracted by what seem to be round steel tables. Upon closer examination these are seen to be the disks, which are used in polishing the diamonds. They are making 2,000 revolutions per minute, and are covered with a compound of oil and diamond dust. The first process is to solder the stone into a sort of brass cup, leaving visible only that portion of the diamond which is to be polished. Taking into consideration the fact that every stone has sixty-four different surfaces to be polished, it will be immediately seen how difficult the work of this operator is, and how exact he must be. Taking the stone he places it in the solder, now in almost a liquid state, and with his fingers shapes the metal around the diamond. This is then plunged into water, and as the steam arises from the molten mass, one naturally turns to see if the workman is provided with hands of iron. But no—practice has made him invulnerable.

The polisher now takes the diamond, touches the point with the oil and diamond dust, clamps the cup containing the precious stone in a wooden rest so that the diamond shall just touch the polishing disk. By weights he regulates the pressure. Experts will have three diamonds undergoing this process at the same time, and yet they seem to pay but little atten-

tion to their work—so little, in fact, that one might well wonder whether they are taking any interest at all in what they are doing. But little does the observer realize the years of patient toil that has enabled the operator to attain his great proficiency. At times a stone may be so hard that months are required to give it the proper brilliancy; but, sooner or later, the lustre appears, and what has been the object of so much solicitude and labor, finally comes out a perfect gem."—*New York Tribune*.

Tree Planting.

The Board of Agriculture has issued the following circular:

ROOMS OF CAL. STATE BOARD OF AGRICULTURE, SACRAMENTO, Oct. 20th, 1872.

To the Board of Supervisors of the County of GENTLEMEN—I am directed by the State Board of Agriculture to call your attention to an Act to encourage the planting and cultivation of shade and fruit trees upon the public roads and highways of this State, approved March 30th, 1868. The following is a true copy of the Act referred to:

An Act to encourage the planting and cultivation of shade and fruit trees upon the public roads and highways of this State.

[Approved March 30, 1868.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1.—The Board of Supervisors of any county of this State may, by an order of such Board, to be passed at a regular meeting of such Board, and to be entered in the minutes thereof, authorize the planting and cultivation of shade and fruit trees, by persons owning lands in such county, upon the public roads and highways adjacent to such lands.

SEC. 2. The Board of Supervisors may, by order, entered upon their minutes, designate the roads or highways upon which such trees may be planted, so describing such road, by reference to places and boundaries, that the same may be readily ascertained. They shall also, in such order, direct the species of trees to be so planted, their age when planted, their distance from each other, and their position with reference to the traveled road, and also all such other rules and regulations as they shall deem proper to secure the proper planting, growth and protection of such trees, and also to prevent their obstructing the travel upon such road.

SEC. 3. Whenever any person shall plant, upon any public road, in front of land owned by him, shade or fruit trees in accordance with the provisions of this Act, and also of such rules as the Board of Supervisors may prescribe hereunder, such person so planting such trees shall file with the Board of Supervisors of such county a written statement, setting forth therein the road or places upon which such trees are planted, the number and species of trees thus planted, and the time of planting.

SEC. 4. Four years from and after the date of planting such trees and giving the notice as provided in section third, the person planting such trees, or his legal representative, may present to the Board of Supervisors of such county his statement in writing, verified by the oath of such applicant, setting forth therein the number and species of trees originally planted, when and by whom planted or caused to be planted, and the number then living and in a thrifty condition; and for any wilful misstatement contained in such report the party making the same may be prosecuted for the crime of perjury.

SEC. 5. Upon filing such verified statement, the Board of Supervisors of such county shall allow to the party making the same the sum of one dollar for each and every tree so planted and growing thriftily, the same to be audited and paid out of the General Fund of such county as other claims are allowed, audited and paid.

SEC. 6. Nothing contained in this Act shall be construed to apply to any trees planted before the passage of this Act, or unless planted and cultivated as required by the orders of the Boards of Supervisors.

SEC. 7. This Act shall be in force from and after its passage.

You will see by the above that you are authorized by the Legislature to encourage the planting of trees on either side of every public road in your county. In the opinion of this Board, you could perform no act likely to result in such undoubted and general benefits to your county and people as the placing upon your records the proper orders for carrying into effect the provisions of the above law. We could name many reasons in favor of your action in this respect, but we do not deem it necessary. These reasons will occur to every intelligent mind, and we trust will secure your early and favorable action, so that the tree planting may be initiated and executed to a considerable extent during the approaching planting season. We would suggest, however, that no trees be allowed to be planted nearer than twelve feet from each other; that trees between three and eight years from the seed would be preferable as to age, and would recommend the following varieties as hardy, of rapid growth, and many of them valuable for wood or timber:

Black and Honey Locust; Black, White and Fruiting Mulberry; Osage Orange; native and Eastern Black Walnut; American Chestnut; European, American, and Cork Bark Elm; the different kinds of Maple; the Tulip tree, Carolina, Lombardy, and Silver Leaf Poplar; different kinds of Ash; the Apple, Pear, Plum,

Cherry, Almond, and Fig; Eucalyptus, or Australian Blue and Red Gum; Monterey Pine, Sugar Pine, Yellow Pine, Spruce Pine, Norway Spruce, Balsam Fir, Scotch Pine, European Larch, Monterey Cypress, Italian Cypress, California Redwood, California Laurel, and such other kinds as your Board may deem of value for your county.

Hoping you will take early and favorable action in this important matter, we are, respectfully, etc., by order of the Board,

I. N. HOAG,
Corresponding Secretary.

DOMESTIC ECONOMY.

An Oyster Chapter.

A famous French cook says the American is, without doubt, the best oyster in the world. This being the case, something more definite about the precious bivalve may be pleasant and profitable.

It often is a matter of much convenience to be able to keep oysters alive in the shell, especially when one lives a distance from market. To do this, place the oysters in a tub, with the concave side of the shell undermost, and sprinkle each well with salt and Indian meal. Fill up the tub with cold water, and over the top spread an old carpet or blanket. Freshen daily the water and food. They may be kept in this manner from a week to a fortnight. The tub must be kept in the cellar.

OYSTERS raw are inexpressibly delicious, if you happen to like them. Wash the shells clean before opening. Serve with vinegar, pepper and salt. Lemon juice is preferable to vinegar. Horse radish is an excellent addition to the lemon juice.

OYSTERS pickled will give the happy eater an appetite that only another and another oyster will satisfy. They form a very desirable and convenient dish for parties, country "donations," and, in fact, for any entertainment including refreshments. Remove the shells and all pieces of shells from one hundred and fifty fine, large oysters. Lay them in a deep dish and strain the liquor over them. Add salt to taste, as salt adds to their firmness. Simmer over the fire until the oysters are heated through, but not until they boil. Then drain out the oysters, putting them in a stone jar. To the liquor add a pint of cider vinegar, a large teaspoonful of blades of mace, three dozen whole cloves, and the same of pepper corns. Let all come to a boil, and when the oysters are quite cold in the jar pour the liquor over them. They can be used at once—will be better next day—and will keep a week in cold weather.

STEWED OYSTERS are served as a soup. Open them on a sieve to drain. Put them, with a little more than half the liquor, some whole pepper kernels, a few blades of mace, and some grated nutmeg, into a stew pan. Simmer gently for five minutes, adding, meantime, a piece of butter rolled in flour, or a quantity of sweet cream, which is better. The oysters need only be heated through to be sufficiently cooked. Try one before removing from the fire. When done, turn the contents over buttered slices of thin toast, in a deep dish.

CRUMBED OYSTERS.—Eight square soda crackers, rolled fine, seven ounces of butter, one quart of oysters. Put the crackers and oysters in alternate layers, dividing the butter equally through, and sprinkling a dust of pepper over each one. Use salt sparingly. Have crackers at top and bottom of dish. When ready for the oven, pour over a coffee cup of the oyster liquor. Bake a light brown.

CLAMS make a palatable breakfast dish, stewed, or made into fritters. They possess tonic properties, and are esteemed by invalids. They may be eaten raw like oysters. To stew, wash the shells clean with a scrubbing brush. Add water enough to prevent their burning, and boil until the shells open; then take out and remove the shells. Cook the clams in the same water, adding pepper and butter. Stir in rolled crackers. Long clams are nice broiled or roasted in the shell.

LOBSTERS.—A live lobster, weighing from one to two and a half pounds, is the kind to be chosen. To boil, lay it alive in a fish kettle; cover with cold water; cover the dish well and set on a brisk fire. Boil from fifteen to twenty-five minutes, according to size. When boiled, take it from the kettle, separate the body from the tail, and place in a colander to drain. Use everything but the stomach and the black or bluish vein running along its back and tail. It is eaten with salt, pepper, vinegar, oil, mustard and chopped parsley. Crabs may be broiled and served similarly.

CRAW-FISH, sometimes called river or fresh water crabs, and often taken for young lobsters, are excellent to eat, decorate dishes finely, and are dressed and served like lobsters and crabs.—*Rural New Yorker*.

THE VENTILATION OF CUPBOARDS.—In the sanitary arrangement of houses, even for the richer classes, the ventilation of cupboards is neglected. In places let out as tenements, closets are the receptacles for bread and the fragments of various other kinds of food. Often the dirty

clothes are put away in these places waiting for the washing. It is therefore most important that air should be plentifully passed through such corners; generally, however, there is but little arrangement made for this purpose. The doors are kept close without any perforation. There are no ventilators in the walls and, in consequence, those places become cases of polluted air, which, when the doors are opened, escapes over the apartments. This defect is visible in nearly all houses of old date; and while looking at some dwellings of recent construction it is seen that, although care has been generally taken to ventilate stair cases and rooms, the cupboards are in this respect neglected.—*Ohio Farmer*.

COOL, BUT NOT CLEAN.—Bogus ice cream is mainly manufactured of corn starch, French clay, and poisonous coloring matter. The beautiful carmine which pervades the treacherous compound comes from the cochineal bug. A continued course of this poison produces the most terrible maladies. First dyspepsia, then scrofulous eruptions, accompanied by a loosening of the teeth and a dropping out of the hair. After this a deathly lassitude seizes upon the frame of the unfortunate victim, and insanity or hopeless idiocy ends the unfortunate career. From experiments made by eminent physicians in France, it has been shown that four ordinary plates of this horrible mixture will cause death in from one to two hours. The same quantity given to a baby will produce at first convulsions, and in five minutes afterward a state of coma—ending in a most terrible death. This agent of destruction is not confined to the street corners alone. It lurks in gilded saloons and places of fashion resort.

Practical Recipes

HOW TO MAKE DRESSING.—Take the liver, heart and gizzard of a turkey or chicken, if such is the meat to be stuffed, preparatory to baking, parboil them, then chop fine with one and one half pounds of raw salt pork, not freshened, mix with two pounds of bread-crumbs, one tablespoonful of sifted sage, pour on boiling water until it is all thoroughly settled, fill the fowl, and if there is more dressing, put into a tin or earthen dish to bake. Beef hearts are nice stuffed and baked. And a dish of this dressing goes very nicely, if there is no other meat to cook with it. In place of the liver, heart, etc., any bits of fresh meat, either cooked or raw, will answer. Fresh fish are very nice stuffed and baked; place two together, and put dressing between.

BEEFSTEAK.—Take a round steak and make a dressing. Lay on the meat and sew up the edges. Put this in a dripping-pan with a little water, plenty of butter, a little salt and pepper. Turn the meat and bake both sides.

APPLE FRITTERS.—This is a favorite dish with many, and often preferred to dumplings. We like them prepared thus: Make a batter, not very stiff, with one quart of milk, three eggs, and flour to bring it to right consistence. Pare and core half a dozen large apples, and chop them to about the size of small peas, and mix them well in the batter. Fry them in lard, as you would doughnuts. For trimmings, we like powdered sugar best, though good brown sugar will do.

CHEAP RULE FOR SPONGE CAKE.—Three eggs, one cup of sugar, one cup of flour, three teaspoonfuls of water, one teaspoonful of cream of tartar, one-half teaspoonful of soda, a dessert spoonful of vinegar stirred in quickly, and the last thing added. Bake about twenty-five minutes.

BAKED TOMATOES.—This simple and delicious dish is made by cutting some ripe tomatoes in half, putting them in a buttered dish with some bread-crumbs, butter, pepper and salt, and baking till slightly browned on the top.

APPLE CUSTARD PIES.—Grate, or stew to a pulp, twelve large apples; to this add a teaspoonful of salt, sugar, nutmeg, three eggs well beaten, a pint of cream or milk and a tablespoonful of melted butter, the grated rind of two lemons, and the juice of one; pour the mixture into plates lined with rich paste, and arrange strips in a network over the top; bake a light brown, and sift over them powdered sugar.

TO IMPROVE STARCH.—To each bowl of starch add one teaspoonful of Epsom salts, and dissolve in the usual way by boiling. Articles starched by this method will be stiffer, and will be rendered to a certain degree fireproof.

PUMPKIN PRESERVES.—Cut a nice ripe pumpkin into pieces a third of an inch thick, paring them. Take equal weight in white sugar. Allow the juice of one lemon to a pound of pumpkin. Let the pumpkin remain in a pan with the sugar and juice all night. In the morning put into a preserving kettle, cooking till perfectly clear. Be sure to skim well. Then add lemon peel cut in pieces small as marbles. Take out and strain the syrup through a jelly bag, and pour over the pumpkin.

TO FRY SWEET POTATOES.—Pare, slice thin, fry in hot lard, like fritters, and sprinkle with fine salt as they are taken from the lard.

TO SAVE FRUIT WITHOUT SUGAR.—Put in wide-mouthed bottles; fill up with cold spring water. Put them in a vessel of water up to the neck; boil half an hour; tie bladders or oil-skin over tight, or cork and seal while hot. Let them set until cold. Keep in a cool place. Use as soon as opened. Pack hay around while boiling, to steady them.

(Continued from page 297.)

work of the highest order, already performed, and which is good not only in itself but as the seed-corn of future harvest. The work of the United States Coast Survey, for example, in its careful study of the hydrography of the coast, its accurate delineations of the harbors, its study of the tides and currents, its co-operation with men of science at the East in the solution of astronomical and geodetic problems have gained renown for California science, not in our own country only but in Europe. The day is, I trust not far off, when the geodesy of the Pacific coast, will be connected with that of the Atlantic sea-board, and the triangulation of our continental domain will thus be completed as a basis for all future cartography.

A kindred service, and of equal merit has been rendered by the engineers of the army. Then there is the Geological Survey of the State, which surpasses in thoroughness and completeness any kindred work undertaken in the country, and is the delight and pride of all American scholars who take an interest in the lasting investigation of the natural characteristics of the land, either for its own sake or regarded as a basis for social and political growth. I have sometimes thought that this great work would have been more popular if its designation had not been restricted to Geology, for the law requires and the observers carry on much more than geological researches. There is no State in the Union which has such good maps (Massachusetts, not even excepted) as those prepared by the Geological Survey of California, and when the extraordinary diversity of the surface, its vast area, and the lack of roads and habitations are remembered, it is wonderful that so much has been done and so well done in this short time. But the topography is only one part of the survey; its geology, palaeontology, ornithology and botany, subjects on which I have less right to speak, are equally commended by those who are expert in these branches of science. Growing out of this survey, though beyond the limit of the State, and under the national authority, are the excellent surveys of the fortieth parallel, by a party of civilians attached to the corps of army engineers. Blending all the men of science together as a brotherhood of scholars is the Academy of Sciences, whose publications are of great scientific value—so valuable that you need not be surprised to learn that a part of the series, the supply of which is exhausted, was transcribed a few days ago with pen at the request of Agassiz, as essential to his work. A young society which has done so well, will be an important supporter of our growing University.

I would remind you, that the literature of this coast has already, like the fruits here growing, a richness and flavor of its own, so that some have even said that California has alone of all parts of America made quite new and original contributions to one literature. The humor, the wit and the poetry of the Sierras are fresh as the breezes of the hill tops, and as spicy as the groves of pine. Oratory has here spoken with a golden tongue, the echoes of whose patriotism still are floating around us. To foster genuine literature there is a journal whose fame has gone Overland and over seas as well, the encourager, the suggester, and the producer of that which is choice and enduring.

Where such science and such literature flourish, the day of the university has certainly dawned.

Finally we have to build upon the good will of the State, manifested already in generous appropriations, ripe clearly for generous culture, and ready I believe to sustain and advance its youthful University.

Who are the Builders.

Can we now like master-workmen distribute the parts so that the various toilers will recognize their task? Let us make the attempt.

It is on the Faculty more than on any other body that the building of a University depends. They give their lives to the work. It is not the site, nor the apparatus, nor the halls, nor the library, nor the Board of Regents who draw the scholars—it is a body of loving teachers, skilled in their specialties, eminent in their calling, loving to teach. Such a body of teachers will make a University anywhere. Agassiz wherever he goes is surrounded by a company of disciples. Whitney would have his class in language at Berkeley or Berkeley. Such men will draw not pupils only, but the books and the collections they require as naturally as the voice of Music drew the rocks and stones. The genius loci, the spirit of the place, will be the spirit of the Faculty. If truth and culture are their aim, truth and culture will flourish in this college where they toil. If sordid motives or unworthy jealousies spring up among them, the trust they bear will be in peril. More than anything else, a University requires a large and vigorous staff so that the various sciences and languages may have their devotees, young men of different tastes and characters may find fit guides, the idiosyncrasies of one school or chair may be modified and counterbalanced by the qualities of another. It is now difficult both in Europe and this country to secure enough eminent teachers, for other walks of life are better paid and are held in equal honor; let then those who are honorably engaged be not unkind to depart and let their numbers be increased at every opportunity.

The Regents or Trustees of a college have the great responsibility of appointing this body of teachers and of promoting their work. They are the power behind the throne, unseen in the daily work of the college, but never for a moment unfeeling. Upon their wise choice of instructors, their careful guardianship of funds, their constructions of buildings, their developments of new departments and schools, their mode of presenting the University to the public will depend the confidence and liberality of the community. On them the shafts of criticism are often inconsiderately hurled, but in the long run, they will find the gratitude of the community to their own consciousness of fidelity and self-sacrifice in behalf of learning and the country.

The State authorities, executive and legislative, have also a great part to perform in the support of the University, not by over-much legislation nor by hasty action in respect to its development, but by steady, munificent and confiding support.

None of the higher educational establishments in this country will flourish without the support of the ministers of religion. Their counsels, and those of other educated professions, are continually sought by parents and young men; they are interested in all that promotes

intelligence and truth; they have been from the earliest colonial days the founders, guardians, and teachers of our best institutions. I trust this University will always merit their support for if worthy it will surely win it.

The Press is another social power on whose help we must rely. It can quicken or retard the establishment of a complete University, by its favoring or censorious attitude. Its criticism, the University should not fear; its cordial support the University should desire. Powerful everywhere, the Press in a free country is a force which all must appreciate; let us hope that its assistance will be generously accorded.

On the men of wealth in this community I greatly rely. It is true the State has been, and is likely to be liberal in its appropriations,—but a new University requires almost unlimited means for its support. The library alone could well employ in the purchase of books, and the payment of salaries, the income of half a million of dollars. A school of science would not be liberally endowed with a capital of that amount. Funds to the extent of several thousand dollars might be annually be employed in scholarships and prizes. Homes or halls will be needed in some form or other for the occupation of the students when the University goes to Berkeley. Professorships representing studies which are not taught to undergraduate students, but which should be cherished in the University must also be founded. I trust the day will come when the spire which silently points heavenward will mark our place of worship. But for all these things we cannot expect the public treasury to be opened. Relying upon that for the most essential things, we must look to men of wealth to provide more complete endowments.

What are we to Build.

[This portion of the address is here omitted. It consisted of a discussion of some of the elements which make up an American University,—the classical college, the school of science, the departments of agriculture, mining and mechanics arts, the advanced schools of physiology, philosophy, law, medicine, the fine arts, and other branches,—the library, the museums, the observatory, the fellowships and scholarships.]

The Spirit of the Builders.

[Under this head allusion was made to the necessity of keeping the individual subordinate to the University; of building both for the present, and for the future; of maintaining a Catholic liberality toward all departments of learning; of keeping well before us a high ideal. Reference was also made to the relations which should subsist between the scholars and the teachers, and between the teachers and the public; and to the possibility of promoting simultaneously abstract science, and practical advantages.]

Method of Building.

One of the next topics to be considered is the relative importance of different branches and what studies most deserve encouragement? Shall literature and language, the traditional classical course of our colleges be made first in rank? or shall the place it has held be given up to science in its theoretical and practical aspects? are the modern languages to be chosen rather than the ancient? shall history and political science, with the study of the Roman law, or the theory of the State be preferred; or shall mathematics be the dominant theme? is the acquisition of knowledge, or the acquisition of discipline, as it is called, be the end of instruction? Shall general studies which may be presumed to have an equal value in all the varied callings of life, or special studies which have decided reference to a professional or technical career be commended to the youthful student? shall lectures, or shall recitations, or shall literary and scientific research be the method of education? shall university freedom of choice and of work be permitted, or shall collegiate restrictions and control be insisted on? These and a score of kindred questions are now under discussion in the various colleges of this country.

A part of the difficulty arises from confusing the requirements of young scholars, like those who have just left the high school and the academy, and those of more advanced students whose tastes, talents and wants are specialized. Give the former, prescription; give the latter, freedom; but let prescription vary with the varying peculiarities of individuals,—and let the freedom allowed, be the freedom which is governed and protected by law. College work for college boys implies daily guidance under prescribed rules; professional work implies voluntary, self-impelled enthusiasm in the acquisition of knowledge.

Another difficulty arises from the rapid extension of human sciences. It would be impossible for any one, were he gifted as Leibnitz, or long-lived as Humboldt, to master the details of modern researches. The average scholar, having neither the genius of the one, nor the life-assurance of the other, must be content to fill a much more restricted field.

I take it for granted that in the State of California, there is occasion to make a plea for the study of modern science. The need of civil, mining and mechanical engineers, of expert geologists and mineralogists, of devoted naturalists, and physicists, of chemists and metallurgists, of geologists, topographers and map-makers, of agriculturists, mechanics and manufacturers and merchants, well trained for their various callings is now so obvious, that I need not advocate the importance of science in education. Its place is acknowledged. The question is how to secure the best sort of instruction, the fullest sequence and relation of studies, the most eminent teachers, the most complete laboratories, and the best apparatus; and likewise how to encourage that special proficiency which is indispensable to success in modern scientific professions with that literary culture which makes a scholar, and befits a gentleman. Health, wealth, popular intelligence, and the spread of Christian civilization are so dependent upon the discoveries of science, and the applications of these discoveries to a thousand useful arts, that a young and still undeveloped State may well afford to be liberal in the encouragement of this class of studies. How best to secure this scientific education it would take long to tell and I postpone the special consideration of this theme for another near occasion.

But while nature and its laws in all their various aspects and applications are thus engross-

ing, Man and all his experience and achievements are likewise of transcendent importance. Above all matter is man; above both matter and man, is the "Divinity that shapes our ends, rough hew them as we will." So that the individual or the institution that regards the natural forces of this globe only, without observing likewise the intellectual and spiritual forces which are also at work, sees only half the world.

I recognize in the fullest degree the need there is of science. Give us more of it and not less. Encourage the most thorough and prolonged search for the truth which is to be found in the rocks, the sea, the soil, the air, the sun, and stars; in light and heat, and magnetic forces, in plants and animals, in the human frame, in physical ethnology and in archaeology, but let us also learn the lessons which are embodied in language and literature, in laws and institutions, in doctrines and opinions, in historical progress and international relations. Let language, history and literature, oratory, poetry and art still form a chief part of liberal culture, while mathematical, physical and natural sciences have admitted to the rank from which they have long been excluded.

When the times shall come to discuss in detail the possible changes in the university courses, when an enlarged faculty and increasing funds shall enable the authorities to provide a more generous and varied culture, we shall find the experience of other institutions in a high degree suggestive.

At West Point we see the excellence of superior mathematical training, a well devised course of text-books, rare qualities in the chief mathematical instructor and in his associates, power to prescribe exactly what the course shall be, life-long honors dependent upon success; hence comes the renown of that school of Engineers from which Bache and Humphreys, and Trowbridge have been sent forth. The scholar's choice is Holston's.

At Harvard, in the undergraduate department liberal provision is made for instruction in ancient and modern languages, in chemistry, mining, physics, mathematics, in history, metaphysics and ethics, in botany, mineralogy, and natural history. The choice in all this variety of studies is given to the scholar, soon after his entrance.

At New Haven, the traditional college course has been maintained with a cordial recognition of the modern languages and of history; and side by side with this classical college, the Sheffield School of Science has grown up, where scientific studies predominate. The scholar chooses when he enters between the scientific and the classical course; the latter allows but little further freedom of election,—in the Sheffield School, there is again a choice between seven different courses.

At Cornell University, there is the Harvard freedom of choice with easier conditions of admission to all lines of study but the classical, with manifold modern appliances and helps for the pursuit of technical and scientific studies, and with a generous recognition of history and humanity fostered by the studies of President and of the illustrious Oxford graduate, who has there made his home.

At Princeton, since the accession of the able Scotch metaphysician who guides its affairs, required studies, mathematical and linguistic as of old, engage the student in his first two years; in the last two years of his residence, he selects one of several prescribed specialties.

Besides these universities and colleges we must also inquire what the independent schools of agriculture and technology are doing, as in Boston and Amherst, Hoboken and Troy, Urbana and Lansing.

English and German experience will likewise be of value. Everywhere the problem is one, but the solutions are manifold, for the conditions are complex and vaguely determined.

The Need of a School of Science.

With all the experience of other places before us it is my belief that one of the first wants of California is a distinct, complete and well organized school of science and technology, such as your organic laws contemplate, in which men of eminence shall have the means and leisure to make researches in all the departments of investigation, to whom young men shall resort for training in the studies which are closely related to the development of mines, agriculture, manufactures and means of transportation, and from whom the public at large, by the press, by the lecture and by informal consultation, may be instructed in the characteristics of this remarkable country and the mode in which its resources can be made most serviceable to mankind. My chief anxiety is whether the people of this coast are yet ready to pay for the luxury and the advantage of so serviceable an institution. It will require a great many teachers, costly laboratories, large funds,—more I fear than the University with all the claims upon its treasury is yet able to command. Perhaps some individual whose experience has brought him the value of such knowledge, and who has an honorable ambition to have a name among the benefactors of the State will supplement the resources of the University with a generous private gift like those which have done so much for the culture of Eastern youth and the improvement of the Atlantic States.

A Plea for History and Language.

[The address next considers the importance of historical and linguistic study—especially with reference to the geographical and historical relations of California.]

The recognition which should be given to religion in a State University involves considerations which are not to be encountered in colleges founded by church

authorities or by private corporations. The old English colleges, whose traditions New England has gratefully accepted, were the children of the church, and though their doors are no longer shut to nonconformists, their ecclesiastical character is still decided. Harvard College, the mother of all our higher institutions, still bears upon its escutcheon "Christo et ecclesie," the motto of its founders. Yale College went back to the Old Testament for a symbolic watch word, and bears upon its seal, the open oracles inscribed with Hebrew characters. At Nassau Hall, we are told that "in regard to religious truth there will be no uncertain sound." At Cornell University a generous gift has been accepted for a chapel, with a foundation, if I am rightly informed, which will secure the services of eminent preachers, and with a plan for daily religious worship. But none of these institutions is a State University, though all of them were fostered in their infancy by the kindly nourishment of the public treasury. We are on the contrary the guardians and friends of a State University, established in the midst of a community more varied than almost any in the land. Here are still seen the traces of the Spanish pioneers who brought to these shores so long ago, with the symbol of the cross, and the emblematic keys of the Roman pontiff; nearly all the various forms of Christian faith which the Episcopal and non-Episcopal churches of the Reformation have adopted, find here their advocates; there are many among us, likewise, who look for a Messiah yet to come; and crowding into these harbors behold the children of Confucius and the worshippers of the Unknown Gods.

The State, as a body politic, protects the assemblies and the worship of all these bodies; it favors none. How shall it be with the University and the public school which perform the service of the State in the education of the young? Shall religious teaching be excluded from the University, or shall it have a covert and apologetic place—shall it be an organized force or a silent and all pervading influence? Shall its spirit be narrow and sectarian, or shall it be catholic and free? The difficulty is not felt in California alone. It is involved in the toleration of the modern Christian state toward all forms of religious belief, and in its generous provisions for the promotion of education. In meeting the difficulty it may be well to bear in mind that religion includes four different elements, worship, doctrines, precepts and spirit. A religious spirit no one objects to; it is the spirit which works "outward and not inward, upward and not downward, forward and not backward, and which lends a hand;" it is the spirit which "loves justice, shows mercy and walks humbly before the Lord;" it is the spirit of truth, of faith, of hope and of charity; it is the spirit of "peace on earth, good will to men." We may say as we say of science, the more we have of the genuine the better for mankind. Whatever precepts will tend to cherish this inward spirit and the outward unrighteousness and selfishness which proceed from it, all good men will welcome. When we begin to formulate doctrines into creeds and symbols, then comes controversy and difference—the right wing against the left wing, the conservative against the liberal, so that an attempt to enforce the doctrines of this or that ecclesiastical body will be sure to come to grief. The University is no place for sectarian controversy or denominational zeal. It is a school of learning. But as a school of learning it must teach the history of opinion and belief, it must teach the rise and growth and decay of institutions, it must show how Christian civilization has overcome pagan practices and belief, and has purified the home, the State, and the relations of nations, modifying laws, usages, manners and language, establishing charities, reforming prisons, securing honesty, virtue and justice. All this should be taught by scholars and not by partisans. If the body of teachers and scholars imbued by this spirit of truth and of duty will daily assemble of their own accord to acknowledge their dependence upon Divine wisdom, to chant a Psalm of David, and to join in the prayer which the Master taught his disciples—who can doubt that this communion of worship will elevate the character of all who engage in it and of all the institution to which they belong? So far as this I would have this University go, forcing none to attend upon such religious worship, drawing all to it by their own consciousness of its value.

But many would go further than this. Many a parent, many a religious teacher, many a church desires and insists that, youth at the critical period of college life shall be surrounded by positive, outspoken, and persuasive religious influences. They are afraid of a State University, and long for a denominational college. Hence come the many attempts to promote the higher education, when one united effort would hardly be adequate. But it seems to me that the end in view might be secured by better methods. Why may not a religious body or association, or private individual, desirous of protecting the young men from temptation and encouraging them in the higher life, establish in connection with the University, a home, or hall, or college, which should be controlled according to the founder's views, should be a privileged residence, should be endowed perhaps with prizes and purses. I can imagine on the slopes at Berkeley, a group of students' houses, bearing honorable names, and made attractive by the conveniences of their arrangements, the good fellowship within their walls, the privileges of the foundation. I should hope they would not be barracks, or dormitories—but homes, with rooms of common assembly and of private study. I should hope the bath room, and the dining hall would be included in the structure, and if any would go so far as to have a place of light amusement and recreation, I for one, should not object. Within such college halls, associations would be cherished like those of Oriel and Christ Church at Oxford, of South College and Farnham Hall in New Haven. Here too, under a right guidance, the best of moral and religious influences might be promoted. What church, what association, or what generous individual, will be the first to establish such a hall?

Conclusion.

[The address concluded with the question, "What is all this culture for?"—an eulogy of the services which High Schools of learning have rendered to the world, and an appeal for generous confidence and support so that the University of California may become worthy of the great name of the State, and of its leading position in the next or Pacific phase of human civilization.]

A NEW ENTERPRISE.—Among the new enterprises in contemplation among some of our capitalists is the erection of a flax-mill. This will set our farmers to thinking about the raising of flax. Linen goods may be manufactured here as cheaply as in any part of the country. Besides it is another step toward the encouragement of home manufacturing interests, which are so much needed to make our city prosperous. We are assured that such an establishment will be constructed somewhere within the city limits, if a site suitable can be had. If not the company will go to some adjoining city, probably Oakland or Alameda.

LARGE quantities of dark-colored salmon trout are caught in Eagle Lake, near Susanville, weighing from two to five pounds each.

SECOND-HAND cares, like second-hand clothes, come easily off and on.

LITHOGRAPH.—We have received a very neat and handsome colored lithograph representing a 6-horse stage of the California and Oregon Stage Company, with a view of Mount Shasta in the distance. The lithograph is as well executed a one as we have ever seen, much resembling a chromo, the figures very life like and scenery magnificent.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Nov. 7.
FLOUR—The interior and local demand is fair, with a light inquiry for export. We quote prices as follows:

Superfine, \$4@4.25; Extra, in sacks, of 196 lbs. \$5.25@5.50; Oregon brands, \$4.75 @5.25 in sacks of 196 lbs.

WHEAT—The market is quiet with free receipts. Sales aggregate 50,000 sacks fair to choice, at \$1.50@1.62½. The range for shipping grades is \$1.60; Dark Coast, \$1.40 @1.45, and Bright Coast \$1.50@1.55, choice milling, \$1.62½ per 100 pounds.

The latest Liverpool market quotations dated Nov. 6th, are: average California wheat, 12s 8d; California Club wheat, 13s @13d. 3d.

BARLEY—The market is steady. Bay feed, \$1.20@1.22½; Bay brewing, \$1.25@1.27½; Coast, \$1.17½@1.20 per 100 pounds.

OATS—Market is better. Ordinary to choice, \$1.60 to \$1.75 per 100 lbs. Light feed, \$1.50@1.55; good do. \$1.60@1.65; heavy do. \$1.70@1.75; Oregon, \$1.75.

CORN—New crop, \$1.20@1.25 per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$1.50@2.00 per 100 lbs.

RYE—Is quiet at \$1.80 per 100 lbs.

STRAW—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN—Price is now \$22½ per ton from the mill.

MIDDLINGS—For feed, are selling at \$30 per ton from mills.

OIL CAKE MEAL—Is steady at \$30 per ton from the mill.

HAY—Receipts have been free during the week. Wild Oat, \$14@15, and choice wheat, \$18@18.50 per ton. Quotable at close at \$12@18.50 ordinary to choice.

HONEY—Best Los Angeles and San Diego sells at 20@22½; other kinds 10@15c in comb; strained, 10c@15c, per lb.

BEESWAX—Quiet at 33@35c per lb.

POTATOES—There has been a pretty fair demand this week, and free supplies. Sales of different kinds at from 75c. to \$1.40. Carolina, 75c. per 100 lbs.

ONIONS—Quotable at \$2.00@2.35 per 100 lbs.

WOOL—The market is improving and sales are freer though with no marked advance in prices. Sales of 400,000 lbs at current rates. Spring is neglected and nominal. Fall, 10@12c. for burry, and 16@18c. for clean; 20c.@21 for choice.

TALLOW—Good quality of Cal. 8@8½c. Mustard, 1@3c. per lb.

PROVISIONS—Following are jobbing quotations: California Bacon 13@14c per lb.; Eastern do. 12@13 for heavy and 14@15 for sugar-cured Breakfast; Cal. Hams 14½@15½; Eastern do. 19@20c; California Smoked Beef, 13@13½c. per lb.

BEANS—The following are jobbing rates: Pea 2.90@3.00 Small White \$3.00; Small Butter, \$3; large \$3.50; Bayo, \$2.75@3.00; Pink, \$2.75 per ctl.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8 Pecan, 20c per lb.; Hickory, 12c; Brazil, 16c. Chili Walnuts, 12½c; French Almonds, 25 @30c.; Princess Almonds, 35@40c.; Filberts, 18c; Cocoanuts, \$10.00@12.00 per 100.

HOPS—California are dull and nominal at 30c per lb.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 8@9 per lb.; do. 2d quality 6@7 per lb.; do. 3d do. 4½@5c.

VEAL—Quotable at 8@10c.

LAMB—Scarce at 9c.

MUTTON—Quiet at 6½@7c. per lb.

PORK—Undressed grain-fed is quotable at 5½@6½c.; dressed, grain-fed, 8@9c. per lb.

POULTRY—Live Turkeys, 18@20c. per lb.; Hens \$7.00@7.50; Roosters, \$6.00@6.50 per dozen; Spring Chickens, \$4.00@4.50; Ducks, tame, \$9.00@10.00 per doz.; Geese, tame, \$15@18 per dozen.

WILD GAME—Quail, \$1.75@2.00; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, \$75c.; Mallard Ducks, \$4.00; Teal, \$2.00@3.00; English Snipe, \$2.00 small, 75c@1; Venison, 8c. per lb.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is steady at 30@70c., per lb. Inferior and ordinary roll is plentiful, but dull at 30@50c.; choice, scarce at 60@70c. New firkin is quotable at 25@35c.; pickled, 32½@40c.; New York, 25@30c.; Western, 15@20c.

CHEESE—New California, 10@15c; Eastern at 14@16c. per lb.

Eggs—California fresh, are sold at 55@60c.; Oregon, 40@45c.; Eastern, 25@30c. per doz.

LARD—California 12@13. Eastern in cases

Monthly Diagram of the S. F. Wheat Market Rates.*

FROM OCTOBER 1 TO OCTOBER 31, 1872.

DAYS OF SALE.....	1	2	3	4	5	7	8	9	10	11	12	14	15	16	17	18	19	21	22	23	24	25	26	28	29	30	31
WHEAT.	1.65	1.63	1.62	1.61	1.60	1.59	1.58	1.57	1.56	1.55	1.54	1.53	1.52	1.51	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.43	1.42	1.41	1.40	1.39	1.38

*The prices here quoted are the highest and lowest obtained in reported sales. The highest is always for milling. The prices marked @ are those of shipping wheat, quoted or reported. When there is only one price, and that marked @, it represents both shipping and milling, as is also the case where the highest price is marked @.

13@13½c.; do in tes. 11½@12c.; in kegs, 12@12½c. per lb.

HIDES—Sales for the week embrace 1,380 Cal. dry at 17@18c., and 1,845 salted at 8@9.

FRUIT MARKET.

Limes, per M., 12 50@15 00	Quinces, bx., 2 00@2 50
Apple Lemons, M., 11 00@12 00	Pomegranates, lb., 1 00@1 25
Sicily do, bx., 11 00@12 00	Figs, 4 00@5 00
Bananas, per bunch, 40 00@45 00	Crab Apples, lb., 1 00@1 25
Pineapples, per dz., 75 00@80 00	Strawberries, lb., 18 00@20 00
Apples, Rus. Lbx., 75 00@80 00	Cantaloupes, dz., 50 00@60 00
King, do., 1 00@1 25	Grapes, Mission, 1 50@2 00
R. I. Greening, 1 00@1 25	Chasselas, 1 00@1 25
Northern Spy, 1 00@1 25	Bk Malvoisie, 1 00@1 25
Baldwin, 1 00@1 25	Rose of Peru, 3 00@5 00
Senator, 1 00@1 25	Bk Hamburg, 3 00@5 00
Spitzenberg, 1 25@1 50	Black Prince, 3 00@5 00
Pears, Bartlett, 2 00@2 50	Muscat of Alir, 3 00@5 00
Seckel, do., 2 00@2 25	Flame Tokay, 4 00@5 00
Winter Nellis, 2 00@2 25	Black Morocco, 6 00@10 00
Glout Morceaux, 25 00@30 00	Wine Grapes, 14 00@15 00
East. Beaure, 1 25@1 50	

DRIED FRUIT.

Apples, per lb., 7 00@8 00	Pitted, do, 20 00@22 00
Pears, do, 8 00@9 00	Raisins, do, 8 00@10 00
Peaches, do, 8 00@10 00	Black Figs, do, 8 00@10 00
Apricots, do, 8 00@10 00	White, do, 15 00@20 00
Plums, do, 6 00@8 00	

VEGETABLES.

Cabbage, per lb., 1 00@1 25	Cucumbers, per box, 1 50@2 00
Garlic, per lb., 5 00@6 00	Summer squash, per box, 2 00@2 50
Rhubarb, per lb., 1 00@1 25	Tomatoes, river, per box, 60 00@70 00
Green Peas, 3 00@4 00	String Beans, per lb., 3 00@3 50
Sweet Corn, 3 00@4 00	Lima Beans, 3 00@4 00
Green Corn, 2 00@2 50	Peas, 2 00@2 50
Marrowfat Squash, 6 00@8 00	Peppers, 6 00@8 00
Artichokes, per lb., 4 00@5 00	

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING—English Standard Wheat bags, hand sewed, 15½@15½c.; Flour sacks 8½@9½c. for qrs. and 13½@13½c. for hfs. Standard Gunnies are jobbing at 18½c.; Wool 70@75c.; Barley sacks 16c.@18c.; Hessians, 40-inch goods, 12@12½c. per yard.

BUILDING AND FENCING MATERIALS—The demand from the interior and city is light, probably on account of high prices.

Export trade is light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$19@20; do, surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @40; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, per M., 20 00	
Rough refuse, per M., 16 00	
Rough clear, per M., 32 50	
Rough clear refuse, per M., 22 50	
Rustic, per M., 35 00	
Rustic refuse, per M., 24 00	
Surfaced, per M., 32 50	
Surfaced refuse, per M., 22 50	
Flooring, per M., 30 00	
Flooring refuse, per M., 20 00	
Beaded flooring, per M., 32 50	
Beaded flooring refuse, per M., 22 50	
Half-inch Siding, per M., 22 50	
Half-inch Siding refuse, per M., 16 00	
Half-inch Surfaced, per M., 25 00	
Half-inch Surfaced refuse, per M., 18 00	
Half-inch Battens, per M., 22 50	
Pickets, rough, per M., 14 00	
Pickets, rough, pointed, per M., 16 00	
Pickets, fancy, pointed, per M., 25 00	
Shingles, per M., 3 00	

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—	
Rough, per M., 25 00	
Flooring and Stepping, per M., 37 50	
Flooring, narrow, 40 00	
Flooring, second quality, per M., 30 00	
Laths, per M., 3 50	
Furring, per lineal foot, 1c	

Redwood—

Rough, per M., 25 00	
Rough refuse, per M., 20 00	
Rough Pickets, per M., 18 00	
Rough Pickets, pointed, per M., 20 00	
Fancy Pickets, per M., 30 00	
Siding, per M., 27 50	
Longued and Grooved, surfaced, per M., 40 00	
Do do refuse, per M., 27 50	
Half-inch surfaced, per M., 40 00	
Battens per lineal foot, 42 50	
Shingles per M., 1c	
Sugar Pine is jobbing at \$50@60 for clear, \$35@45 for second quality, and \$28@30 for third quality.	

COFFEE—Costa Rica 19@19½c; Guatemala, 18c. Javi 23c; Manilla, 18½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 10c.

SPICES—Allspice 14@15c. Cloves, 23c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19@20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod new, in bundles at 6½c.; Salmon in bbls. \$5.00@6.00, hf do. \$3.50@4.50; Case Salmon, \$3.00 for 2½-lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.00@2.25; Mess, \$2.50; Extra mess, \$3.00.

NAILS—Quotable at \$6.00@9.00 for assorted sizes.

PAINTS—Standard White Lead 10@12½c;

Whitening, 2c.; Chalk 2½c.; Paris White 3c.; Ochre, 3½c.; Venetian Red, 3c.; Red lead, 11½c.; Litharge, 11c. per lb.

RICE—Sales of China No. 1 at 6½@7c. and No. 2 at 5½@5½c. per lb.; Siam, quotable at 5½@6c. in mats; Japan, 5½@6c. per lb.

SOAP—The prices for local brands are 5@10c. and Castile, 10@12c. per lb.

SUGAR—We quote Cal. Cube at 12c; Circle A Crushed, 12c. and Granulated 11½c; Golden C. 10c; Extra Golden C. 10½c.; Hawaiian 8@10c. as extremes per lb.

SYRUP—Prices may be given as follows: 32½c. in bbls, 35c. in hf bbls, and 40c. in kegs.

SALT—California Bay sells at \$5@5¼; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

TEA—We quote as follows for bulk descriptions: Amoy—Common to fair, 30@45c.; superior to fine, 55@65c.; extra fine, 75@85c. Foochow—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75c. Souchong and Congou—Common to fair, 35@45c.; superior to fine, 50@60c.; extra fine, 75@95c. Japans—Common to fair, 30@35c.; superior to fine, 40@45c.; extra fine to finest, 55@75c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, Nov. 7, 1872.

Butter, Cal fr. lb., 60 00	Wheat, 22x36, 15 00	15 00
do Oregon, lb., 50 00	do 22x36, 14 00	14 00
Honey, per lb., 20 00	do 22x36, 13 00	13 00
Cheese, per lb., 20 00	do 22x36, 12 00	12 00
Swiss Cheese, lb., 50 00	do 22x36, 11 00	11 00
Eggs, Cal. doz., 65 00	do 22x36, 10 00	10 00
Plums, dried, lb., 15 00	do 22x36, 9 00	9 00
Lard, per lb., 18 00	do 22x36, 8 00	8 00
Sugar, cr., 7½ lb., 1 00	do 22x36, 7 00	7 00
Brown, 8 to 10 lbs., 1 00	do 22x36, 6 00	6 00
Beet, do, 12 00	do 22x36, 5 00	5 00
Sugar, Map, lb., 30 00	do 22x36, 4 00	4 00
Plums, dried, lb., 15 00	do 22x36, 3 00	3 00
Peaches, dried, 12 00	do 22x36, 2 00	2 00
Wool Sacks, new, 70 00	do 22x36, 1 00	1 00
	do 22x36, 8 00	8 00

PRODUCE, ETC.

Flour, ex. per bbl., 5 25	Barley, cwt., 1 20	1 20
Superfine, do., 4 00	Beans, cwt., 1 40	1 40
Corn Meal, 100 lb., 2 50	do 100 lb., 2 50	2 50
Wheat, per 100 lbs., 1 60	do 100 lbs., 1 60	1 60
Oats, per 100 lbs., 1 50	do 100 lbs., 1 50	1 50

FRUITS, VEGETABLES, ETC.

Apples, each, 10 00	Cucumbers, 4 00	4 00
Bananas, doz., 75 00	Tomatoes, 4 00	4 00
Cantaloupes, 25 00	Dried Herbs, 25 00	25 00
Watermelons, 25 00	Garlics, 12 00	12 00
Cal. Walnuts, lb., 25 00	Green Peas, 6 00	6 00
Cranberries, lb., 75 00	Green Corn, doz., 37 00	37 00
Strawberries, lb., 25 00	Lettuce, per doz., 37 00	37 00
Raspberries, lb., 25 00	Horseradish, lb., 25 00	25 00
Gooseberries, lb., 25 00	Okra, dried, lb., 50 00	50 00
Cherries, lb., 25 00	do fresh, lb., 15 00	15 00
Oranges, per doz., 75 00	Pumpkins, lb., 3 00	3 00
Limes, per doz., 25 00	Parsnips, doz., 2 00	2 00
Figs, fresh, lb., 10 00	Spinage, doz., 25 00	25 00
Asparagus, wh., 50 00	Salsify, per bunch, 12 00	12 00
Artichokes, doz., 75 00	Turnips, per doz., 25 00	25 00
Brussels sprouts, 5 00		
Beets, per doz., 25 00		
Potatoes, New, lb., 2 00		
Potatoes, sweet, 4 00		
Broccoli, lb., 50 00		
Cauliflower, 1 00		
Cabbage, per doz., 1 00		
Carrots, per doz., 15 00		
Celery, per doz., 75 00		

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, apiece	75	00	Choice D'field	—	@	25
Turkeys, lb.	25	00	Whittaker's	—	@	25
Ducks, wild, p	50	00	Johnson's Or.	—	@	25
Figs, fresh, lb.	10	00	Salmon, #	—	@	30
Tame, do.....	1	00	Flounder, #	—	@	37
Teal, per doz.	2	50	—	—	@	30
Geese, wild, pair	10	00	Smoked, new,	12 1/2	@	50
Tame, pair	3	00	Pickled, lb.	6	@	30
Hens, each	75	00	Rock Cod, #	6	@	12 1/2
Snipe, per doz.	—	—	Perch, s water, lb	8	@	12
English, do....	—	—	Fresh water, lb	—	@	12 1/2
Quails, per doz	2	50	Lake Big, Trout*	37 1/2	@	50
Pigeons, com, doz	3	00	Smelts, large,	12 1/2	@	30
Wild, do.....	2	00	Small do.....	8	@	10
Hares, each	37 1/2	@	Silver Smelts...	15	@	10
Rabbits, tame,	25	@	Soles, #.....	37 1/2	@	—
Wild, do, dz.	17	@	Herring, fresh	6	@	7
Beef, lb.	8	@	Tomcod, #	25	@	—
Corned, #	8	@	Terrapin, #	40	@	10
Smoked, #	15	@	Mackerel, p k, e.	15	@	25
Pork, rib, etc.	10	@	Fresh, do.....	—	@	20
Chops, do, #	15	@	Smelts, #	12 1/2	@	—
Veal, #	15	@	Habit...	40	@	50
Cutlet, do....	—	—	Sturgeon, #	5	@	6
Mutton chops.*	12	@	Oysters, #100..	1	@	25
Leg, #	12 1/2	@	Chesp. # doz.	1	@	60
Lamb, #	12	@	Turkey, #	30	@	35
Ham, #	75	@	Crabs # doz.	1	@	00
Tongues, pig, e.	10	@	Soft Shell.....	—	@	30
Bacon, Cal, #	18	@	Shrimps.....	10	@	75
Oregon, do.	18	@	Sardines.....	8	@	—
Hams, Cal, #	16	@				
Hams, Cross*	16	@				

* Per lb. + Per Dozen. 1 Per gallon.

To Inventors in the Pacific States.

The best, speediest, and surest method for you to obtain patents, file caveats, or transact any other important business with the Patent Office at Washington, or with foreign countries, is through the agency of DEWEY & CO., PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS, SAN FRANCISCO, an able, responsible, and long-established firm, and the principal agents on this side of the continent. They refer to the thousands of inventors who have patronized them, and to all prominent business men of the Pacific Coast, who are more or less familiar with their reputation as straightforward journalists and patent solicitors and counsellors. We not only more readily apprehend the points and secure much more fully and quickly the patents for our home inventors, but with the influence of our carefully read and extensively circulated journals, we are enabled to illustrate the intrinsic merits of their patents, and secure a due reward to the inventor, besides serving the public who are more ready to give a fair trial, and adopt a good thing, upon the recommendation of honest and intelligent publishers.

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well-constructed model is generally first needed, if the invention can well be thus illustrated. It must not exceed 12 inches in length or height. When practicable, a smaller model is even more desirable. Paint or engrave the name of the article, and the name of the inventor, and his address upon it.

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Tanks of Any Description

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LOWEST REASONABLE RATES.

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1,000 to 2,000 gallons, bound with 5 hoops 1 1/2 x 1/2 and 1 hoop 1 3/4 x 3-16.

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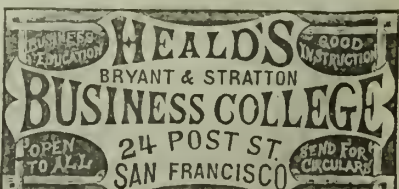
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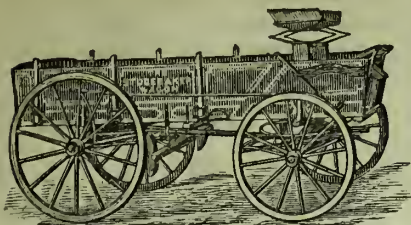
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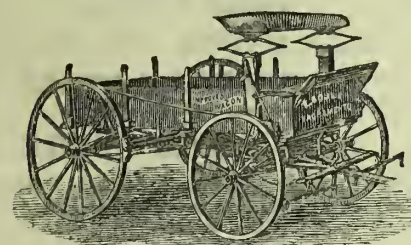
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ap22-3m

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The following are some of the reasons why these
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in use. They are made of the best material, and every
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They will plow any kind of soil, and leave the ground
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These Plows have taken First Premiums at the State
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Premium of \$40 for the best Gang Plow, after a fair test
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Took the First Premium over all competitors at the
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This Gang Plow combines durability with cheapness,
being made entirely of iron by experienced workmen, of
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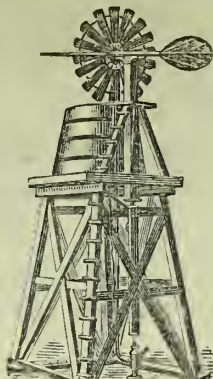
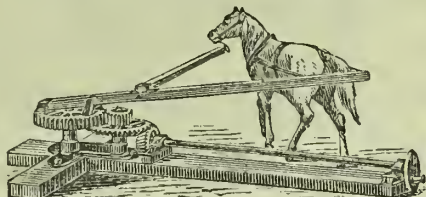


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Is now the favorite of this State, and sells three to one of any other make.

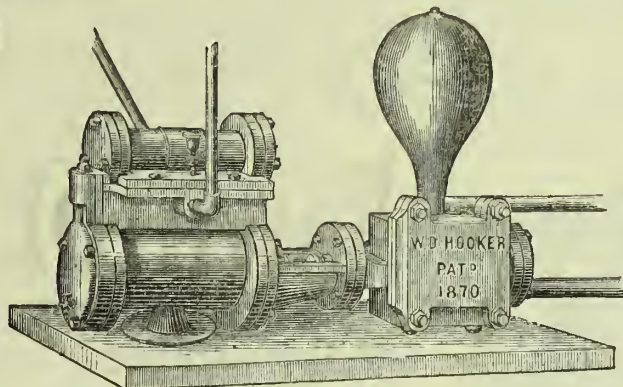
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sel6-1am3m

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Adapted for all pur-
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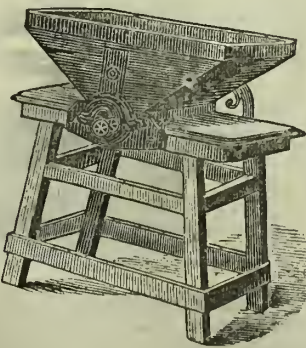
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As any of the inferior compounds now being forced
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Article, and which for Over 18 Years in this country has
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CHALLENGE FEED MILL

For Farm use and Custom work. The only Practical
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The grinding surface is adjustable, and can be replaced in
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Cannot be had anywhere else, as I am the Agent.
Also, fine English, German and American Sporting
Guns, all the latest patterns of RIFLES, and all kinds
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And Sporting Apparatus of every description.

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IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all
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Steam Pumps. Uses the same steam
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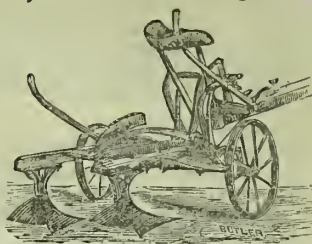
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This Plow was awarded the First Premium and Gold
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Fifteen Gangs entered, including the Eureka, American
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Wrought Iron Beams, Iron Wheels, Cast Steel Moulds
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Also COLLINS' PLOW (Smith's Patent).

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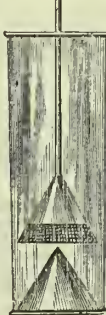
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THE
Aerating Egg Beater.

Various devices have been presented
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This Beater, as will be seen by refer-
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Which they offer to the trade at
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brated Obermann Self-
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A large assortment of FORCE and LIFT PUMPS;
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Celebrated Ranges—Union, Improved Richmond, and
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JEWELL & FLINT, General Commission
Merchants, and Sacramento Agents for Walter A.
Wood's Harvesting Machines, No. 39 Front street, be-
tween J and K, Sacramento. G. R. JEWELL,
15v3-3m T. B. FLINT.

"I Enjoy It Very Much."

VINELAND, N. J., Sept. 6, 1872.—Messrs. DEWEY & Co.: Please find inclosed one dollar and twenty-five cents; and as my subscription to the RURAL PRESS expires September 12th, send it for three months more from that date, as I enjoy it very much. Yours, respectfully, THOS. B. PERKINS.

"Full of Practical Information."

DEWEY & Co.:—Your paper (the RURAL) is all it claims to be—full of practical information and useful knowledge to every farmer. I remain, yours most respectfully, W. H. P.

LIGHT FROM THE WEST.—The spirit of progress has somewhat upset our old notions on the subject of light. We used to look to the East for knowledge in the arts, sciences, religion and everything else. We were accustomed to receive all good things from the Orient and all evil things as well. Plagues and contagious diseases, as well as literature and science, followed the course of the sun, and came to us from Europe and Asia. But lately we are reversing this order of things, for here comes to us from San Francisco the SCIENTIFIC PRESS, one of the very best papers of its kind in the world—fully up in the latest discoveries and inventions, and altogether a most valuable and ably conducted journal. —[Industrial Age, St. Louis.



The PACIFIC RURAL PRESS, as a first-class illustrated agricultural and home journal, has no rival on this side of the Continent; it contains sixteen pages, of the size of Harper's Weekly, and is the best printed and handsomest newspaper of the Pacific States. Only a few pages are devoted to advertising. No questionable notices are admitted. All advertisements are sure to be read. Being the only first-class representative of its specialties west of the great prairies, your advertisement in this one journal, will meet the eyes of the leading agriculturists, horticulturists, gardeners, and other culturists in COLORADO, UTAH, MONTANA, IDAHO, NEVADA, CALIFORNIA, OREGON, WASHINGTON, AND ARIZONA. The Press also circulates in Australia, New Zealand, China, Japan, Sandwich Islands, British Columbia, and the Western States of Mexico. It is exceedingly popular, and highly appreciated by its readers and all friends of agricultural industry. Its circulation is immense, and far exceeds that of any class of San Francisco weeklies. Our rates of advertising are very low for the character and circulation of the journal.

Subscription, in advance, \$4 a year. Single copies 10 cts. Four single copies, of late dates, sent postpaid for 25 cts.

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The CALIFORNIA LABOR AND EMPLOYMENT EXCHANGE, having ample opportunities to dispose of farms or business places to the many immigrants who daily arrive in California, and whose first steps are invariably directed toward this institution, has opened a Land Department in connection with its Labor and Employment office.

Parties having farms or business places for sale will do well to send the fullest particulars to California Labor & Employment Exchange, 637 CLAY STREET, San Francisco.

"Male and Female Labor sent to all parts of the country." 17v4-2am3m

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On Children's Shoes.

PURCHASERS please say advertised in Pacific Rural Press.

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Rope, Iron, Steel, Ammunition,

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Sole Agents for

THE IMPROVED "PACIFIC RAILROAD" and "MONITOR" GANG PLOWS.

These Plows are Deep Tillers, and are just what the farmers need. They can be run by a small boy, as the lifting out of the ground is done by horse instead of hand power. Farmers should examine these Plows before purchasing.

"WORLD" MOWERS AND REAPERS,

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HYDRAULIC RAMS, ETC.

Orders respectfully solicited. Catalogues and prices furnished on application.

18v4-6m

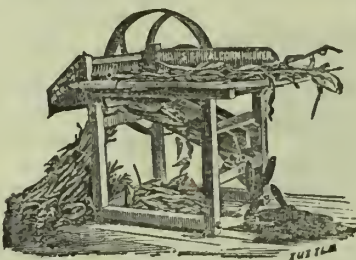
THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a First Premium and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

IMPROVED CORN HUSKER.



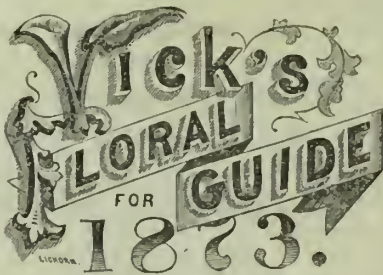
The great extent of the Indian corn crop throughout the United States, makes of the utmost importance any invention by which the labor incurred in its production may be lessened.

According to the census reports, the annual yield of Indian corn in California, several years since, was 1,000,000 bushels. It is probably twice that amount at the present time, and the introduction of corn huskers will be of great advantage to our farmers.

This machine has taken no less than eight first premiums this season, at fairs in the Eastern States. At the fair at Rochester, N. Y., it was awarded the first premium of \$10, besides a \$50 premium for the most useful invention, relating to agriculture, patented during the last three years.

The larger machines, for husking from the stalks, can be conveniently run by any of the ordinary horse-powers. The machine does its work thoroughly, stripping the husks and silk from every ear and nubbin, whether it be large or small, hard or soft. The stalks are delivered in a crushed state and in a much better condition for fodder than when left solid, and they also rot quicker in the manure heap. The husks are delivered in so good condition as to be worth from \$50 to \$70 per ton for industrial purposes in some Eastern places. An ordinary two-horse power used for thrashing will drive the machine, and with the hand machine two men can husk 40 bushels per day.

Address WIESTER & CO., 16v4-2m No. 17 New Montgomery street, S. F.



The GUIDE is now published QUARTERLY. 25 cents pays for the year, four numbers, which is not half the cost. Those who afterwards order seeds to the amount of One Dollar may deduct what they paid for the GUIDE, as I present it to customers. The January Number is Beautiful, giving plans for making Rural Homes, Designs for Dining Table Decorations, Window Gardeners, etc., and containing a mass of information invaluable to the lover of flowers. One Hundred and Fifty Pages, on fine tinted paper, some Five Hundred Engravings, and a superb Colored Plate and Chromo Cover. The First Edition of Two Hundred Thousand just printed in English and German, and ready to send out.

8v1-3m-1m JAMES VICK, Rochester, N. Y.

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With a large Orchard, all varieties of Fruit, large Dwelling House, Out Houses, Cistern and well Water in abundance. Possession given immediately. Apply on the premises to

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Examine our

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No complaints.

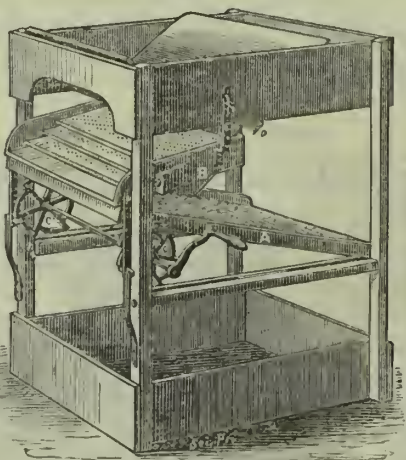
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Manufactured only by J. C. JOHNSON & CO., 104 FRONT STREET, SAN FRANCISCO. Dealers in Harness, SADDLERY, Leather, etc. Liberal discount to the Trade. 18v1-3m

HUNTER'S IMPROVED GRAIN SEPARATOR.



If you want clean grain, we invite you to call and examine HUNTER'S IMPROVED GRAIN SEPARATOR before buying any other machinery. This improved machine is the most compact, simple and perfect Grain Cleaner now in use. It separates the Chaff, Mustard, Barley, Oats, etc., from Wheat, and does its work rapidly. We keep constantly on hand the different sizes, and are prepared to show by actual test that it is the

Best Machine now before the Public.

It has never failed to take the First Premium at every State and County Fair where it has been exhibited at the East or on this Coast, for which we have the Diplomas and Medals to show.

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ALSO,

Grass and Clover Seeds.

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100 Barrels Guano for Sale, In quantities to suit purchasers.

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Stock of all kinds for sale at reasonable prices. Send for Catalogue giving full description. Address C. C. PARKS, Pres't., WAUKEGAN, ILL.

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ALL GRADES.

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THOS. BUTTERFIELD & SON,

Breeders and Importers of the

Cotswold, Lincoln, Leicester, Texel and South Down SHEEP.



—ALSO— THE ANGORA GOAT.

Now offer for sale the Pure Bred and High Grades. We have a good lot of Bucks of crosses between the Cotswold and South Down, between the Lincoln and Leicester, and the Lincoln and Merino.

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THE GREAT NEW CHURCH MUSIC BOOK,

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Still "waves," and is on the point of being introduced to a multitude of Singing Schools now to commence. The authors are L. O. EMERSON, of Boston, and H. R. PALMER, of Chicago, neither of whom will be satisfied with less than

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Of Church Music Books. Do not fail to send \$1.25, for which, for the present, Specimen copies will be sent.

PRICE, \$1.50.

OLIVER DITSON & CO., Boston.

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Volume IV.]

SAN FRANCISCO, SATURDAY, NOVEMBER 16, 1872.

[Number 20.]

Scoville's Improved Side-Hill Plow.

As the season for active plowing operations has now fully arrived, we present herewith an illustration of a very superior and convenient implement for side-hill plowing. A large portion of the State being of a hilly character, and covered with a productive soil, renders a plow especially adapted to the breaking up of such land a very desirable object. The one here shown is a California invention, by Messrs. Ives and Hiram Scoville, of Oakland, and has been in use some four years. So great has become the demand for it, of late, that Messrs. Treadwell & Co. have recently taken hold of it, and it is now being manufactured, improved in construction, and in such large numbers that the prices have been considerably reduced. It is made of steel, very strong and with special reference to being used in breaking up the more difficult and strong soils, which are generally met with on hill lands.

A reference to our illustration will be sufficient to understand its peculiarity of construction and use without our going into a detailed description. It is, of course, a double plow so that the furrow, both ways, may be thrown in the same direction. When it is not in use it is thrown up, evenly balanced, while its weight so rests upon the beam as to be made an aid in keeping the working plow in the ground.

The handles instead of reaching their ground support separately, are brought together and attached to the opposite of a metal bar, by which device the plowman has a much surer and easier control over the instrument.

It may be converted into a single plow, for use on level ground, by simply removing the rod E, which is held in place by a nut shown upon the end thereof, and taking off the moldboard A. Either moldboard may be removed. The weight of the plow does not exceed 100 pounds. Treadwell & Co. are now selling large numbers of these plows.

Wheat and Oats.

The New York Tribune gives the price of wheat in that market Oct. 30th, at \$2 for White Michigan and \$1.75 for choice amber Indiana; at the same date oats were held at 41 to 43 cents, or one-fourth the value of wheat, and yet are considered by many farmers a more profitable crop than wheat.

Here, oats are worth the same as wheat, more bushels can be grown to the acre and at less cost, at the same time less impoverishing to the soil and the straw a better feed for cattle than wheat straw. With us there is no other product so extensively cultivated as wheat, or that is nearly as exhaustive to the soil.

Vineyards may be cultivated for ages as they are in Europe, with a positive improvement in the condition of the soil, and yet who ever heard of a surplus of raisins from the vineyards? Farmers should raise more oats in proportion to the wheat grown, should give more attention to a diversity of products, lessening

the wheat crop and substituting others, that whilst they exhaust the soil less, are even more remunerative.

We have a market for oats at home; our wheat must go to foreign countries for it. Farmers are annoyed at the low price of wheat, but we hear no complaint in regard to oats. Who will grow oats enough next year to bring the price down to a dollar a bushel? and even then make money at it, if they can at the East at 43 cents a bushel. But "echo answers," wheat! and wheat it will doubtless be, not only a largely increased acreage over last year, but with prices as low or lower than now.

Shade for Animals.

That cattle and horses, indeed all domestic animals seek the shade of trees wherever available, through the greater part of the sunny days of summer, ought to be a sufficient proof

Life Insurance Forfeitures.

The Morning Call recently intimated that the life-insurance business was specially profitable on this Coast, owing to the unusually large number of forfeitures of policies here by those who, after insuring from one to several years, ceasing payment. Possibly the Call is correct in a measure. But it is the fault of the insured, through ignorance or negligence, if the companies are thus making large sums. The public should know that every first-class company represented in San Francisco provides for issuing a paid-up policy for any over-paid insurance. For instance, if a young man insures his life, he pays the same rates annually while young as when older. The risk, however, is not rated so high for the first years of his insurance as in his later years. Consequently, he pays more insurance during the first years than the risk demands. But whatever this

Selection of Seed.

In the two numbers next preceding this, we have spoken of the importance of obtaining the best varieties of seeds and those that have attained full development and maturity. It is equally important in the selection of seed, that it be perfectly preserved from the threshing and cleaning, to the time of its use for seeding; for many of the so-called failures of seed are solely attributable to neglect of this important matter.

Wheat and other grains are not unfrequently spoiled by heating in large piles, and particularly when any part of the grain is immature or wet from dews or fogs. The grain is sometimes attacked by weavel or other insects that prey upon the germ but scarcely doing any other appreciable injury.

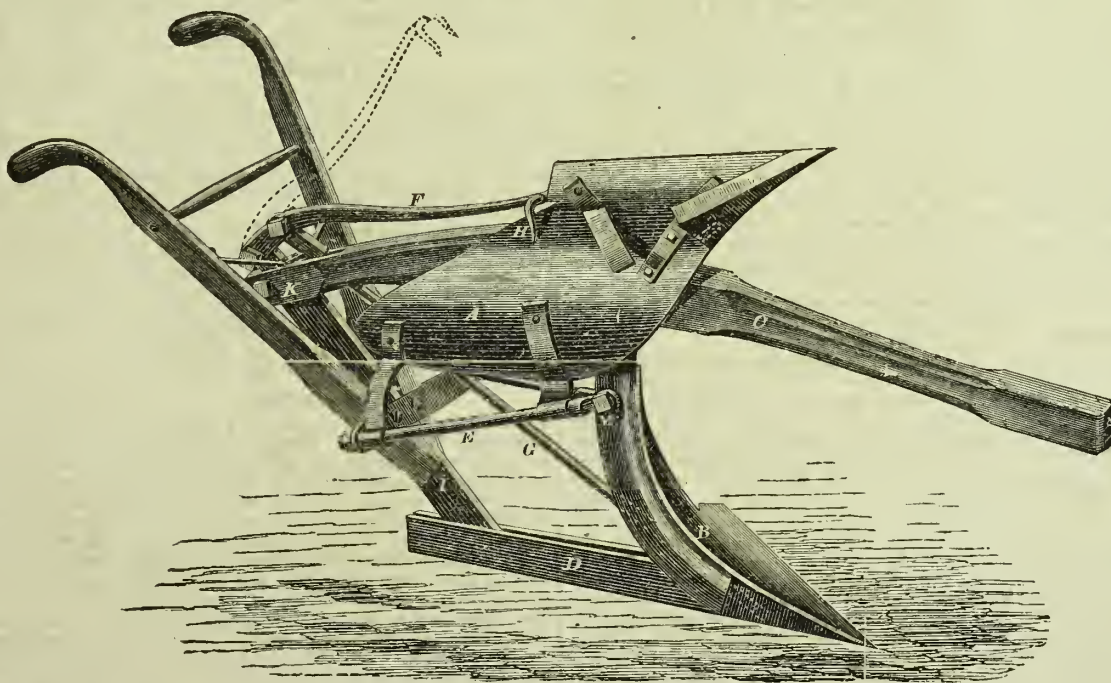
The machinery employed in threshing is not unfrequently the cause of the loss of much

seed; not so much from the loss by broken grain as from the facilities offered by these broken grains for disseminating destructive vegetable parasite and fungi as rust, smut, etc. All these seize with greater avidity upon the broken grains than the sound, and communicate infection to that which but for its presence would be uninfected.

Both rust and smut are transmitted from year to year in the seed sown, but some seasons being unfavorable to their development to any injurious extent, they are scarcely noticeable and then are supposed not to exist; but let the season prove favorable, with the recurrence of damp or foggy weather with great heat and the hitherto dormant seeds of the fungi are brought out into active life upon both straw and grain. We cannot be too careful in the procurement and keeping of all grains intended for seed. With good, well selected seed, other things being equal, a better yield may reasonably be expected than if poor, indifferent seeds are used.

VIENNA EXPOSITION.—The Kimball Manufacturing Company of this city have forwarded one of their Wood C spring buggies for exhibition at the Vienna Exposition. They are building other vehicles which they propose to forward as soon as completed. We are pleased to see one California firm, at least, alive to the benefits to be derived from this exposition, and hope that others will follow their example and have our State well represented. Our articles of manufacture, though limited in variety, as yet, are of superior quality and their excellence will no doubt surprise many who will visit the exposition who are not aware of the great progress the State has made in the limited time since its settlement. The inducements held out by those having charge of the exposition are very advantageous and the benefits to be derived from the exhibition of our manufactured articles are many.

GOVERNOR BOOTH has appointed Thursday, the 28th of November, as a day of Thanksgiving for California—the same day which had been previously fixed upon by President Grant as the day of National Thanksgiving.



SCOVILLE'S IMPROVED SIDE-HILL PLOW.

that such shade is agreeable to them. There is not a doubt but the perfect torrent of sunshine that pertains to our summers in all localities destitute of shade trees, is severe on stock beyond merely its effect upon the smooth and sleek condition of the hair and skin.

Light we admit is a powerful stimulant in promoting the healthy growth of both plants and animals; but it is not from the light that the animal endeavors to escape, but the intense heat of our vertical sun; to escape from which animals will seek shade in preference to food even, during the hottest part of the day. It seems then almost a species of cruelty to deprive them of it, keeping them day after day, in totally shadeless fields under an almost tropical sun.

We believe it would be a profitable investment for our farmers to set out trees by the roadside so near the fences or just within them that their animals may enjoy their cooling shade during a part at least of the great noon-tide heat. Plant out also groups of trees here and there in all the large fields, and let belts of shade and nut bearing trees span all the now shadeless plains of the State. It will pay as a direct investment, in shade, for wind breakers, leaves for the silk worm, fruits and nuts and finally timber and fuel.

difference may be during the years for which the pays insurance, if he fails to continue, the companies offer to give him a paid-up policy. If the insured applies for it, the company gains nothing extra by the discontinuance. If he fails to ask for it, it would seem to be his own fault. These facts, we believe, should be more generally understood, for the benefit of the insured and the popularity of the insurers.

WHALING AT MONTEREY.—The Portugues are capturing whales almost daily off the bay of Monterey, and the air is said to be redolent of scents, but quite unlike those of Arabia. The whales which are now on their way from Arctic waters to the bays and lagoons of Lower California where they go to breed, are very fat, lazy and easily taken.

SPEAK KINDLY.—Speak kindly in the morning, it lightens the cares of the day, and makes the household and all other affairs move along more smoothly.

Speak kindly at night, for it may be that before the dawn some loved one may finish his or her space of life for this world, and it will be too late to ask forgiveness.

Speak kindly at all times, it encourages the downcast, cheers the sorrowing, and very likely awakens the erring to earnest resolves to do better, with strength to keep them.

CORRESPONDENCE.

Oregon State Fair.

[Written for the Press.]

Some of the facts and lessons of this Fair may have some practical interest for your readers. Mr. C. P. Buckhart, three miles from Albany, has given special attention to the raising of wheat and oats for some years. His land is not naturally richer than the average soil of the Willamette Valley, but he excels in cultivating the ground and in selecting seed. These are the essential qualifications for a successful farmer, and constitute the difference between raising twenty, the minimum, and sixty the maximum bushels of wheat to the acre in Oregon. Any person familiar with the fine climate, rich soil and regular seasons of this State, would naturally expect as large an average quantity of wheat to the acre, and equal in quantity to any State in the Union. And this Mr. Buckhart, as well as many other farmers have succeeded in accomplishing. At the State Fair he was the largest and most successful exhibitor of wheat. I send you by this mail three samples of his fall wheat for which he got prizes at the State Fair, that you can show to your agricultural friends as they call at your office, and thereby see what the good farmers of Oregon can do in wheat.

The sample marked No. 1, contains "Mammoth" or "Buckhart" white wheat, that yielded an average of 44 bushels to the acre this harvest. No. 2 contains a sample of his "Tonzella" wheat, a French variety, that yielded 56 bushels to the acre. No. 3 is a sample of his "Golden Amber" that produced 43 bushels to the acre. In 1871 the Buckhart wheat produced an average of 61 bushels to the acre, so that the yield of 1872 is 17 bushels below what it was the previous year. Mr. Buckhart is satisfied from his own experience and from the testimony of experienced farmers, that an average of 60 bushels of wheat to the acre can be raised in Oregon by competent farmers who thoroughly cultivate the land, and giving proper attention to the seed. From what we know of Mr. Buckhart, he will give reliable information to any enterprising farmer that may write to him, or call on him at his residence near Albany. The farmers of Oregon are a good deal depressed at the low price of wheat this season, owing to the want of facilities for direct shipment, and the absence of the usual competition from San Francisco in consequence of the immense crop of wheat in your own State this year. Notwithstanding, the quantity sown this fall will exceed any former season in this State.

As agriculture and manufactures should go hand in hand, I saw exhibited at the State Fair a sample of woolen sacks, hose and yarn from the

Beaver Hose Manufacturing Company,

At the town of Jefferson, on the Santiam river, 65 miles from Portland. This is the pioneer mill of the State in this line of business, and is an indication of what will be accomplished before long in manufactures by the vast water power that is so available for such purposes. Although the mill is only eighteen months in operation and had to contend with many difficulties at the start, it has attained a high reputation for the excellency of its goods. The demand from Portland, San Francisco and Victoria is such that more machinery has been ordered so as to be able to fill the orders from those places. About 50,000 pounds of wool is consumed annually at present, but the company is determined to extend the business so as to embrace all kinds of underclothing and woolen goods generally. With unlimited water power at their command, the best wool brought to the mills by the neighboring farmers, railroad facilities at their door for transportation, intelligent workmen in the different departments, an experienced and competent manager (Mr. M. L. Culvert) and a reliable and able financier for President and agent (Mr. A. L. Stinson), the success of this company is guaranteed. The Directors of the State Fair, after examining the samples that this company had on exhibition, called a special meeting, passed a very complimentary resolution and awarded them a gold medal, the second ever given by the Directors of the State Fair.

I send you by this mail two samples of their goods. No. 1 is from their stock of "White all wool Shaker sacks," No. 2 is from their "Blue mixed Shaker sacks," all wool also. These will give you and your friends a specimen of what Oregon is doing in this line of goods, and a pledge of the great things she will yet accomplish in manufactures by reason of the abundance of her raw material and unlimited water power.

The Willamette Woolen Manufacturing Company, at Salem, and the Woolen Manufacturing Company at Oregon City did not exhibit any of their goods at this Fair, on the ground that California and the East are their principal markets. Both these mills are very successful and their manufactures have appeared to great advantage wherever exhibited for previous years.

Agricultural development and progress to the highest degree and the encouragement of home manufactures should be the aim and ambition of every one who loves his State and country.

PACIFIC.

Will Fruit-Drying Pay?

EDITORS PRESS:—In reading the Secretary's report of the Sacramento Farmers' Club, in your excellent paper of last Saturday, 19th inst., I noticed the subject of drying fruit was being talked of considerably. Mr. Greenlaw made the statement that he had had considerable experience in fruit-drying in this country by hand and in the sun, but had not been able to make it pay; Mr. Aikens about the same as Mr. Greenlaw, and Mr. Rutter, also, from his experience corroborates what others have said, that it did not pay.

It seems to me that it would depend very much upon what the gentleman would call pay. If they had said it don't pay big, or it don't pay much, we could let it go at that, because we do certainly think fruit-drying in the San Buenaventura pays but little. I have been doing something in that line for a number of years, and have found that my dried fruit was quite a help to bring up with at the end of the season. I will just note a few days' operations this season in my orchard for the reader's benefit. Little Charley, a widow's son, a boy of 14 years, was visiting one of my neighbor's boys, and being of an industrious turn, wanted me to give him a job.

I told him he could go into the orchard with some others who were working there, if he so desired, and dry some peaches on shares, and I would give him one-half he would dry. Now, the little boy was green about an orchard; did not know how to go to work or what to do first, but, taking notice of the others, he soon got to work and stuck to it for four days; picked up his peaches and brought them to the scaffold cut, and put them out, and when dried and sacked they weighed 108 lbs., which gives him 54 lbs. Counting 9c. per lb., present price, it would give Charley \$4.86. Pretty good for a little boy who had never done anything at it before and just taking his own time for it. Willie, a boy of some experience, who worked the same time, put out his 400 lbs.; he also having half, gives him 200 lbs. Other hands still more experienced, can do even better than the two mentioned.

Now, what could the boys work at that would pay them better than drying fruit? I was willing to give one-half to have it all dried, i. e., the smaller sized that I could not sell in the fresh state. It seems to me the Societies and orders of various kinds ought to be a little cautious how they make things appear in their deliberations. At one meeting they advocate, encourage, and insist on raising nurseries and setting out orchards, and cultivating and pruning well in order to make the most and best fruit, and, perhaps, at the very next meeting the talk is—the fruit business don't pay.

What will the boys think of such work? They will naturally be looking round for some life pursuit; but father says orcharding don't pay, and I want, when I go into business for myself, something that will remunerate me, so I must go at something besides orcharding. Thus, you see, Mr. Editor, our boys will be likely to neglect the orchard.

I see, also, in the deliberations of the Napa County Farmers' Club, that the question of Chinese labor came up; that they, the Chinese, were on a strike. I would say, if it were my time to speak: Let them strike, and strike themselves out of the country, if they are not willing to labor for what the farmers as a body are willing to pay for the kind and amount that they will do. I do not consider them of much account on a farm, any way; they may be, and I suppose they are, good in a vegetable garden.

I went in town at the commencement of fruit-drying this season to get some Chinamen to help me. I went to the boss and made the inquiry if he had any men I could get. "Yes," he said, "how much you pay?" "One dollar per day." The boss said: "Oh, no, me men no go for one dollar; me want \$2." I gave him to understand I didn't want his men. No, sir, we can do without the Chinaman on our farms and in our orchards. There are plenty of white people, and whole families of them that would be glad to dry our fruit on shares, and there are our own boys and girls, too, that it would not hurt a bit. No, it would do them good to keep them out from school for a couple of months in the harvest season, and let them have a good healthy rest, and while they are resting help take care of the crops.

I know a mother who thinks it don't hurt her or her girls a bit to go in the orchard and play dry fruit for a number of days at a time; so I think that if all take hold of the question in the right way, we can get along without Mr. Chinaman.

Healdsburg.

C. A.

Value of Mohair in London.

We are permitted to publish the following letter just received by a gentleman in this city, from a London firm in reference to the market for and value of Mohair in London:

74 COLEMAN ST., LONDON, E. C. Oct. 17, 1872. Sir:—Our Liverpool house have forwarded us your letter of Sept. 27th, and in reply we beg to say that we are at all times buyers of mohair, or goats' wool, but without samples it would be impossible to give you an exact value of your produce. Still we can give you quotations of which we are at present buyers, viz: for the best Angora mohair grown in Turkey, 3s. 2d. @ 3s. 5d. per lb.; that is 38 pence (76

cts.) to 41 pence (82 cts.) per lb. For inferior, from 12d. (24 cts.) to 24d. (48 cts.) according to the length of the staple and fineness and freedom from kemp or coarse hairs. The mixed parcels which we received from the Cape and which we presume yours may somewhat resemble, we are paying for the best assorted, 24d. @ 30d. per lb.; mixed unassorted, 12d. @ 18d. per lb.; coarse and kempy, 8d. @ 12d. per lb. For the consumption of the same we may say that England is the only market we know of for all the different grades of goats' wool or hair. If therefore you would send us some samples of your different produce, we could give you their latest quotations as to their value.

For packing it is immaterial what packages they are put in, provided the fleeces are in good condition, that is dry, and the different grades kept separate, viz.: the pure blood by themselves, the half bred another lot and the common and kempy by themselves. As to advice with respect to crossing, etc., we can only give you it after we have seen what you produce. If you ship any as a trial we shall be glad to take charge of them either here or in Liverpool. The terms for goats' wool are cash in one month less five per cent. discount. Our terms are, for sale, one per cent. brokerage, and if under advances, two per cent.

Any further information we shall be glad to give you as you may require it. Yours respectfully, G. H. COSENS.

Grape Gathering and Wine-Making.

EDITORS PRESS:—Most of the farmers have finished gathering their grapes for wine. The yield does not come up to the average of former years, on red land not irrigated; those who have irrigated have made full crops, showing the advantage of watering. It is generally computed that one acre well watered equals three not watered. The former is not considered by wine makers the best for good wine, not having so much saccharine matter as the latter, still they do not make any objection to receiving the grapes. By taking off the water, one month before picking, they make far better wine, than those that keep the water on until picked, thereby gaining more grapes, and the quality the same as those not watered. Most of the irrigation is on the foreign table grapes, of which large quantities are sent throughout the State and East, commanding good prices.

The Locality

Makes a great difference in the quality of wine thus manufactured. Grapes raised on the lowland and adobe mixture yield heavier than on the red land, but the grapes are not so sweet, and are likely to mildew, also retaining more acid. The wineries prefer not to receive them if others can be had.

Most of the fruit that is raised for market is located within ten miles of the City, along the Sacramento and American rivers, and the Red land between. The locality is considered the best in the State, in connection with its railroad facilities. In one hour and a half you can deposit your load at the depot in Sacramento, ready for any destination you may wish.

The Common Price

For wine grapes is \$20 per ton for Foreign, and \$15 to \$16 for Native. Foreign table grapes from four to five cents per pound. There is a good deal of dissatisfaction at the low prices paid for wine grapes. And an effort is being made by the principal growers to get up a Co-operative Winery among themselves, and be ready to start in next year so that their grapes will net them from \$30 to \$40 per ton. Wine is becoming a staple article of our country. The grapes are so easily cultivated that any tiller of the soil can raise them.

The question can here be asked is it a real benefit, or a curse to the country? Some reason this way. There are classes of men who must drink something, and if wine can be manufactured sufficient to take the place of strong liquors, there the benefit is derived, and less drunkenness is found in society. Admit the fact—do not temptations stare one in the face? It is a serious question and should be well considered. Is it not best to turn the attention to

Table Grapes

Embracing from three to four varieties. It is a mistaken idea for one to attempt to raise too many. Great many have found it to be a detriment, and have grafted the best.

The White Muscat Alexander stands at the head. The Black Hamburg, Blue Malvasia and Reine De Nice are the four best for market use, and do well on the red land with irrigation. Some of the growers intend to enlarge from six to ten acres of Muscats for market use, they have done so well this year, will prepare to furnish more for the Eastern market, and other intervening points. The Muscat also is the real raisin grape, which comes from Malaga, in one-quarter, one-half and whole boxes; we have yet to learn the mode of curing them. Most have dried them by the sun. Some find (by experiment) the heating process, others by cutting them, and laying them under the vine on the ground, or twisting them on the vines. I think the cheapest way is to half-cut them, and let them hang on the vine, till mostly cured, then take them and pack in a large box, and let them go through a sweating process that will leave them in a moist condition ready for packing in boxes, then laid away ready for market or use.

O. R.

Sacramento county, Nov., 1872.

The Borer at the Orange.

EDITORS RURAL PRESS:—About a month ago on examining my orange trees, I found quite a number of them bleeding some four or five inches from the surface of the soil, which has been kept thoroughly cultivated. My first course was to scrub the base of the tree with strong soap suds, and pour a quantity of the same about the roots. Then with budding cloth wrap the stem for some distance above the places from which the gum was exuding.

Being a novice in the culture of such trees, I do not know if my course was correct or not, of late on examination of other trees I find that the bark just below the surface is soft or in a semi-rotten state—some of the trees are bleeding and others not.

To most have applied wood ashes, but the time has been so short, cannot report the effect. At the base of some trees find a black bug some one-half inch long with a very pointed head, and its caudal extremity armed with two sharp thorns. Is this the borer, and if so what is the remedy? Yours truly, E. H. W.

Los Angeles, Nov. 1st, 1872.

From indications we should judge the offender to be the genuine peach borer, if the same ever attacks the orange. The peach borer so destructive to trees on the Atlantic border always makes his attacks, or the eggs are laid by the miller or wasp at or just under the surface of the soil where the bark is softer than above it; and it would seem to be in this instance very near the surface.

The best remedy, is to thrust a small wire into the openings by which the worm can generally be destroyed, then the application as made by our correspondent is probably the best that can be made. As a preventive—if the trees are to be subject to such attacks—inclose the body of the tree with coarse cloth loosely bound around it from two to three inches under the surface of the soil, to four or five inches above it; through this the moth cannot deposit its eggs.

The preventive, is upon the supposition that the depredator is the peach and not the apple-tree borer, the latter making its attacks more generally upon the limbs and bodies of young trees. Will some practical orange grower give us his opinion of the character of the intruder, recommending treatment and a preventive?

Which is the Best Feed.

A correspondent, A. W., of San Felipe, writes as follows: Can any of your numerous readers that are acquainted with Dairying, tell me which is the cheapest and best, to feed milch cows with squashes at two dollars and fifty cents per ton, or bran at eighteen dollars per ton. I can get either at the above prices, and would like to know which to purchase. I find 100 lbs of squashes a strong feed per day, I have never tried bran.

And we doubt whether any one will be able to give their relative value without careful experiment, and though we would be glad to hear from any one who has fed the two, with the result obtained, we would suggest to our dairy friend, that he make the experiment—having the opportunity—and report the result for the benefit not only of the dairymen of California, of whom he is one, but of the whole world, where bran can be procured and squashes grown.

THE FLUME.—California may not claim the honor of inventing the flume, but there is no other country where it has been more extensively adopted or utilized. In mining sections it is traced for miles, bearing an aqueous tribute to the diggings—often elevated on stanchions to a height of forty or fifty feet. As an adjunctive link to the irrigating ditch, it also serves a useful purpose—spanning deep cañons, crossing creeks, thus avoiding the necessity for tunnels, and carrying a volume of water which can be drawn off at intervals to drench arid wastes, and give propulsion to all kinds of machinery. But there is another and equally important end that the flume can be made to subserve. When built of ample dimensions, with an abundant source of supply, its water can be made to bear hewn and sawed lumber, wood for fuel, and other floating substances, from forest regions for many miles to a market. In this respect it has advantages over teams and railroads, on account of the cheapness with which its freight can be delivered, and promises to increase in popularity where the conditions are favorable to its adoption.

GAIN IN CATTLE.—It takes eleven pounds of milk to add one pound of live weight to a calf; and an ox that weighs one thousand three hundred pounds will consume twenty-two pounds of hay in twenty-four hours to keep from losing weight. If he is to fatten, he must have just twice that amount, when he will gain two pounds a day. This is one pound live weight to eleven pounds of good hay. To obtain fifty cents a hundred for his hay a farmer must sell fat steers at five dollars and fifty cents per hundred pounds.

MAJORITIES, especially respectable ones, are nine times out of ten in the wrong.

FLORICULTURE.

What Flowers to Raise.

Those who have never been in the habit of growing flowers should set about it this year, and help to make the world more beautiful. There are many who take to annuals, and yearly buying a large quantity of seed which they sow, and often with unsatisfactory results. It is true that it costs less to start in this way than with bedding plants, but we prefer the latter to a considerable extent, though we would not wholly ignore the former.

We will give a list of bedding plants, and follow with the annuals, taking it for granted that almost every one of our readers who raise flowers at all, have some herbaceous plants, perennials and biennials already in the ground. We would recommend them to plant the canna in variety, for the sake of the large and ornamental leaves. Those should be planted in masses, and surrounded by other plants, as the taste of the owner may suggest. Feverfew is a good thing to use for bedding, both the golden-leaved and the double white variety; the pansy is a beautiful little plant, and one admired by all. They can be obtained in a variety of colors, or can be raised from seed planted this spring, and will give fine flowers next fall and the succeeding spring. The verbenas are a fine bedder, and should always be planted; the cuphea, though not showy, is yet pretty enough to receive a place; launfanas in variety; geraniums should be planted in variety and great quantity; dahlias, especially the dwarf varieties; coleus in variety; iris in variety; tender roses; heliotrope of different colors; golden-leaf arbuton; fuchias, and such other plants as may be had of the dealers.

Of annuals, we suggest the petunia, mignonette, sweet alyssum, amaranthus, asters in variety, balsams in every variety of color and very double, candytuft, summer chrysanthemum, dianthus, chinensis, larkspur, phlox drummondii in variety, portulaca, single and double, in variety; zinnia. In addition to the above, we should advise the planting of the gladiolus in variety, a bulb that gives great satisfaction; the setting out of pinks, picotees and carnations. Tuberoses, when started in a greenhouse, do well in the bed; all these and others that may be found worthy of a place, added to the hyacinths, tulips, lilies in variety, peonies, dellytra, etc., will make quite a respectable flower garden. The more we cultivate flowers, the more will we come to love them. Let all try the experiment.—*Ex.*

Propagating and Culture of Verbenas.

Verbenas may be propagated by cuttings or layers or raised from seed. When grown from seed, it should be sown in the open air during the latter part of April or first part of May, in a well prepared bed and transplanted to the flower border as soon as large enough. Or it may be sown thickly in shallow boxes of light soil, kept warm and moist near the light until large enough to transplant to the open ground. The plants will continue in bloom in this state nearly the entire year. They give the best satisfaction when grown from cuttings of the young shoots. They should be set in light sandy soil and kept moist; they will also root readily in sand placed in shallow pans or saucers with just sufficient sand to keep the cuttings erect. When rooted by the latter method, they should be flooded with water to the depth of one half inch above the sand and kept in sixty to seventy degrees of heat, when they will be rooted sufficient to put off in a few days. They require a rich, moist soil. When matured, it should be with well rotted compost. If properly treated they will soon occupy the ground and afford a fine show of bloom.

FORCING LILIES OF THE VALLEY.—In autumn take up the desired number of good, strong roots, such as have plump buds or crowns. Pack them close together, either in pots or broad, shallow boxes, covering the crown about an inch deep with fine rich soil. Give sufficient water to settle the earth firmly about the roots, then place them in a position to grow and bloom. If wanted for the holidays, they should be placed in a warm situation about the first of November. If it is desired to have them all bloom at one time, a portion can be kept in a cellar, and brought out as required. If one has no conservatory in which to force them, they can be placed near a stove; or in any warm position until the leaves appear; then set in a window where they will receive the light. It is not necessary, however, that they should receive the direct rays of the sun the entire day, as a partial shade seems to suit them best.—*Rural New Yorker.*

MISCELLANEOUS.

Carriage Wheels—Where is the Weak Point?

It would seem that after many experiments made and the long controversy that has been going on for years in regard to wheels, there would be no necessity for asking the above question, but having never yet heard what we deemed a satisfactory answer, we have taken extra pains to ascertain, if possible, whether the theories upon which the trade is constructing wheels at the present time are right or not. Just one year ago we chanced to see a wheel break down, and we noticed that the spokes broke off near the hub, but not a single tenon was drawn out; we accordingly made a note of this, and for one year have been on the lookout for broken wheels. In our pursuit of information we have not always found ourselves in pleasant company, but see the wheels we did, and our diary shows a record of forty broken wheels and their appearance. Among them we find almost every class, from the light wheel with its three-fourths inch spoke to the heavy truck wheel with its two and three-fourths inch spokes; wheels high and low, new and old, broken by collision, turning out of railroad tracks and other causes, in three instances the wheels breaking down on smooth roads without any perceptible cause other than the weight of the vehicle.

On the whole number broken we find that twelve broke in the same manner as the first one we noticed—the spokes breaking off near the hub, but without drawing a tenon; in six cases these spokes were drawn out of the hub and all the rest broken not short off in all cases, but twisted and split so as to retain no supporting power. In three more cases four spokes were drawn from the hubs and the others broken; in two cases every spoke was drawn from the hub; in five cases the spoke broke at the felloe, and those on the under side were crushed down; in six cases the spokes on the underside of the hub were broken off near the hub, and a portion of those above the hub were broken at the felloe, but none were drawn from the hub; in four cases the wheel dished back and broke nearly all the spokes, but starting only two or three in each case from the mortise; in the remaining two cases the wheel dished back and drew all the spokes, breaking a majority of them also.

But our examination did not stop here. We found that of the twelve wheels that had all of the spokes broken, in but one instance were the spokes over one inch or the hub over four inches in diameter, and, with the exception of three hubs, they were under three and one-half inches in diameter; in the six cases where these spokes were drawn out of each wheel, in all but one the spokes were over one inch, and the hubs not less than four inches in diameter; in one instance the spokes were three-fourths inch, and the hub three inches in diameter; in the case where four spokes were drawn they were one inch spokes and four inch hubs; in the two cases where every spoke was drawn or so started as to be easily taken out, the spokes were two and one-half inches and the hub eight inches in diameter; in the five cases where the spokes broke at the felloe, the spokes were over two inches, and the felloes were sawed; in the six cases where the spokes on the under side were broken off at the hub and those on the upper side at the felloe, the spokes were one inch and under; in the four cases where the wheels dished back and broke the majority of the spokes, the spokes were under one and one-fourth inches; in the last case where the wheels dished back and drew as well as broke the spokes, the wheels were of the heaviest kind, such as are used on the four horse express.

As a result of these observations, we find that the spokes that were drawn were drawn from large hubs, the spokes being of the heavier kinds, and in every instance they were of white oak; and that those spokes that were broken were of the lighter sizes and in small hubs; so uniformly was this case that in every small hub the spokes were broken without even starting the tenon, except where the spoke split lengthwise, and in that case a portion of the spoke was drawn out. Another point noticed was that every wheel that broke at the rim was made with sawed felloes.

Our wheel manufacturers have for years been aiming to obtain greater holding power at the hub without increasing its weight or size; this has brought out the iron and iron and wood hub combined. Now, they have been working in the right direction. If the three inch hub will hold the three-fourth spoke, notwithstanding the spoke may be split in slivers from one end to the other, as we often noticed it to be, what need is there of enlarging the size of the hub or increasing its power to hold the spoke, and this, too, in face of the fact that the only wheels from which the spokes were all drawn or started so as to permit their being taken out easily, were large spokes in larger hubs. We are unable to reconcile the theory that there must be greater strength at the hub in order to secure a perfect wheel with the results of our

investigations, and are more than ever ready to believe that time spent in working to increase the size, or, rather the holding power of the hub is in a great measure wasted.—*Carriage Journal.*

An Important Nautical Invention.

The attention of the British Association was recently called to a very important and beautiful nautical invention by Mr. W. Froude.

The object of the inventor was to produce an automatic apparatus which would record the rolling of a ship in a seaway, and also register the slopes of waves and the general undulations of the ocean. The apparatus depends for its precision upon the simple principle that a plumb line, if its point of suspension be near the ship's center of gravity, will be for the moment in equilibrium if it occupy the position the vessel would give it in still water, while its oscillations will conform to the changes of the wave slope.

It consists of a revolving cylinder covered with paper and turned by clock work, which causes it to receive the tracings of several pens. One of these pens marks the time at equal successive intervals by an exact clock, while the instrument being placed at the center of gravity of the ship, records by a second pen the angles made at each moment by the ship—that is to say, her relative inclination, as imparted by the billows of the sea. Another pen, actuated by a rocking arm kept level and pointing to the horizon, simultaneously records the angles which the vessel makes with the horizon or her absolute inclinations.

The invention has been fully tested and its fundamental principles thoroughly verified by protracted nautical experiments. This simple contrivance, while apparently useful only for developing the mechanical theory of a ship's rolling at sea, will doubtless subserve some of the most practical purposes and vital necessities of the navigator. It is well known that the compass deviations on shipboard are materially affected by the various motions of the ship, as she heels to the port or starboard side. Late experiments as to the amount of compass deviation show conclusively that no good seaman can fail to keep the rolling of his vessel perpetually in his mind, and will find such an invention as Mr. Froude's of incalculable value.

The observations on board the City of Baltimore by the Committee of the English Admiralty proved that when the steamer was swung 10° to starboard the magnetic needle wandered from its true point 25° and 30° to the westward, and when she was heeled 10° to the port side, the needle erred 15° and 3° to the east, making a total variation of 41° of longitude due to heeling alone, without in any way changing the direction of the ship's head.

The invention will also serve the additional and still more important end of premonishing vessels of the approach of typhoons and cyclones in the more stormy regions of the ocean. The approach of heavy gales is usually announced by a swell and confusion of the sea—the storm waves advancing more rapidly than the storm itself.

Colonel Reid stated that when the celebrated hurricane of 1839 occurred he was in Bermuda, and distinctly heard the sea breaking loudly against the south shores of the island fully three days before the tempest broke upon it. At that time the hurricane was still within the tropic, and distant 10° of latitude, and as the gale neared Bermuda the surge increased. The increase or entire change of tides and currents or tides earlier or later, the long and true swells, confused and cross seas, raised in a pyramidal and other distinctive forms, are among the premonitions of a cyclone at sea; and these premonitions, by the automatic or self-registering apparatus of the English invention, are not left to the zeal and sagacity of a worn-down or unskillful master, but force themselves upon the eye as they graphically display themselves on the paper prepared for recording them.

The valuable contribution to nautical instruments will be greatly valued at a time when navigation is so rapidly increasing, and careless or ignorant seamen so often imperil the lives and property entrusted to them.

FUTURE ECLIPSES OF THE SUN.—Mr. Robert T. Paine communicates to *Silliman's Journal* a list of eclipses visible in the United States during the remainder of this century. The first central eclipse will be that of September 29, 1875, which will be annular in part of the State of New York and in four of the New England States. The duration of the ring on the central line will be three minutes, thirty-nine seconds. At Boston it will be only two minutes, twenty-nine seconds. The belt of country over which the annular eclipse will extend will be 110 miles wide. Within it are situated the observatories of Hamilton College, Albany, Harvard University, Amherst College, and Dartmouth College. The first total eclipse will be that of July 29, 1878, when the shadow of the moon will pass over British Columbia, Montana, Colorado, Texas, and Cuba. At Denver, Colorado, the eclipse will be total nearly three minutes.

STAINING VENEERS.—Difficulty is often experienced in getting the coloring matter to penetrate the wood sufficiently. This may be obviated by soaking the wood for twenty-four hours in a solution of caustic potash, and finally boiling them for half an hour.

Ethnology in Hair.

The form and substance of human hair is different in different races, and may be described, in its structure, as cylindrical, oval and eccentrically elliptical. The hair of the North American Indian is cylindrical; that of the white race is oval, and that of the negro (which is really not hair but wool), is eccentrically elliptical. When the hair is cylindrical, the stretching and shrinking powers are equal on all sides of the filament, and this condition gives it the lank, straight appearance of that of the pure blood Indian. The oval hair displays a greater number of fibres upon the flattened side than elsewhere,—and this condition gives the hair a tendency to curl or curve in that direction. When eccentrically elliptical, it not only always curls but often assumes a spiral shape, as on the head of the negro. The hair of the Chinese is nearly cylindrical, and hence it is that curled hair is almost unknown among that people. I have passed the hair of the North American Indian, and also that of a Chinese, between rollers, so as to flatten the pile, and each instantly curled. We may, therefore, easily determine the shape of the filaments of hair from its appearance. The cylindrical hair (and consequently lank) of the North American Indian is a type of all natives of the continent of America; that is to say, purely aboriginal. Some hair taken from the Temple of the Sun, near Lima, in Peru, in South America, belonged to one of the ancient inhabitants of that country, who were possibly, and probably, I think, of the same race as the mound-builders of North America, was cylindrical, and consequently straight. When the mound-builders flourished as the possessors of our land west of the Alleghany Mountains, we know not. The ancient Peruvians, their brethren, had cylindrical hair, and thereby is proven their affinity to the North American Indians.—*Historical Record.*

Monster Beehives.

A correspondent of the *Commercial Herald* gives the following description of a monster beehive on the eastern slope of the San Fernando range, Los Angeles county, Cal.:

The hive is located in a rift, which penetrates the rock to the depth of, probably, one hundred and sixty feet. The orifice is thirty feet long and seventeen feet wide; four passages. This rift was discovered to be the abiding place of a swarm of bees, that is represented as coming out in a nearly solid column, one foot in diameter. Certain parties have endeavored to descend to the store of honey collected by these bees, but were invariably driven back, and one man lost his life in the effort. Others have, at the expense of much labor and money, built a scaffold one hundred and twenty-five feet high, in the hope of reaching a place whence they could run a drift into the rock, and extract its well hoarded sweets, but finally ceased their work. Within four years the bees have added not less than fifteen feet to their treasure, as ascertained by actual measurement, and it is thought that at the present time there can be no less than eight or ten tons of honey in the rock. A man named B. Brophy, who lives in a cabin not far from the spot, obtains from the melting of the honey by the sun's heat, more than enough for his family requirements.

THE THEORY is now advocated by some very eminent astronomers that the peculiarities of configuration observed on the surface of the moon are due to the sole action of volcanic forces, whereas those which the earth presents results from a combination of volcanic and atmospheric agencies. Thus, the most characteristic feature of all lunar volcanos is the ring or hoop-shaped crater, surrounded by circular or nearly concentric ridges. On the earth's surface, volcanos deviate more or less from this type, and, if these deviations be owing to the differences between terrestrial and lunar superficial forces, it is argued that such differences will be most distinctly manifested in those cases where such terrestrial forces possess the highest degree of energy. A notable illustration adduced in support of this point is the peculiar structure of the volcanos in the island of Java, where the action of tropical rains and hurricanes has been effective in producing the very widest differences between the terrestrial volcanic summits and those observed on the moon's surface. Instead of any hooped structure, the former present specimens of radiating ribs, like those of a folded lamp shade, or an umbrella half closed—an appearance due to the very regular manner in which tropical currents scope out the friable summits of craters.

THE COMMERCE OF THE WORLD.—The aggregate international commerce of the world at the present time, is estimated at \$9,237,000,000 in value. Of this large amount Great Britain, mainly through her subsidized steamship lines, is able to control within a fraction of \$3,000,000,000—or nearly one-third of the entire world's commerce. It behooves the United States to be actively in earnest, in reconstructing her commercial marine.

EAR TRUMPETS of a wonderful construction by which sounds can be heard at a distance of a mile, are to be on exhibition at the Vienna Exposition.

FARMERS IN COUNCIL.

Farmers' Club of Sacramento.

The following is the discussion had before the Club at the meeting of November 2d, relative to a cooperative winery. Mr. Greenlaw said:

Suppose thirty farmers who are raising grapes, form an association and incorporate with a capital stock of \$30,000, or \$1,000 each. Ten per cent. of this paid in would make \$3,000 cash capital to buy the necessary machinery to start with. If it is not enough pay in more, or fix the capital stock higher, say \$40,000, and get fifty farmers interested and raise \$5,000 each, the balance could be paid in in the shape of raw material—grapes. The establishment could be run under the direction of the stockholders, or a Board of Trustees, who should employ an overseer who was well posted in making wine and taking care of it. Now, for the purpose of breaking the ice, I have thrown out a few ideas, and hope some one else will express his opinion, and we will canvass the different ideas expressed.

Manlove—I am not posted as to any plan to be adopted or any that may have been contemplated by those who have been interested in calling this subject up, but it seems to me that the idea is a good one, and can be carried out to practical results and the grape growers secure material benefit from it. The Johnston Distillery, for instance, was incorporated with a capital stock of, I believe, \$30,000, and has been in operation but one season, and has been doing so well that the company have accumulated material that represents \$100,000, and have increased the stock to that amount. If a company of gentlemen who have all their grapes to buy can make a success like this, then certainly they have a good margin for profits. The grape producers themselves, by associating together can secure these profits to themselves, instead of being compelled as now to dispose of their grapes at a price that does not pay to produce.

Stewart—In a co-operative winery the stockholder may have the privilege of bringing in his grapes, having them crushed and the wine put into casks, at a small cost compared to what it would cost him to make the same quantity of wine on his own place single handed, and upon paying the cost of making, can at any time, remove the same to his own place to store or sell, as he may see fit. Thus a considerable expense would be saved to each individual and a large amount will be saved to all the stockholders collectively, and the neighborhood who support the winery will receive the benefit of this saving. Then, too, the wine made in this way will be better than if made by each individual on his own place and will have a uniform quality.

Holt—There can be no doubt that a great saving can be made by a co-operative winery, and those who grow the grapes may as well receive the benefits of this saving and at the same time secure the benefits of the profits to be made in the manufacture and handling of the wine, as to allow others to make these savings and profits. While I am a temperate man, I am not one of those who believe that the increase of the wine industry into it will be found that intoxication is not in one case in a hundred caused by the use of wine or any pure product of the grape; but by the use of imported alcoholic drinks made from alcohol as a base, or from liquor made from corn or other grain.

Men do not become intoxicated because liquor is cheap or plenty, but because of the foolish practice of taking a social glass, and because the open bar and grog shop is allowed on every corner. Banish the alcoholic concoctions from these shops and substitute pure native wine and we would see but little drunkenness. Now as to co-operation. Combination is the order of the day. All classes of people except the farmers are already combined and working together for their own collective and consequent individual benefit. To protect their own interests and to insure prosperity the farmers must combine and put their heads and money together. Single handed we cannot cope with the combined skill and money of all other classes.

We must lay aside all the foolish idea that each man must individually control his own individual business, and placing every confidence in each other, combine for the general and individual good. Many advantages can be taken in a combined effort at wine making of which each individual cannot avail himself. Greater facilities in machinery, and for handling and maturing wine, can be had in a large establishment with much less proportional cost. Then again a large establishment that shall make up the grapes from thirty or forty farms can afford to pay for the services of a skillful manager, and will make better and more uniform wine, that will be worth much more in the market, and being better will always command better prices and find ready market, while that made by individuals cannot be sold.

Lavenport—I agree with much that has been said, but must differ with the views expressed by some gentlemen. For instance I believe that many more advantages may be secured by making the wine all together and keeping and handling and marketing it together. In this way we will establish a reputation for the brand of the association that will sell it at home or abroad. Not so if each individual undertakes to handle and market his own wine after being pressed. There is even more to be gained by the handling, aging and marketing the wine as an association, than by pressing it. Another great advantage that can be secured by a combination of interests, all the refuse pomace, etc., that must necessarily be wasted in a small establishment, because the expense of saving will be so great, can in a large establishment be saved and utilized.

Adams—Has been pleased with much that has been remarked. The farmers are the only class of people that sleep on their own interests. They are so isolated from each other that they don't seem to have caught the spirit of the age. They allow everybody else to take advantage of them. And hence so many farmers are becoming dissatisfied with their lot, and so few young men are inclined to become farmers, and so few young women desire to take charge of a farm house. The correction of these evils are in the hands of the farmers themselves. They must wake up to their own interests and work for themselves as a class—as other people do. I have nothing to say against the merchant or middlemen; they work for their own interests, and all should learn to do the same.

Our State presents the strange spectacle of 300,000 people living in towns and cities; with 200,000 farmers, miners and lumber men and other producing classes are laboring to support them. The 300,000 are associated together as their interests dictate, and through these associations and combinations they control the prices and value of everything produced by the 200,000 laborers who, in fact, are the real supporters of the whole community. Not only this, they control our laws and all our customs for their own interests. I think in the place of a co-operative winery it might be well, or policy at least, to allow each stockholder to draw out his wine on payment of his proportion of cost of making—farmers like to manage their own individual affairs.

Rutter approved of the idea of keeping the wine together—the brand then will represent the quality, and wine kept in a uniform temperature and subjected to uniform treatment will always command a better price. In regard to the temperance question I will say that when I first commenced the wine business I watched the question, and can conscientiously say that my experience and observation is that there are very few men who grow grapes and make wine who become any the worse for liquor. If we had none but good pure wines in the State we would be a community of temperate

people. The familiarity with wine, or its great abundance, is not calculated to lead to any intemperate use of it, but the contrary.

Lockett came in by invitation and intended to become only a spectator, but had become interested in the discussion of the subject and believes in the principle of farmers combining to protect and promote their own interests. Thinks the capital stock had better be fixed at a larger sum at once. It will want more ready money to begin the business than had been suggested. A good establishment will cost considerable money. A building and press and other necessary machinery of the capacity contemplated will cost considerable money, wages of operators will have to be paid and all other incidental expenses kept up; but still if the farmers say so they are equal to the task and will succeed. Believes it better that the wine or brandy made be kept together as the property of the association and marketed as such. This plan has many advantages that have been mentioned. If a stockholder can sell wine let him do so and give an order for the same, and let them have some advantage out of the transaction: but let the wine remain the stock and property of the association, and under their control and management, as a few men can take care of a large quantity of wine much more economically than one man can take care of a small quantity, and do it better, as has been remarked.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

At the meeting on Friday evening, Nov. 8th, Dr. E. S. Carr, President, presided.

A communication was read from Mr. I. N. Hoag, Corresponding Secretary of the State Agricultural Society, enclosing a copy of the law of 1868 for encouraging the planting of trees upon the highways of this State. The Club, and individual members, were urged to use their influence with officials and others to promote the raising of trees in all desirable public places, for beautifying our country and rendering living in California more agreeable and desirable. The communication was placed on file. It would furnish a good subject for discussion at an early date.

Horse Pestilence.

An interesting report on this subject, endorsed by Mr. G. D. Jewett and T. Hart Hyatt, Chairman of the Committee, was read by the latter. It set forth most of the reliable facts obtainable in all printed reports received on this coast on this new disease, in a form desirable for preservation, and especially for reference should the disease reach this Coast. It included telegrams as late as November 7th, from various portions of the Eastern States, including Boston and Chicago, stating the disease was unabated, while in some parts it was improving. The Committee feel unable to answer the questions whether the disease will reach the Pacific Coast, but think it well to watch closely its approach in this direction.

A vote of thanks, offered by Mr. Pryal, to Hon. J. W. Dwinelle for his instructive address, so pleasantly and socially delivered, was passed unanimously.

A gentleman present mentioned that co-incident with the trees in Italy, stated by Judge Dwinelle, to singularly lean in one direction without any apparent cause, he was knowing to the fact that willow trees, in a certain region of Illinois, all leaned from the north, while the prevailing winds were from another direction.

It was stated that the English larch was exceedingly slow in decaying in the ground.

Mr. Pryal said there were two kinds of larch trees; one as soft as Lombardy poplars, the other strong and durable, furnishing hop poles fit for use for 4 or 5 years.

Judge Dwinelle said he had seen newspaper statements about the heart rot in the larch.

Mrs. Carr said that the disease in the larch seemed to be in certain plantations. It might be owing to special location or cultivation. The larch is about the highest in the scale of all known trees for durability and toughness.

Mr. Pryal said we have a native variety of larch trees commendable for cultivation.

The subject of "Forest Tree Culture" will be continued at the next meeting, when an interesting discussion by members may be expected.

The reporters of the Oakland daily papers—the *News* and the *Transcript*—were missed from this interesting meeting.

Adjourned to Friday evening, November 22d.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The Club met Saturday, Nov. 9th, at the usual hour, President Casey in the Chair. The minutes of the preceding meeting were read (from the PACIFIC RURAL PRESS) and approved.

The Committee on City License reported that they had not decided as yet on any definite plan of action. They had a copy of the new City ordinance on license, which was read.

The City Council had doubled peddlers' license instead of abolishing it as the Club requested. The Committee were of opinion that some action should be taken, but were not prepared to recommend what, at present. Several expressed the opinion that the action of the City was unjust and hoped that something could be done to remedy the evil.

Free Rent and No License.

Mr. L. H. Holloway informed the Club that Mr. Leddy had requested him to state to the Club that the Farmers could have room in the

New City Market to sell their produce free from rent and license; but the farmers present did not seem to be sufficiently interested, even to return thanks for the liberal offer.

Asking and Answering Questions.

Mr. Cadwell desired to know how the Tea Colony prospered, and Mr. Hobson answered that it had proved a failure. To the question which are the best Raisin grapes, Mr. Burrell replied, the Muscat of Alexandria. Two and a half to three pounds of these grapes will make one pound of

Raisins.

The vines should not be trimmed high, they do better with him on the ground, are more free from mildew. He has gathered sixty pounds from a four-year old vine, but does not usually get a forty pound box full.

Apples for Milk.

Mr. Burrell in reply to the question of feeding apples, said he had fed good sweet apples and considered they increased the milk about equal to pumpkins or carrots but no better. One member thought sour apples do equally well, but need cooking before being fed.

Mr. Burgland desired to call the attention of members to an editorial in the *Mercury*. He thought the *Mercury* man fast, and it would be well for us to follow, instead of abusing him as we sometimes do.

The Mercury's Reports.

President Casey said that perhaps he ought to explain his position as he had been misrepresented in the reports published in the *Mercury*. It made him appear as leaving in a passion, which was not true. They were in the habit of misrepresenting him. He did not think it the fault of the reporter but of the *Mercury* man. He had concluded to remain in his present position at the request of the Club.

Mr. Thomas thinks we better not take any notice of the reports—they are hastily written, and hastily printed and of course there will be some mistakes, but on the whole they are fair.

Mr. J. F. Holloway had also been misrepresented, and when he had rose to correct the mistake they again misrepresented the correction and made it worse than before. He believed we should vindicate ourselves—and perhaps exclude the reporters altogether. Mr. O. Cottle thinks that Mr. Holloway is a good fighter and rather likes to have a fight with the papers. He thinks the Club has been tenderly dealt with by the reporters, and frequently the proceedings have been so written up as to make us appear to a great deal better advantage than we deserved.

Mr. Burgland thought the *Mercury* the farmers' friend, and that we should encourage it instead of denouncing.

President Casey thought the *Mercury* would not dare to attack doctors, or lawyers, or merchants, as it had the farmers.

Mr. Chipman thought that we had treated the reporters badly, and that it would be better if we encouraged them and attended more to the business which properly comes before the Club. It is not advisable for us to fight with newspaper men, they have got the advantage of us, they can print all they please and we can't, so we will get the worst of it every time.

Holloway said we had never said an unkind word of any paper till they first attacked us, and he certainly thought we had a right to protect ourselves.

Green Feed.

How can we best procure green feed during the dry season, was discussed during the remaining half hour of the session. Mr. Settle thinks pumpkins the best substitute for green grass. He has tried beets but they are not good for milk. Pumpkins as well as beets will keep till the new crop comes.

Mr. Cadwell keeps green feed by the means of a windmill and a surface well. He thinks carrots and pumpkins both good, but squashes are better; they will keep.

Mr. Settle said that all those we call pumpkins in this valley are squashes. He considers the marrow-fat squash the best. Feed the seed; it does not make enough difference in the milk to pay for the trouble of taking it out; he had thoroughly tested the matter; the quality of butter is just as good, and the seeds are nutritive and keep the cows in good condition.

Mr. Burgland thinks to make beets profitable they should be allowed to have two years growth.

Mr. J. F. Holloway hopes that we will be able to raise green feed, even on our hill land. He thinks Chinese sugar cane will answer the purpose, and that perhaps we can raise three crops in one season from one planting. As a people we are a success in raising; all we need now is to be successful in appropriately applying what we produce.

Chinese Sugar Cane.

Mr. Burrell had seen it raised on the driest of San Diego land without irrigation, when only five inches of rain fell, and said it was cut for feed. The sprouts coming up made a second and third crop, even better than the first.

Beets.

Mr. Chipman has raised beets but does not think it pays; cows will milk full as well fed on hay and water, which is more convenient. He thinks pumpkins good, and also thinks they can be raised on any of our land, by subsoiling once in four or five years.

Mr. Settle said no irrigating is required on

our good lands with a usual rainfall, and a very little in dry season.

To Keep Pumpkins.

Build a crib about a foot from the ground, ten or twelve feet wide, sides two or three feet high, floor and sides barely tight enough to keep them from falling through. Cover with common lumber, handle them occasionally and feed those that are inclined to spoil; in this way one can keep pumpkins and squashes a whole year.

Mr. O. Cottle does not think beets any account for feed; he has tried them thoroughly.

Mr. Pebles says his Durham cattle did well on beets. Maugles are better for milk, but he can raise such a quantity of sugar beets—thirty tons to the acre, and the cattle keep in good condition, and he always gets the very highest price for butter. It needs bran or shorts mixed with beets to fatten hogs.

Mr. Burrell said that cattle should not be allowed to run on the pasture, but let the grass be cut and fed to them in stalls is much more profitable, to which proposition several assented.

Mr. Burrell presented the club with a box containing several varieties of fine grapes, which the members seemed to relish after adjournment.

SUTTER FARMERS' CLUB.—

This club met Saturday, Nov. 9th, at the Court-room in Schuessler's building, Yuba City; President Bockins in the Chair, and J. H. Esselstynne acting as temporary Secretary. Mr. Ohlean addressed the Club on the importance of continuing the organization, and those present most heartily concurred in his remarks. All thought it obligatory upon the members present to exert themselves, and induce farmers generally to attend the next meeting and join the Club, to the end that the farming interests of the country might be advanced. The special question before the Club yesterday was: "Is it beneficial to the farmer to burn his stubble?"—which was discussed at some length, and continued for further discussion at the next meeting. By vote the Treasurer was authorized to give notice of the next meeting by posting of hand-bills. After a few brief remarks by the President, in which he urged the press to give publicity to their proceedings, the Club adjourned to meet at the Supervisors' room, at the Court-house in Yuba City, on Saturday, the 23d inst.

Beet Sugar in California.

The Alvarado Beet Sugar Mill has been running now a little more than two months on the beet crop of 1872, and will probably be busy for four or five months more, working up fifty tons of beets per day. The exact amount of the crop will not be known until all the beets still in the ground shall have been taken up and piled for the winter, and that operation will not be completed before December. The Alvarado crop of 1870, yielded 500,000 pounds of sugar; that of 1871, 750,000 pounds; and that of 1872 will be between 1,000,000 and 1,250,000 pounds. The average per centage of sugar obtained from the beets was under eight in 1870, about eight last year, and is eight and a quarter now. We have no precise figures from the Sacramento Beet Sugar Mill.—*Alta Cal.*

We have as yet but two beet sugaries in California, and the price of No. 1 granulated sugar has been reduced from 13 and 13½ cents per pound down to 11½ cents, one cent a pound lower than the same quality in New York city. Give us a few more beet sugaries, and our city refineries that have hitherto made the prices what they would, will find the value of sugars governed by the home production, instead of the freaks of those who import raw sugars from foreign countries to enrich themselves, as refiners, at the expense of consumers as formerly.

Manufactures in the United States.

The ninth census furnishes interesting data showing the extent of manufacturers in the several States. There are 252,148 establishments, 40,090 steam-engines and 2,053,988 persons employed in manufacturing industries; the capital invested is set down at \$2,118,247,069; wages paid annually \$775,621,593. The value of manufactured product for the year ending June 1, 1870, was \$4,232,625,892. The manufacturing interests are represented by the several States, as follows:

Alabama.....	\$ 13,040,644	Missouri.....	\$200,213,429
Arizona.....	185,410	Montana.....	2,494,511
Arkansas.....	4,029,234	Nebraska.....	6,738,512
California.....	66,594,556	Nevada.....	15,870,339
Colorado.....	2,852,820	New Hampshire.....	71,038,249
Connecticut.....	161,065,474	New Jersey.....	169,237,722
Dakota.....	174,570	New Mexico.....	1,489,868
Delaware.....	16,791,382	New York.....	785,194,651
Dist. Columbia.....	9,292,173	North Carolina.....	1,921,327
Florida.....	4,885,408	Ohio.....	269,713,610
Georgia.....	331,196,115	Oregon.....	6,877,837
Idaho.....	1,047,625	Pennsylvania.....	712,178,941
Illinois.....	206,620,672	Rhode Island.....	111,418,354
Indiana.....	108,617,278	South Carolina.....	985,988
Iowa.....	46,534,322	Tennessee.....	34,362,626
Kansas.....	11,775,823	Texas.....	11,517,302
Kentucky.....	54,625,809	Utah.....	2,349,019
Louisiana.....	24,161,905	Vermont.....	32,184,606
Maine.....	79,497,521	Virginia.....	38,364,322
Maryland.....	76,593,613	Washington T.....	2,851,052
Massachusetts.....	553,912,568	West Virginia.....	24,115,051
Michigan.....	118,304,676	Wisconsin.....	77,214,826
Minnesota.....	23,110,700	Wyoming.....	765,424
Mississippi.....	8,154,756		

SOME men, like pictures, are fitter for a corner than a full light.

AGRICULTURAL NOTES.

CALIFORNIA.

FRESNO.

Expositor, Oct. 26: COTTON GROWING AT CENTERTVILLE.—We have frequently mentioned the cotton crop of Mr. C. Davis, situated near Centerville, while in progress of culture. At this time Mr. Davis is actively engaged in gathering this valuable crop, and further furnishes practical evidence that cotton can be produced in that region. The present situation of the crop furnishes many evidences that may not be seen at other times, and it would be well for parties contemplating to grow cotton to inspect the crop at this time. The field presents the appearance of snow banks. As the gatherers leave the cotton in piles in the field, which presents a rather beautiful sight, especially in the evening.

RICE.—We received, a few days since, a sample of rice grown by J. R. Heinlein, near Kingston in this county. He planted two pounds last Spring and has harvested about one hundred pounds from it. The sample sent us are very fine. The grains are large, plump, and white, and the heads full. Mr. H. intends to plant more next year. If such rice, as the sample shown us, can be raised in this county, it would be a very lucrative business to engage in.

NEVADA.

Republican, Nov. 2: WOOLEN MILLS.—The people of Reno are talking about taking stock in and erecting a woolen mill at that place. We have no doubt but that such an enterprise would pay at Reno, and if it would pay there a similar enterprise ought to succeed in Truckee.

Besides a woolen mill, a paper mill and a flouring mill could be made profitable here. In the manufacture of paper plenty of pure water is especially required, and this we have in the greatest abundance. With a grist-mill this would be the principal outlet for the wheat, oats and barley of Sierra Valley. The Winters here are not severe enough to interfere with any of the above suggested enterprises. The factories of New England are not closed down on account of cold weather, and the climate of Truckee is much more mild and equable than in the warmest portions of Massachusetts, Connecticut or Rhode Island.

INFLUENCE OF WATER ON CLIMATE.—The temperature of the air at Lake Tahoe is several degrees warmer than at Truckee, although the lake is about 600 feet the highest in altitude. Another singular fact is that the waters of the lake, although exceedingly cold in the Summer, are never frozen in any place in the Winter. At various places around the lake at an elevation of 6,500 feet above the sea vegetables are raised without difficulty, and potatoes grown there, for quality, cannot be surpassed any where else on the Coast. Only a few years ago it was generally believed that neither grain nor vegetables could be raised in the Sierra Nevadas at a higher altitude than 5,000 feet above the sea. The temperature of the air at Tahoe is more even than at any other point in California of the same altitude, and this fact is probably owing to the influence of such a large body of water on the atmosphere. Donner Lake, 500 feet lower than Tahoe, freezes over in the Winter, the lake being too small to have any perceptible influence in moderating the temperature of the surrounding atmosphere.

Transcript, Nov. 1: Cattle are coming through town every day, in big droves, from the mountain pastures. The cattle look to be in very fine condition, and the clover up in the mountains has been very sweet and nutritious this year.

SACRAMENTO.

Antioch Ledger, Oct. 26: THE POTATO CROP ON SHERMAN ISLAND.—Farmers on Sherman Island are busily engaged in harvesting their crop of potatoes. Although the number of acres planted was considerably less than last season, owing to the flood of last Winter, yet the yield is good, and the scarcity of this crop in the Bodega county will cause them to be in good demand at advanced prices. The levee is approaching completion, and its dimensions are such as will prove an effective barrier against the encroachments of high water.

SAN DIEGO.

World, Oct. 26: THE PAST HARVEST.—After Mr. Warnock has threshed his own crop, about 1700 sacks, with his fine twelve horse power Pitz Thresher, cleaned up all the grain in the Ballena excepting his own, amounting to near three thousand sacks, he commenced on the Vulcan and Cuyamaca grain, when he threshed near three thousand sacks, the larger portion being barley.

SAN BERNARDINO.

Guardian, Nov. 2: KILLING FROSTS.—Last Monday night occurred the first frost of the season. Tender plants, such as the potatoes, tomatoes, squash, etc., and the leaves of the fig and English walnut trees, give unmistakable evidence of the presence of "Jack Frost." In some localities ice was formed an inch in thickness.

SIERRA.

Messenger, Nov. 2: EARLY STORM.—Last week we were visited with the first storm of the season. It rained here for a couple of days, snowing above. At Eureka the snow was about five inches deep. The rains were followed by several of the severest frosts we have ever known at this time of the year. Will some of our augurs tell us whether or no this betokens an early and severe winter?

SAN JOAQUIN.

Independent, Nov. 2. The first rain of the season fell at an early hour last Saturday morning. Although light in this city, the shower is reported to have been quite copious in portions of the valley.

Heavy snows in the mountains of Utah are somewhat retarding mining operations, and there are apprehensions of an early and heavy winter.

FUEL.—The late sudden change of weather to a wintry temperature seems to have had the effect of causing farmers who had piles of cordwood on hand, to throw it all at once upon the market. Lately, large quantities of cordwood of the very best quality has been brought into the city by teams. The prevailing price is \$3 per cord.

THE PACIFIC CHICORY WORKS.—These works are located on Lindsay street, between Racoon and Tule streets, in this city, and are owned by Messrs. Raab, Meine & Co., who have the necessary buildings and machinery in operation for the manufacture of chicory on an extensive scale. The machinery is operated by a steam engine of about twenty-horse power. The boiler is eighteen feet long and thirty inches in diameter. In addition to the necessary machinery for cutting and grinding the roots, apparatus for roasting, etc., there is an extensive kiln for drying the roots more thoroughly than can be done by exposure to the atmosphere. The works are new and the facilities are ample for the manufacture of five tons of chicory per day, and extensions and additions will be made as business necessities may require.

FARMERS BUSY.—We are told that the farmers in some parts of the county are busy seeding their fallowed land. Many prefer to have the seed in the ground before the first rains fall.

SANTA CLARA.

Advocate, Nov. 2. THE FIRST RAIN.—On last Saturday morning at five o'clock the first rain of the season occurred in Gilroy. It pattered quite briskly on the roof for a short time, waking many of our slumbering denizens. It had the good effect of laying the dust and purifying the atmosphere. Fortunately it did not rain enough to damage the thousands of tons of uncovered grain in our valley. All the indications augur well for an early and a wet winter. The wild geese are leaving their northern home for a more genial winter residence in the valleys. Our farmers will heed the warning and prepare for another and, we hope, favorable winter.

SOLANO.

Chronicle, Nov. 2: EGYPTIAN CORN.—In speaking of the agricultural products exhibited during the late District Fair, we made mention of a variety of Egyptian corn from the farm of Mr. Logan of St. Helena stating that this was the only seed on the Pacific coast imported from Illinois. Since that we have received a sample of the same kind of corn grown by Charles A. Peabody on his ranch in Suisun Valley which is much larger than the bunches exhibited by Mr. Logan. Mr. Peabody informs us that this corn was plentiful in his garden last April, and the sample sent to this office is of the second crop being only about two-thirds as much as the first crop. The third crop which is now maturing will be still less in the same proportion. Thus it will be seen that Mr. Peabody will secure three crops in one season from one planting and the stalks are still fresh and green. The corn stalk and leaf have about the same appearance as ordinary corn. The grain grows in clusters of one bunch to a stalk for each crop and is unlike any other corn species in appearance. The corn is considered by those who are acquainted with it to be a profitable crop to feed to fowls and hogs. This gentleman will plant next season something like an acre or two.

TULARE.

Delta, October 31: ICE.—On Monday morning last, vessels containing water and exposed to the air were found covered with a slight skum of ice, and the weather since has remained "cool for the season."

A BIG SNAKE.—Last Sunday a gentleman now camped on the north side of the town killed a large bull snake. We saw it on Monday. When killed it was seven feet, one inch in length, and six inches in circumference.

A CURIOSITY.—Mr. E. M. Bentley informs us that while out, not long since, on a trip in the region of Greenhorn Mountain, he came across a curiosity which he describes as consisting of some eighteen holes of uniform size, and shaped like a potash kettle, existing in solid granite. They were about three feet in diameter, and about one and a half feet deep. They were round, polished and uniform, and evidently the work of art. It becomes a matter of inquiry to the curious, to know what these holes were used for and by what race. Reflection has induced our informant to believe that they must have been employed for some purpose akin to that for which the Mexican *arastra* is now used, and that their position may indicate the neighborhood of an ancient mine.

YUBA.

Enterprise Nov. 2: SOWING GRAIN.—Some of the farmers in this section are now sowing grain and covering it with the cultivator.

THE WEATHER.—Friday night Oct. 25th, furnished us with the first rainfall of the season; and Saturday morning was bitter-cold; a gray frost, the first of the year, covered the face of the country hereabouts. Sunday, Monday and Tuesday were windy and cloudy days, but the

latter part of the week now gone, has been warm and pleasant as in the spring time.

Appeal, Nov. 1: EARLY AND LATE PEACHES.—We ate yesterday a late free-stone peach from a tree in the yard of Geo. Smith, which was sound, hard and very palatable—such as would bring a high price at this late day of the peach season. This reminds us of the fact that orchardists are planting and budding with a view to produce more early as well as more late peaches. The peach ripening in the middle of the season is so plenty that the price paid hardly pays for their picking.

Nov. 8: SNOW TENT LUMBER.—Large quantities of very fine sugar pine lumber is brought by return teamsters to this city, for local consumption and shipment below, and the following item from the Nevada *Transcript* tells all about its manufacture: "The Snow Tent saw mill, owned by W. B. Churchill, is in a fine sugar pine range. The mill has run full hands for five months, and the force is now reduced. During the season 2,200,000 feet of sugar pine lumber has been sawed. The mill will cut a board 56 inches wide, and will saw 20,000 feet per day. This lumber is as fine as any made in the State, and has been shipped below for market. Every empty wagon passing down the ridge, destined for any point, has been loaded at the mill. The lumber is always in demand, and finds a ready market anywhere at good prices."

OREGON.

SALEM.—The town of Salem is making sure and steady progress. The population does not exceed 6,000 inhabitants. Its two principal hotels, University, Court-house, just being built at a cost of \$100,000, the new Methodist Church, that will cost \$30,000, are samples of the fine buildings that adorn Salem. The stores are numerous, large and elegant. The merchants are prosperous. Manufacturers are making satisfactory progress. As good flour and as superior woolen goods as the State can produce are made here; and Mr. Myers' new mill for manufacturing turbine water-wheels and agricultural implements, that will cost \$100,000, will be a credit to the State. The moral tone of the city may be considered favorable, from the fact that it is called the city of churches, colleges and schools.

Address by Hon. J. W. Dwinelle.

[Before the Oakland Farming Club.]

Mr. Dwinelle said that he had no address or lecture prepared for the occasion, and could only give an informal talk on some of the peculiar features of agriculture which he noticed in a trip through Europe. He had not studied the subject chosen for the consideration of the Club that evening, and had read but one article of importance upon it. That one was by a gentleman in Delaware who had cultivated fruit trees for over forty years, and whose experience was given in a letter to the Commissioner of Agriculture, and published in one of the late monthly reports.

He did not find it easy to get much information on general subjects from Europeans whom he met while traveling. Their observations seemed to be mostly confined to their own special profession or line of business. For instance, in Holland, many of the

Cows Wear Blankets

To protect them from the changes of the weather, and these are kept on during the entire season of pasturing. Being curious to know of what material these covers were made, he had asked several natives of the country whom he met there, and others living in California, but no one would say whether they were of sacking, of woolen or some other material. As he had no opportunity for a personal examination it is still a mystery. It is stated as a remarkable fact that as a result of this covering there is a race called *blanket cattle* in which the calves are born with the mark of the blanket on them.

Tree Planting in Europe

Is practiced extensively for ornament, for fuel and for timber.

Going from Newcastle into Scotland the road ran through the Cheviot Hills, a remarkably bleak and barren country. There was hardly an object to break the monotony except the stone sheep-folds, or as the Monotonians would call them, corrals. These were about half-way up the slope, apparently so placed to avoid the hilltops and the cold air which sinks into the valley bottoms.

On approaching Abbotsford, the home of Sir Walter Scott on the Tweed, the hills were all crowned with beautiful forest trees, in apparently natural positions. An old man living there said that he remembered well when Sir Walter bought the place, and that at that time it was as bare and bleak as the surrounding country. Now it is celebrated for its beauty.

Sir Walter Scott

Was a pioneer in forest culture in Scotland. His example has been very extensively followed, and much poor land has been made very valuable by planting forests. The dukedom of Athol was formerly a poor one, but its revenue has been greatly increased from artificial forests. The larch has been much planted, but it is found that it is very liable to decay at the heart, and for that reason it will probably be rejected as a forest tree. In Europe wood is very precious, and every scrap of it is saved and utilized. Chips, shavings, the trimmings of

vines, and fruit trees all come in play. In Paris wood is sold by weight in little bundles.

The Poplar is much Planted in France

for fuel, the branches being cut periodically and tied into faggots. Only enough of the small branches at the top of the tree are left to keep up the circulation until new shoots start below. Trees are also cultivated on worn-out lands to renew them.

A gentleman in Germany told Mr. Dwinelle that his family owned large plantations of trees. The oldest of these had been planted about 25 years, and the last of them would be ripe for use at 125 years old. The owners expected a return of three per cent. per year on their investment, which is the usual rate paid there on secure loans.

The trees are planted in regular rows, and often quite close together, apparently about three feet apart. As they grow they are thinned out in such a way that those left shall be at regular distances apart.

The first cutting is for hop poles; the second for telegraph poles; railroad ties, spars, etc., the third for house and bridge timbers and the like; the ripe trees are finally cut for the heaviest timbers, masts and boards.

No Fences

Are used in the greater part of Europe, and little wood is used in other structures where stone and mortar will do as well. In many cases the houses are built entirely of masonry, the ceilings of the rooms being arched to support the upper floors and roof. This is particularly common about Naples in Italy, where this solid mode of structure is considered the best protection against earthquakes. Fences were noticed in the south of Italy, but they were of solid masonry, and on the top of each was a small aqueduct for irrigating the field.

The Osier Willow

Is very extensively cultivated and the variety of articles manufactured from it is wonderful. Mr. Dwinelle saw books full of patterns used by the willow workers, and was told that there were already about 35,000 different patterns used. They included almost everything from a baby's rattle to the body of a dory. On the Rhine opposite Strasburg this industry is immense. There the banks of canals for catching the overflow of the river, and the irrigating ditches are bordered with Osiers.

The Culture of the Cane

Will probably become of importance in California. In Italy, it is extensively grown and used in various ways. About six feet of the butt is used in staking the vines, and the more slender portions are woven into screens for protecting growing fruits and vegetables from the *tramontana*, a cold north wind which blows off from the Alps during a considerable part of the year.

The Olive

Is one of the most important crops in most, if not all of the countries about the Mediterranean; but in traveling over 1,000 miles in the olive countries, Mr. Dwinelle saw nothing equal to the olive orchard at the old Mission of San Diego in this State. In France, the olive is liable to being killed by frosts. Along the Mediterranean, easterly from Nice, the olive is much cultivated on terraces supported on the steep mountain side by walls of masonry. Sometimes as many as thirty of these terraces are placed one above the other. The olive is a native of Africa, where it is a forest tree. Its valuable qualities have been developed by cultivation. The age which it sometimes attains is wonderful—some specimens in Asia are known to have been taxed for 2,000 years. It has a peculiar way of splitting up its trunk while still living and forming a group of trees, instead of one.

The olive tree is fed with the most concentrated animal manures, rags and leaf-moulds. Where grown on the hill-side, as above mentioned, the trees were not perpendicular, but had a decided inclination away from the hill, and for this peculiarity there was no apparent cause, unless it was because there was more light on that side.

The Vine

In Europe is not often grown on good soil. It is usually rough dry hill land that produces the best wine. In such localities the vines are slender and need to be staked. On the bottom lands the vine makes a vigorous growth and is able to support itself, but the wine made from it, is dark and of the worst description.

The vine and the olive are not irrigated, but the orange, lemon and lime must be. On the Rhine vines are grown on hills so steep that to gain a terrace a few yards in width arches of masonry fifty feet or more in height are built on the face of the slope.

The banks of the Neckar rise more gradually, but still the terraces have been constructed with great care and expense. At Offen, in Hungary, the grapes were very beautiful and large, but insipid and watery from too much rain.

In parts of Italy the division lines of the farms are marked by poplar trees which furnish fuel, and also support vines planted at their base and interwoven from one to the other. The fields themselves are besides planted with some vegetable or grain crop, thus securing great economy of space but a very poor wine.

CALIFORNIA LABOR EXCHANGE.—We would call the attention of our readers to an advertisement in our columns of the California Labor Exchange. This institution is still worked as a private enterprise, by its former efficient Secretary, Mr. A. Zealandelaar.

HOME AND FARM.

Homes in the Foot-hills.

Webster defines foot-hill, as a hill lying at the base of a range of mountains. There are two main ranges of mountains in California, and each—but particularly the Sierra Nevada—with a broad belt of foot-hill lands at its base. These lands are as diversified in their conformation, situations, exposures, elevations and qualities of soil and adaptability to the wants of the husbandman as it is possible to imagine.

There is no general rule of conformation observed in all their vast extent, from Kern County on the south, northwardly to the Oregon line a distance of 400 miles, with a width of from 10 to 80 miles. In some districts are found extensive plateaus of hundreds of acres, with deep cañons, ravines or valleys on either side; in others, long ranges of rolling hills lying in all directions, but not so steep in any part as to prevent their being easily cultivated; and yet in others, sharp, conical hills so steep and rugged that only sheep and goats can be successfully grazed upon them.

The Lower Foot-hills.

These are but little elevated above the levels of the great valleys, and are therefore adapted to the growing of all the finer fruits of the same latitudes in other countries, including also many of the semi-tropical; and as the conformation of surface presents in many places a partial barrier to the desiccating north winds that occasionally sweep over the lower plains, these hills, but more particularly the depressions between them are admirably adapted to the wants of the fruit-grower who would devote his efforts to the culture of the orange, lemon, lime, grape and fig; whilst the hills themselves are equally well adapted to the growth of the cereals.

On this portion of the foot-hills there is to some extent a scarcity of water, except such as is obtained from wells, there being but few springs in this division of the hills, and many of the mountain streams that afford a supply higher up, are dried or totally absorbed here through the entire summer. There is also but a meager supply of timber, and this fit only for fuel.

The Middle Foot-hills.

These we place at an elevation between one and three thousand feet above the Sacramento River or the sea; because we have given particular attention to elevation as affecting the fruit and general agricultural product. Placerville, in Eldorado County, is 2,000 feet above the Sacramento River at Sacramento, and Coloma, on the south fork of the American River, has nearly the same altitude and both of these places are celebrated for the production of fine wines and finer peaches.

We are aware the great peach orchards of the State are on the Sacramento River and its immediate tributaries, or we may say, in all the lower valleys. But when we look for middle summer or late peaches of the largest size and of superior excellence, we look for them in Placerville and Coloma, and it is there we find them, together with apples, pears, cherries, grapes, strawberries and all the fruits of temperate climes in their fullest perfection. And yet with a winter of only light frosts and occasional flurries of snow.

But go 2,000 feet higher and we are above the temperate altitude and into one in which snow lies most of the winter. Even here, however, orchards of cherries, apples and pears, some few varieties of peaches are met with and generally productive.

Particularly is this applicable to late keeping winter apples; they seem to grow with a firmer, bolder flesh or pulp, more like the Oregon fruit than that grown lower down in the warmer valleys.

In all this range of elevation there is almost complete immunity from the drying northwind, rendering it the paradise of the grape-grower.

The Upper Foot-hills.

Above 3,000 feet and on up to 5,000, is the great timber and grazing belt, or upper foot-hills of the Sierras; and as the snows recede towards the higher mountains at the approach of summer, the grazing grounds are extended even up to and among the highest elevations; or to 8,000 feet above the sea.

It is between the heights of one and three thousand feet that the most desirable locations for rural homes and rural comforts, with all

the concomitants of village communities and social life will finally be realized. Here all the more substantial and varied productions, indeed all but a few of the more delicate fruits, will be found in the fullest abundance and perfection; whilst from these foot-hill homes, will radiate a thousand foot-paths for the countless herds of animals that will graze upon the higher slopes of the more rugged mountains above them.

Wood, Water and Grass.

These are always considered the grand requisites of a home or good camping grounds. It is between two and five thousand feet that we find an abundance of timber for fencing, building and fuel; whilst the grand old trees and the countless mountain streams and rivulets are but so many graces, beckoning the horticulturist and herdsman to immediate appropriation.

It is to these sylvan elevations with their everlasting fountains of melting snows above them and opportunities for immense and countless reservoirs among the gorges and cañons, that vast systems of irrigation, destined in the no very distant future to be among the striking peculiarities of California agriculture will look to and rely upon for their never-failing supplies; while a population like that of the Alps of Switzerland, remarkable for their intelligence, industry and virtue will be reared up, the pride and glory of California.

The Horse Disease.

At the last meeting of the Academy of Sciences, Dr. Arthur B. Stout read a paper on the subject of the horse disease now prevailing in the Eastern States, which will be read with interest in view of the wonderful spread of the disease, and the probability of its reaching us here. The subject caused an interesting discussion among the members in which Dr. Gibbons described a remarkable epidemic in the form of catarrh, which broke out among the human family in the year 1831, spreading throughout Europe and invading the Eastern States. It proved to be the forerunner of a terrible visitation of cholera. He believed from past experience that the present horse epidemic was the first of a series of epidemics that would attack the brute creation and possibly extend to the human species. Dr. Stout's paper read as follows:

The possibility that the "horse disease" now prevailing in the Eastern and Western States may reach California, renders it a subject worthy of earnest study. It is probable, or at least greatly to be hoped that the elevated and cold barrier of the Sierras may interrupt and prevent its passage across the Rocky Mountains. Even if it should not, the original germ elements of its existence may as well be generated primarily, if climatic influences favor their production on this, as on that side of the mountains.

It may then prove a public benefit to throw what light we can on this malady as far in advance as possible of its invasion. Being thus armed in advance with information every horse owner in the State may be prepared to act as his own Veterinary Surgeon.

We may premise by saying that the usual appliances of veterinary surgeons will not succeed. The nature of the malady is that of an intermittent fever disposed to assume a typhoid type. The usual catarrh, the throat disease, and the congestion of the lungs which appear with more or less acuteness are only secondary affections, and abate so soon as the primary fever, and brain disorder are controlled. Hence it is that purgatives, diuretics, sweats, blisters, and clysters if relied upon alone assist the malady by promoting debility. Whatever debilitates the animal will favor the disease—because the disease itself is one of debility caused by the poisoning of the blood through malarious influence. This poison prostrates the power of the brain and corrupts the blood; nervous fever results, and the animal requires support rather than debilitating agents.

The Symptoms of the Disease

As yet obtained are very vaguely described, but the one symptom, that of the coldness of the legs and ears is almost sufficient to define the malady. No journals have as yet given a clear account of the general symptoms. When the air containing the germ poison which the horse breathes, comes in contact with the lining membrane of the nose, mouth and throat it is quite natural that enough of those poison particles should attach themselves to these membranes, on the way to the lungs, and excite inflammation with discharge of matter, firstly thin and clear, and afterwards thick and yellow; if they have activity enough so to excite a local inflammation, how much more serious must be their energy when absorbed through the lungs, into the blood and thence transmitted to the brain.

While then it may be very well to make some local application to the nose and throat, to soothe that irritation, and empty the digestive organs of the horse by mild purgation, the object of the cure can only be affected by counteracting the influence of the poison on the blood and brain. This fairly attained the local catarrhs will rapidly abate. The fatality of the disease will depend upon the degree of

intoxication (empoisonment) and the celerity with which remedies are applied in its earliest appearance.

The Fatality of the Throat Affections

Is less to be feared, for it depends upon the neglect to relieve the primary malady. The inflammation in the narrow passage to the lungs becomes dangerous, by superceding the primary in acuteness, and then kills by direct suffocation, or strangulation, rather than by the malarious influence on the blood and brain. The rational and

Natural Treatments

To be derived from these views, is to apply the same remedies to the horse as would be resorted to for the human being. Due allowance being made for the comparative differences between man and the horse, the same treatment which is known to counteract malarious disease in the former, will also cure the latter. It is not asserted that all climatic germ-poisons are identical, but that they are so nearly allied in their action on living beings that modifications of the same general treatment will suffice to control them all. The same accuracy of dosage cannot be obtained for the horse as may be attained for man, because the animal cannot define his sensations, and the prescribers, horse-owners and farmers are novices in the art of medication. They cannot estimate the differences dependent upon age, strength, sex and the degree of acuteness of the malady. On such discriminations the animal must take his chance.

Being satisfied of the identity of the disease with that of the human subject and the similarity of treatment, the next question would be the dosage or the comparative quantity of the remedy. If this were estimated by the ratio of bulk and weight, the relative dose would be from 5 to 8 times greater for the horse than the man. But the organ to be acted upon is the brain, which in the horse bears no such proportion to that of man. Again, the simplicity and uniformity of food and habits of the horse, would render his nervous system much more impressionable to active therapeutic agents. The same would be true of the other functional organs of the animal. A safe inference would be the same; or at the utmost double doses would amply suffice.

Horse Disease in California.

Horse disease is no new thing in California. It has existed with more or less intensity for years. The chicken disease may be mentioned in the same category, and doubtless is referable to the same climatic conditions. How often have we heard of four or five horses dying within a few days in the same stable, and suspicions been excited that the water had been poisoned, or some foul play been practiced. Sometimes two or three horses, where there was no imputation of over driving or abuse, have died in a night, especially where the horses have been kept in basement stalls, and where the access of pure air was defective. These horses were in truth the victims of malarious infection, but unfortunately this truth was not recognized. The Rinderpest of Germany is another illustration of a similar infection, only its intensity was felt by the horned cattle. If then the horse disease appears as a general epidemic in California, some cautious reserve may well be exercised before the disease is pronounced to be an importation from the Eastern States, for it is certain that it may exist from local climatic cause, and not necessarily be the result of propagation by contagion, or by the diffusion of an onward march from State to State.

The Cure.

The sheet-anchor of treatment is Quinine; to it all other remedies are only auxiliaries. This should be at once administered without waiting for other preliminary treatment. The best moment to give the sulph quinine, if the prescriber is capable to judge, is in the cold stage of the fever, or when it is at its lowest temperature, as indicated by the coldness of the legs and ears. Fifteen to thirty grains at the dose every three hours—continued for 24 or 48 hours—according to the severity of the attack. During this time a mild purgative of jalap, guaiac and Glaubersalt may be of service. Let the animal be well blanketed to promote perspiration, and fed with warm mash.

The catarrh will be relieved by a local application of infusion of golden seal (hydrastis) in which a few drops of carbolic acid, dissolved in a teaspoonful of spirit of wine or whiskey, have been mixed. This remedy should be injected into the nostrils with a syringe having a long beak. In this way it will not only bathe the nasal membrane, but will reach the throat. Some of it will also be swallowed, which serves a good purpose in cleansing the stomach. In this mixture the quinine may be dissolved and be poured from a bottle down the horse's throat, serving thereby at the same time the purpose of a throat wash. A wineglassful of the infusion of golden seal will suffice for each nostril. If the fever is high the shoes should be taken off and warm poultices of flaxseed meal be applied to the feet and fetlocks.

The Hygiene of the Stable

Is a subject of the utmost importance. A bad and dirty stable is of itself enough to engender the disease, so that any false economy in this respect may lead to very expensive results.

All sick horses should be forthwith removed from basement stalls. Free ventilation to free the stable from ammoniacal and urinary odors is indispensable. Probably the best disinfectant, because not poisonous, and very efficient, is the bromochloralum, which should be frequently sprinkled from a watering pot through

the stalls and passages. A pint to a bucketful of water suffices. The addition of carbolic acid ($\frac{1}{4}$ oz. to the same measure) may be advantageously added. The bromochloralum, may be obtained as well as the golden seal infusion at Steele & Co.'s drug store.

This disinfectant, freely sprinkled into the manure-pit, will not injure the fertilizing properties of that substance; but here chloride of lime may also enter. But if chloride of lime is too freely used in the stable, the chlorine set at liberty will make the horses cough and increase the nasal catarrh.

Before closing, we venture the inquiry—May not the glanders (farcin) be closely allied to the malarious contagions, and, although the glanders is always considered an incurable, fatal disease, might not this same treatment prove that this disease may likewise be cured?

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.)

FOR WEEK ENDING OCTOBER 8TH, 1872.*

STONE-PAVEMENT.—Jacob Bolliger, S. F., Cal. METHOD OF BLASTING ROCK.—James Brodie and Samuel H. Wheeler, S. F., Cal.

TURBINE WATER-WHEEL.—James Cumming, Ione City, Cal.

COMPOUND FOR DESTROYING BED-BUGS.—Elizabeth Hooper, Diamond Springs, Cal.

SEWING-MACHINE.—Abednego D. Hopkins, S. F., Cal.

HYDRAULIC ELEVATOR.—Timothy Stebins, S. F., Cal.

SAFETY DEVICE FOR ELEVATORS.—Timothy Stebins, S. F., Cal.

AUTOMATIC BRAKE FOR MACHINERY.—Timothy Stebins, S. F., Cal.

REIN-HOLDER.—Edwin Charles Every Vile, Santa Clara, Cal.

FOR WEEK ENDING OCTOBER 15TH, 1872.

STEAM-BOILER FURNACE.—Frank A. Huntington, S. F., Cal., assignor to himself and Washington J. Miller, same place.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Variations of the Needle.

The subject of electricity is as yet but imperfectly understood, and we have much to learn in regard to the laws controlling it. At the last meeting of the California Academy of Sciences, C. D. Gibbs, Civil Engineer, made some interesting remarks on the subject of variations of the needle, and said his attention had been called to this particular subject from having been recently engaged in sub-dividing several thousands of acres of swamp lands on the San Joaquin River; a place where one would least expect to find any local attraction to disturb the needle. Nevertheless he had experienced great difficulty in connecting with old surveys, and had found the needle to vary more than one degree on the same line, one mile apart. Both observations were taken on the same tall flag, and the line established by fore and back sites with a transit, one station being on dry land, and the other in a dense body of tules, dry and green together, with water one foot deep, and wind from the west. A difference also frequently occurs between open grass land and heavy tules, more than would be occasioned by the diurnal variation.

Now will the wind, by agitating the tules producing friction of the dry pulps of the dead tules, create electricity so far as to effect the needle? This is a question that should be investigated thoroughly. Mr. Gibbs suggested that the Academy request all civil engineers to give the results of their experience, with regard to local attractions or disturbances of the needle in different parts of the State; and the facts thus collected may throw some light on the subject. In a previous communication on the subject Mr. Gibbs stated that his needle had been twice affected by a dry northwest wind, causing it to adhere to the glass. The same thing had occurred to Mr. Hunt, County Surveyor of Contra Costa.

Professor Geo. Davidson, in reply to Mr. Gibbs, said he was convinced that the variation was from no other cause than the effect of iron deposits in the earth, and it could be obviated by elevating the needle in the same manner as the compass on an iron ship.

TO CLEAN A STEEL PEN.—Place it over a gas-light for a few seconds, then dip it in water, and it will again be in good condition to write with. Also any new pen which is too hard to write with will become softer by being heated in the same way.

USEFUL INFORMATION.

The New York Underground Railroad.

The delay in undertaking the construction of the underground railway, for which Mr. Vanderbilt obtained a charter last winter, is attributed to the difficulty experienced by the projectors of the enterprise in obtaining right of way at 56th street. At this point the underground road will unite with the Harlem road, which, according to the plans that have been adopted for improving its present condition, will be several feet above the street level. To this the property holders in the neighborhood object, and insist that not only shall the tracks be sunk below the level of the street, but also the depot which is to be erected at this point for the temporary terminus. Until these demands are complied with, the owners refuse to part with their property, as they hold that the present arrangements will endanger the lives of the citizens. Negotiations are now making to obtain control of this property, and, if there are a few changes made in the original design, they are likely to be successful.

Difficulties have also arisen in regard to some property required in the vicinity of the Five Points. Here, however, the trouble is a question of price; but commissioners will be appointed to appraise the property in question, and their decision will, of course, be final.

It is expected that nearly 3 years will be required to complete the road, and when the difficulties to be overcome are taken into consideration, the time is by no means too long. Between 13th and 18th streets, the road must be tunneled through solid rock, and when the present tunnel through Murray Hill is reached, the entire flooring must be undermined, for the underground road will pass directly under it. The new road will be on an average 3 feet below the surface of the streets; the tracks will be 19 feet below, and the arched covering will be 2 feet in thickness throughout. This will give the interior of the tunnel a height of 14 feet.

The terminus of this new road, coming as it does within but a few feet of the new Post Office, it has been suggested that the tunnel be continued into the basement of that building. This plan has been regarded favorably by the government architect, and the foundations on the north side of the building have been constructed in accordance with it, so that at any time the connection can be made. By this plan, all mails arriving over the Hudson River, New York Central, or Albany roads can be sent direct to the Post Office by steam, and thus avoid the innumerable delays that now occur in the delivery of the mails to the wagons, and their subsequent driving through the city. If this arrangement is made, these mails can be delivered very much earlier, and the departing mails can be kept open later than at present.

PURE IRON.—It is a remarkable fact that pure iron is an article unknown. What is called iron is a metal combined or associated with other elements, which, though present only in small quantity, may, according to their number and proportion, communicate to it widely different properties—it being a simple variation in the proportion of carbon, say within the limit of about five per cent., which causes the metal to appear in the three well known states of wrought iron, steel, and cast iron, and just as the proportion of carbon increases the metal passes insensibly through these successive stages. One part in a thousand of any one of these elements will produce a decided effect on the quality of the iron, either separately or combined; hence the endless diversity in quality of the iron, steel, and pig iron met with in commerce. So far as our knowledge extends, iron is the only metal which is capable of thus acquiring such varied and useful properties by the operation of such simple and apparently trivial causes.

CURIOSITIES OF MOTION.—Is any change produced on a man by a change in the velocity of his motion round the axis of the earth? If a dweller in latitude 60 degrees were suddenly to change his residence to the equator, he would double his velocity. At latitude 60 degrees he travels round with the earth at the rate of 500 miles an hour; at the equator, 1,000 miles an hour. Again, at latitude 72 degrees the Greenland is lazily carried round 130 miles an hour; while the man at the North Pole calmly revolves once in 24 hours. Of course the motion is unfelt, because all things move together; but the change from the tropical to an arctic climate is so great that it may possibly produce physical or mental effects of which we are as yet unconscious. Of course the steering of a ship from north to south must be sensibly affected by the constant acceleration from west to east. On the long railways of Russia, too, it is said that the rails are uniformly more worn on one side than on the other, in consequence of this force.—*Boston Journal of Chemistry.*

In order to prevent the ebullition of boiling liquids a small fragment of sodium amalgam or of sodium tin, is added, when the solution is acid. The efficacy of these depends on the evolution of a small amount of hydrogen during the process.—*Dingler's Polytech. Journal.*

The brittleness of drawn wire may be obviated in a short time by subjecting it to a glowing heat or it loses this at the ordinary temperature within two to four months.—*Oesterreich Zisch.*

Prevalence of Dust.

Dust is such a thorough Paul Pry, so intrusive, so all-pervading, that there is some foundation for Night Thought Young's hypothesis of a universe of dust, except that each particular atom does not dance, as he imagined, according to its own devices, but according to law. The air on the top of Mount Blanc contains dust; but the acme and concentration of dirt is the atmosphere of London, enveloped by which it is impossible for anybody to be quite clean, outside or in. Solar light, in passing through a dark room, reveals its track by illuminating the dust floating in the air; if there were no dust, no track would be visible. Professor Tyndall, who has a keen eye for the beautiful, says that on a day of transient shadows, there was something almost magical in the rise and dissolution of the luminous beams among the scaffolding poles of the Royal Albert Hall, in London.

Dust is the cause of the lovely color of the azure firmament. In fact, sky-blue may be produced by exceedingly minute particles of any kind of matter. To the same cause are to be ascribed the effects by which distance lends enchantment to the view. Professor Tyndall makes an artificial sky more perfect than a real one. In mountainous countries hills at no great distance are rendered almost invisible by haze. It will be understood that it is not the interposition of the haze as an opaque body that renders the mountains indistinct, but that it is the light of the haze which dims and bewilders the eye, and thus weakens the definition of the objects seen through it. Artists take notice of these phenomena under the name of aerial perspective. The haze varies with the temperature and humidity of the atmosphere. At certain times and places it is almost as blue as the sky itself, but to see its color the attention must be withdrawn from the mountains and from the trees which cover them. In point of fact, the haze is a piece of more or less perfect sky; it is produced in the same manner, and is subject to the same laws as the firmament itself. We live in the sky, not under it; and the "blue arch" turns out to be a greater delusion than was imagined.—*Ex.*

INSECT LIFE IN A COAL PIT.—Of late, the miners employed at Muiredge Coal Pit, a little to the north of Buckhaven, and on the Vemyss estate, have felt considerable annoyance in consequence of large-winged insects fluttering around the flames of their lamps and often extinguishing them. A miner, named William Semble, had his attention directed to several gimlet-like holes in the wooden props that support the workings, and, on closely examining the same, discovered live moth-like insects in the cavities. They are evidently foreigners. The wood of which the props were made came from abroad, and they have been in the pit for between three and four years. The insects are, in many cases, just emerging from their birth places into active life underground, and resemble wasps, but are not altogether like those in this country.—*English paper.*

A SOLVENT FOR SHELLAC.—Dr. I. Wulz describes the following process for obtaining a neutral solution of shellac in water. The shellac is broken up and covered with a concentrated solution of carbonate of ammonia, and boiled upon the water bath until the ammoniacal smell has disappeared. More of the solution is added, and the boiling is continued until the shellac forms a coherent, sponge-like mass. The carbonate of ammonia is then expelled by further boiling, and the mass will readily dissolve by pouring boiling water upon it. A kind of soap will be found floating on the surface, which may readily be removed by straining. The solution, brought on paper, cloth, etc., dries rapidly, and leaves a thin, lustrous and adherent film of shellac behind.

EXPERIMENTS IN EXPLODING DYNAMITE.—Certain experiments recently conducted with dynamite, in France, lead to the conclusion that the condition under which this explosive is employed exercises a most important effect upon its value as an explosive agent in engineering. These experiments indicated that when the match entered deeply into the cartridge, the dynamite simply burned without explosion. It was further observed that when the match but slightly entered the cartridge, the explosion was in all respects satisfactory, and that nothing was left to be desired when the cartridge was primed with fulminating mercury.

IRRADIATION OF LIGHT.—It is a curious fact, that if the same letters of the same size precisely are painted on two boards, the one white on a black ground, and the other black on a white ground, that the white letters will appear larger, and be read at a greater distance than the black. This is owing to what is called the irradiation of light. It depends on this: That the impression made on the bottom of the eye by bright objects extends a little wider than the actual portion of the organ struck by the light, and, invading the space occupied by the darker objects, makes the brighter appear larger than they really are.

SWEET FERN FOR TANNING.—Thousands of acres of land in Michigan are covered with a growth of sweet fern, which has hitherto been supposed to be worthless, but it has been found that for tanning purposes it is unequalled, and that it yields forty per cent. extract, while hemlock yields but fourteen. It promises to be very valuable.

GOOD HEALTH.

Locality and Cause of Ague and Fever.

Intermittent fever is known to prevail (except in sporadic cases) only in districts where there is a large amount of vegetable matter in a state of decomposition, and this occurs more especially in times of drouth. In dry seasons rotting wood and other vegetation, usually innocuous because under water, is exposed to the atmosphere, which it taints with the emanations of decay. We have no evidence that any amount of decaying vegetable matter on a dry soil, though it may be very unwholesome, is especially conducive to the intermittent form of fever. Moisture is an essential factor in the causes. But all swampy lands are more or less productive of this type of fever in dry seasons. And the prevalence of intermittents in their vicinities always corresponds with the quantity of decaying organic matter.

Another source of the disease not often thought of, and seldom alluded to in medical books is rotting wood and other decaying vegetable matter in the cellars and door-yards of houses which are situated in damp places. If wood, or any other decaying vegetable matter, and water are allowed to accumulate in the immediate vicinity of houses or stables, the water will become stagnant, and malarial gases will be generated, causing intermittent fever in the occupants of the houses, and a more obscure, though analogous affection in the domestic animals.

The malaria of swamps and other places is sometimes carried, mostly in a given direction, by the prevailing winds or breezes, so that persons residing a mile or two distant, and in high altitudes and salubrious localities, are more subject to intermittent fever than are those who reside in their immediate vicinity. It is, therefore, of much importance in the neighborhood of malarious places, or districts subject to this disease, to ascertain the prevailing atmospheric currents before constructing buildings, either for human beings or animals.

It may be an interesting question with many who are obliged to reside in malarious localities, at what hours of the day or night is the atmosphere best or worst? There can be no doubt, I think, that early and late in the day are the worst times to be exposed. From day-dawn until a little after sunrise (and still later in cloudy or damp weather), and from sunset until a little after dark, the air is damper, heavier and more loaded with malarial emanations, which the sunshine and heat of the day dissipate and destroy, and which the colder air of the night condenses and keeps down to the surface of the earth. Those who live near any source of pestilential miasma would do well, as a preventative measure, to avoid exposure as much as possible during the hours above indicated.

But it may be said that persons must breathe such air as surrounds them; that the malaria will pervade the indoor as well as the outdoor atmosphere; and that, therefore, nothing is gained by remaining within. The objection is well taken; but by keeping the air of the apartments occupied during the above hours warm and dry with a brisk fire (even though the time be July or August and the thermometer at fever heat), the objection will be obviated.

Treatment.

The main point and the universal rule in medicating all cases is: to keep the temperature and circulation as nearly balanced as possible during all stages of the paroxysm. On the first appearance of the symptoms of the cold stage, the patient should have hot fomentations applied to the abdomen, bottles of warm water or something equivalent to the sides and armpits, and warm applications to the feet. By these means the duration of the cold stage will be lessened, the severity of the hot stage diminished, and the entire paroxysm abbreviated and rendered milder.—*Phrenological Journal.*

AN EFFECT OF CHLOROFORM.—A singular effect which chloroform has upon some persons is its dulling the brain and destroying the intellectual faculties for months after it has been taken, and after physical health has been restored. One gentleman of active mind, a ready thinker and fluent writer, might be named who has been under the influence of chloroform three or four times for surgical purposes, and each time his intellect has been torpid for months, though his surgical recovery was rapid. *Scientific American.*

A REMEDY FOR DYSENTERY.—The following simple remedy has been known to cure the most obstinate and malignant forms of dysentery, when all the ordinary methods were ineffectual. Take hot water, one-fourth of a pint; vinegar, half pint; mix; then continue to add common salt as long as it will be dissolved, stirring and irritating it freely and frequently.

MORE men grow old from having nothing to do, than from over-work. The running machine will keep bright for years—the idle machine will soon rust out.

Quack Doctors.

From every section of the country we are constantly receiving intelligence of the most foul murders having been committed by men calling themselves doctors. There is nothing about which the great mass of the people are so ignorant as the human system, and the means necessary to preserve it in a state of health, or relieve it from disease.

Knowing this, unprincipled men, and women too, who have become so depraved and dead to the instincts of humanity that they are willing to jeopardize the lives of fellow-beings that they may obtain money, put forth their signs as doctors, flood the country with circulars and advertisements filled with accounts of their unprecedented skill, and the work of death commences. A considerable portion of the people have educated themselves that everything they see in print is true. They read these quack advertisements, which are gotten up to order by uninterested parties (for be it known that quacks, as a rule, cannot write) and are at once struck dumb with astonishment to think that such wonderful physicians have by chance been thrown within their reach. They rush to these quacks by the thousand, and are assured that their cases, though very critical, can be cured only by careful treatment by them. The prices charged are fabulous, and the poor victims rob their families of the necessities of life, and mortgage their property to raise money to pay the impostors. In most cases they are given harmless compounds, and are fed on hope until their money is exhausted; then they are turned away—kicked into the streets, with the information that their cases are beyond remedy. The more adventurous charlatans experiment with strong drugs, and knowing nothing of their effects upon the human body, accidental deaths are frequently the result. Numerous instances have occurred where good-paying patients, after being copiously bled of their finances, have suddenly gone to their long home.—*Etc.*

How the English Bring up Children.

The English bring up their children very differently from the manner in which we bring up ours. They have an abundance of outdoor air every day when it is possible. The nursery maids are expected to take all the children out airing every day, even the infants. This custom is becoming more prevalent in this country, and should be pursued wherever it is practicable. Infants should be early accustomed to the open air. We confine them too much and heat them too much for a vigorous growth. One of the finest features of the London parks is said to be crowds of nursery maids with their groups of healthy children. It is so with the promenades of our large cities to a great extent, but is less common in our country towns than it should be.

In consequence of their training, English girls acquire the habit of walking that accompanies them through life, and gives them a healthier middle life than our women enjoy. They are not fatigued with a walk of five miles, and are not ashamed to wear, when walking, thick soled shoes, fitted for the dampness they must encounter. Half of the consumptive feebleness of our girls result from the thin shoes they wear, and the cold feet they must necessarily have. English children especially girls, are kept in the nursery and excluded from fashionable society and all the frivolities of dress, at the age when our girls are in the heat of flirtation and are thinking of nothing but fashionable life.—*Ohio Farmer.*

REMEDIAL MUD.—"Grace Greenwood" has been astonishing the people "down East" by the accounts of the mud-baths which she has seen or heard of during her late travels on the Pacific coast. Mud-baths are said to be a popular remedy with certain uncivilized copper-colored savages. The barbarous beings, when sick are said to burrow in the mud, very much as certain nameless scavenger quadrupeds do in civilized countries, of a hot day, whenever they can find a puddle large enough. Some of our contemporaries seem to think that a prescription that is good for pigs is for that very reason bad for humans. But we beg leave to differ. A cleansing, or cooling, or other remedial process may be equally applicable whether the patient be hog or the "higher animal." At first thought there may be something vividly suggestive of dirtiness in the idea of mud-bathing. But we are prepared to show that mudopathy is just the cleanest treatment in existence. The reader is respectfully requested not to confound the idea of mud-medication with mud-spattering. No one would like to have mud thrown into his face nor on his clothes; and he would resent a similar application of water. Yet, intrinsically, nothing is cleaner than earth, nothing purer than water; and the admixture of the two constitutes mud.—*Science of Health.*

BUTTERMILK is an aid to the digestion of any food taken with it; and by many hygienists is regarded as an excellent substitute for fruit in Winter, and a prevention of Spring sickness. It is especially recommended to invalids who suffer from indigestion—drink it at meal times.



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SAN FRANCISCO:

Saturday, Nov. 16, 1872.

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FREE SUBSCRIPTION till the First of January, 1873, from the time of payment, is offered to all new subscribers of this paper from this date. Our agents may make a note of this, too.

ONE SAMPLE COPY of this paper will be sent free to any person's address recommended to us as likely to subscribe, by any one who will inclose a one cent stamp for postage.

Wheat Freights to Liverpool.

At a time when it has become a grave question whether the farmer is to continue to grow wheat year after year for the principal benefit of the grain buyer and the grain trafficker, it will be of interest to review this question of freight to see

What we Have Paid in the Past, Compare it with what we now pay, and see what is losing, and what has been lost to the farmers and to the business community, through the want of a mercantile marine of our own and through the want of a manufacturing population who would need the wheat and flour that we are now necessitated to seek a market for at a distance of 14,000 miles. Our table shows the average freight rate every month during which ships have been engaged for Liverpool since 1861, the average price of good wheat for the same months, and the telegraphic quotations of wheat in Liverpool since 1867. From this it will be seen that they have risen continuously for the last twelve years. In 1861, freights were quoted at two pounds and ten shillings (£2 10s.) in January. But we were then

Only Beginning Our Exports

To England, and at the close of that year in Dec. to \$1.18 and \$1.19, about one-third of the rate which they attained last month. In 1862,

there was no exporting doing the first half of the year, and during the second there was only 1 cargo of 41,560 centals. There were not many ships, and freights consequently ruled higher from £2 5s. to £2 10s. The export in 1863 was larger, and ships were in demand, consequently freights rose from £2 5s. in the first half of that year to £2 15s. and £3 toward its close. In 1864, ships to Liverpool offered at £2 15s. and £2 17s. 6d. in the two first months of the year, but nothing was exported. This had the effect of keeping away vessels from our ports and in 1865, the sole cargo sent to Liverpool had to pay £3 5s. During all this time good wheat brought from \$1.35 to \$2, averaging \$1.75 but now it rose as high as

Six Dollars per Cental

In 1866 there was no wheat shipped for the first half of the year, and tonnage did not come very freely forward in consequence, so that freights starting from £3 per ton, after ruinous fluctuations, went up to £3 10s. in December. Next year when there was three times the quantity of wheat exported to Liverpool freights were firm, beginning at £3 and reaching £3 15s. during the first shipments; during the latter part of the year, however, they were weak and fell to £2 7s. 6d. and £2 10s. The subsequent year they kept up pretty well, but in 1869 and 1870, though there was a larger quantity than ever before exported, freights were, owing to the large fleets visiting our ports, weak, falling as low as £2 2s. 6d., and not in the majority of instances rising above £2 7s. 6d. In 1871, they reached a lower level still; the amount for export was only about a fourth of that of the previous year, and in the month of September not more than £1 15s. was offered. This contributed to keep away vessels from our port, the consequence was that wheat buyers were enabled to

Charter Cheap

Previous to arrival, and one firm in this city we are informed, foreseeing the immense quantity of wheat that we should have for export, chartered nearly all the available ones at cheap rates, so that those reaching this city disengaged were enabled to ask high prices. Ship owners abroad not being acquainted with our wants, made other engagements, for those not already taken up previous to arrival, hence a difficulty in obtaining a sufficiency of free tonnage when required.

Periods of High Freight Rates

Have been as a rule during the six months beginning in May and ending in October. In nine years out of eleven this has been the case, there having been only one cargo during 1865. The two exceptional years were affected by exceptional circumstances, there being no export in the beginning of 1866, ship owners made other engagements, consequently there was a rise towards the end of that year, which continued till the beginning of the next. It may therefore be taken as a rule that from October to December the fall has been in the majority of instances from 10 to 20 per cent. Last year was an exception, as towards its close parties who had watched the crops saw that the coming one would be the briskest in freights that had ever been seen in California. But this year is conforming to the usual rule, prices of freights in port having already begun to take a downward tendency, which they are liable to keep to the end of the year. July, August and September have been, in the majority of instances, the periods in which the highest prices for freights have been paid. The last quarter of the year has been that principally in which the lowest prices for freights have prevailed. The close connection between the fluctuation in

Prices and Freights

Has been observed nearly all through the last decade. When freights have been high prices have been low, and vice versa. The only exceptions have occurred when contemporaneously with a rise in the price of freights, a corresponding rise has occurred in the Liverpool wheat market. During the last four months for instance, good shipping wheat rose from \$1.52½ in July to \$1.62½ in September, because the price in Liverpool also rose. The rise here, however, bore no proportion to that in the Liverpool market, because freight engagements in this port had been made at prices altogether without precedent. In other respects, the price of wheat in this market is almost entirely governed by the rates prevailing in Liverpool. Two elements then control the price of wheat in this market, the freight rates prevailing in this port, and the price of wheat in Liverpool. During the present season the farmers have suffered from a largely

Fictitious Scale of Freight Rates,

For the vast majority of the ships carrying wheat cargoes from this port have been chartered previous to arrival at rates varying from £2 10s. to £4, averaging £3 5s. That is, these are the rates that have been reported, though there is every reason to suppose that they are largely in advance of the rates really paid. Nearly all have been made by one prominent grain house in this city whose profits on freights this year cannot fail to be enormous. It is nearly impossible to come at rates really paid, and agents for ships are unwilling to give them. In fact they have refused them to us. There exists no reason why they should do so if these engagements had not been made at rates ridiculously low in comparison with those effected in this port. The rates when averaged fairly cannot, we feel confident, have exceeded £3 for the whole season. By comparing with these reported here and on which the price of wheat

in the local market has been based, it will be seen

What Profits Have Been Made

By interested parties here. The average rate of tonnage for the last four months for charters effected in this port has been £4 15s., and the difference between this and that really paid for ships chartered previous to arrival, has been £1 15s. per ton, or 42 cents per cental. This has been the average profit of those who received the principal part of the tonnage bound to our port for the last six or eight months, on every cental of wheat exported this harvest year. From the 1st of July to the 3d of November, the exports have amounted to 3,355,318 centals, which at 42 cents each gives a profit of \$1,409,235.56, at least one million dollars of which must have found its way into the pockets of a single firm. If this come out of the pockets of one speculator and went into those of another we would not mind. And there is every reason to fear that a proportionally large sum will be extracted from the pockets of the farmers for the balance of the season. If this should be the case and should the amount of wheat available for export equal that which would be intimidated by the estimates of some of our prominent men, the loss to the farmers and the gain to the speculators will not be less than \$5,888,000. At nineteen bushels an acre, the loss to the farmer would be \$7.98, or nearly \$8 per acre, and on a farm of 1,000 acres, producing such an average crop, the loss would be almost eight thousand dollars. It is high time then that

Farmers Should Awake

To the situation. If taxes of this amount were levied on them, or attempted to be levied they would rise in open rebellion, and yet they tamely submit to this imposition, or make a few feeble and ineffectual protests, and there the matter ends. It will be seen from our table that the average of freights for the eleven years ending December 1871, was £2 10s. 8d. only. If the farmers of the State were united on the matter, they could freight ships or build them, and the cost of carrying wheat to Liverpool would not exceed £2 10s. With wheat for export equalling fourteen million centals, they would then save in one season, the sum of \$7,560,000, or 54 cents per cental, or \$10,260 on every farm of 1,000 acres.

Freights May be Expected to Fall

During the balance of the harvest year. With the vessels which have already loaded cargoes for England and those on the way now known to be engaged we have 177 vessels. Now calculating by the average cargoes which have already been loaded, there would, supposing 14,000,000 centals to be available for exportation, be required 410 vessels. So that we require arrivals of 164 more besides those already on the way known to be chartered for wheat in order to carry away the largest possible margin of export. Those at present available will carry away 10,151,658 centals and there being now on the way to this port altogether 187 ships. This ensures us a far more satisfactory prospect for the balance of the year. In this connection we may mention a circumstance that has come under our notice during the last fortnight which shows how completely are the

Farmers at the Mercy of the Grain Speculators.

A merchant in Visalia, whose interests are intimately connected with those of the farmers of his section desired to assist them in obtaining better prices for their wheat, and in order to do so, he contracted at reasonable rates for a ship with one of our largest shipping houses in this city. The house in question generally bears a good name, but unfortunately the merchant only made a verbal contract with it. He was soon after approached by an agent of Mr. Monopoly or a party in his interest who endeavored to obtain the ship from him. But he merchant was firm. This agent then says to him, "I suppose you expect to load the ship." The reply was, "Yes, certainly I do, I have engaged it, and shall send it." Whereon Monopoly's representative rejoined, "Let me tell you, (or mark my words) you won't send that ship." Within forty-eight hours the merchant received a notification from the house that they could not possibly let him have the ship.

We can give the names of the parties to any of our readers who may desire to have them. We have been accused of bringing charges on freight rings and grain rings needlessly, but we think that a perusal of our article, and a knowledge of such means as here shown to be made use of to keep all the available tonnage mainly in the hands of one house, will convince our readers that our denunciation of the unworthy means made use of to rob the farmers of this State, have been both timely and needed.

Average Freight Rates and Prices of Wheat in San Francisco for the last 12 years, and average Telegraphic Rates from Liverpool.

YEAR.	WHEAT IN LIVERPOOL.	FREIGHT RATE.	WHEAT IN S. F.
1861	\$2 35 8 2-5d	\$1 61
1862	\$2 10s	\$1 87½
1863	\$2 13s 6d	\$1 55
1864	\$2 16s 3d	\$2 55
1865	\$2 5s	\$2 25
1866	\$2 16s 8d	\$1 79
1867	\$2 19s 17½d	\$2 08
1868	\$2 16s 3d	\$2 12
1869	\$2 11s 6½d	\$1 74
1870	\$2 11s 2½d	\$1 85
1871	\$2 18s 9½d	\$2 42
1872 Jan. to July.	\$3 1s 5½d	\$2 03½
1872 July to Nov.	\$4 15s +	\$1 66½

* Rates as reported. + Nominal.

Average Rates, per Cental in Federal Coin, of Freight, of Telegraphic Wheat Rates from Liverpool, and of Prices in San Francisco for the last 12 years.

	WHEAT IN LIVERPOOL.	FREIGHT RATE.	WHEAT IN S. F.
Jan. 1861 to July, 1872.	60½ cents.	\$1 90½
Jan. 1861 to Nov., 1872.	69 cents.	\$1 83½
Jan. 1861 to July, 1872.	\$2 91½	\$1 90
Jan. 1861 to Nov., 1872.	\$2 90½	\$1 87½

YEAR.	WHEAT IN LIVERPOOL.	FREIGHTS REPORTED.	S. F. Prices of Wheat.
JANUARY	1861 2 10 8d	1861 2 10 8d	1861 1 61
FEBRUARY	1861 2 10 8d	1861 2 10 8d	1861 1 61
MARCH	1861 2 10 8d	1861 2 10 8d	1861 1 61
APRIL	1861 2 10 8d	1861 2 10 8d	1861 1 61
MAY	1861 2 10 8d	1861 2 10 8d	1861 1 61
JUNE	1861 2 10 8d	1861 2 10 8d	1861 1 61
JULY	1861 2 10 8d	1861 2 10 8d	1861 1 61
AUGUST	1861 2 10 8d	1861 2 10 8d	1861 1 61
SEPTEMBER	1861 2 10 8d	1861 2 10 8d	1861 1 61
OCTOBER	1861 2 10 8d	1861 2 10 8d	1861 1 61
NOVEMBER	1861 2 10 8d	1861 2 10 8d	1861 1 61
DECEMBER	1861 2 10 8d	1861 2 10 8d	1861 1 61

FATTENING SHEEP.—An Ohio farmer buys poor sheep at a very low figure and fattens them by feeding unground barley and salt, all they will eat. He says he has tried oil cake and turnips, beans and turnips, ground corn, oats and wheat, and it is his opinion that his sheep fatten fastest on barley and salt.

PEAS are of Egyptian origin.

Table of Freights, San Francisco Prices of Wheat, and Telegraphic Quotations of Wheat in Liverpool from January, 1861, to October, 1872, inclusive.

The Great Fire in Boston.

The metropolis of New England has just suffered a desolation from fire, that if not equal in extent to the great Chicago fire, has consumed the very business heart of the city, and with it more staple and valuable merchandise than could have been encircled within limits of the same extent probably in any city in the Union.

The blackened ruins cover 60 acres in extent, whilst the losses are estimated to be between two hundred millions and three hundred millions of dollars; thus exceeding the losses by the Chicago fire. It is a sad calamity, and even though the numbers of people in the lower and middle walks of life that have been rendered houseless, and desolate in prospect and purse, just as the stern northeastern winter is setting in, may not be as great as at Chicago a year ago, still enough are sufferers to command our sympathies and material aid.

With many thousand hearts it turns the usual New England holiday into a very sorrowful Thanksgiving; and many a festive board, that but for this event would have played an important part in the scenes of the in-gathering of happy households, may now be less bountifully supplied, and the re-union of kindred deferred to a time further removed from the present heart pains incident to this dire calamity.

Effects of Thunder Storms on Milk, Fish, Etc., Explained by Dr. Carr.

At a meeting of the Oakland Farming Club, Oct. 4, a written query was read "From one who is interested in the discussions of the Club," asking light on the subject of a printed paragraph which appeared in the Gold Hill News, Nevada, Sept. 20th. In the paragraph, a fish-dealer reports the singular effects of thunder on fish in the market, saying "that after a few heavy thunder-claps they began to swell up and in a few hours began to putrify. Not only fish, but all kinds of meat were affected by a thunder-storm."

Mr. Pryal had noticed that he could never catch any fish with hook and line soon after a thunder-storm, but never before knew the reason.

The Dr. says that sudden electrical disturbances as in a thunder storm, or such as may be produced by our electrical batteries, will destroy the equilibrium of the particles of such complex organic substances as exist in animal fluids, causing them to break up into simpler compounds or in other words, to decay. Decay or decomposition is the falling apart of the complex particles of a substance of this kind and their uniting in a more simple manner. A pyramid of cannon balls by a sudden jar may tumble down, and the balls unite in simple groups. So the particles or molecules of the albumen and fibrine in the juice of flesh or fish, and the casein in milk, by the electric shock, undergo decay. The blood and flesh of animals killed by lightning or the electrical battery will decay more readily than when the animal dies from more natural causes. Fresh milk is often known to sour during or shortly after a thunder storm, the casein undergoing incipient decay which changes the sugar in the milk to lactic acid.

In a similar way the vitality of plants may be destroyed. A feeble electrical current, however, will sometimes promote vegetable growth, but the times and conditions of such favorable action are not well understood.

Value of Durham Stock.

As showing the estimation in which improved stock is held in England, where the greatest care has been taken for more than two centuries in the growing of fine cattle, we instance a recent sale of Short-horns at Turne's Hill, Staffordshire, Eng., where, at a large sale of prize cattle, the celebrated pet bull of Mr. Isaac Downing sold for 1,650 guineas (\$8,316) in gold; the highest price ever paid for any one animal of this breed, in all the long record of their history. His pet Short-horn cow, also, brought 900 guineas (\$4,536).

Is it any wonder after this, that our cattle-growers and dairymen should invest a few hundred dollars annually in procuring the very best of this and other improved breeds of stock? There are many who have been waiting for years for these improved breeds of animals to become lower in price before they buy; but present appearance, both in England and America, would indicate no immediate falling off in the value of blooded stock; the fact is, the demand is greater than the supply.

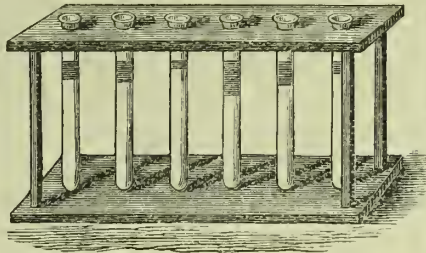
The Lactometer.

The engravings here presented are gotten up by us for the purpose of illustrating an article which we copy from the *American Agriculturist*. The instrument described is known as the Lactometer, and is used for determining the quality and value of milk for the production of butter, and should be used by every farmer who owns more than one cow.

Where there are but two it becomes a matter of interest and curiosity to know which one is the better, and where there are a dozen, the probability is that there will be found one amongst the lot which is not worth keeping, and she can not easily be detected without experimenting on her milk with the lactometer.

One of the first requisites to an improvement in the dairy stock is a simple means of detecting those which are unprofitable to keep, and by getting rid of them as soon as possible,

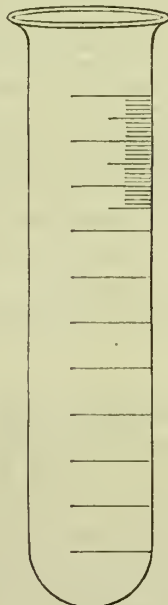
Fig. I



preventing the perpetuation of poor stock. It is only by breeding from our best cows, by means of bulls descended from dams which excel in the quality of their milk, that we can hope to improve our dairy stock; and that our stock needs and is susceptible of vast improvement, is plain to those who know how poor is the average product of our cows.

We very rarely think of the fact that the average yield of butter in the United States is only a quarter of a pound per cow per day, or of milk only four quarts. The discovery of

Fig. II.



these poor cows, by which the average is so much reduced, and their separation from our herds, depend on the use of some such instrument as is here proposed. It is simply and easily made. (Fig. 1.) A frame, consisting of an upper and a lower platform, with supporting columns at the corners is made; holes to receive the glass tubes are bored through the upper platform, and the tubes are common glass test-tubes, which may be procured from or by any druggist. The tubes should be divided by marks made with a common file into ten spaces of equal size. The spaces or degrees may be one inch in length, in which case the tubes should be eleven inches long; or the divisions may be half an inch apart, in which case the tube should be six inches in length. Fig. 2 shows the tube graduated into spaces.

When filled to the uttermost mark with milk, free from air-bubbles or foam, the tubes are suspended in the frame, and are to be kept undisturbed for a determined length of time, and the amount of cream which has risen is then noted, when it may remain longer to note any further rise of cream, or the separation of the whey from the curd, if it is desired to test the amount of whey or water or solid matter or curd in the milk. Those lactometers which test the quality of milk by its specific gravity

are often incorrect and fallacious, as the richest milk is the lightest specific gravity, and is not to be distinguished by such a test from watered milks.

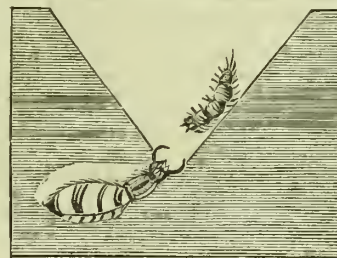
The exact percentage of cream may be ascertained by dividing the upper spaces into tenths. Each tenth would represent one-hundredth part or one-per cent. of the whole milk. Thus, if the cream occupies five of the small spaces, there is five per cent.; if one large space, there is ten per cent.; if one large space and two small ones, there would be twelve per cent.; two large spaces would give twenty per cent. of cream.

As one quart of pure cream will make a pound of butter, the value of each cow as a butter-producer is readily ascertained, for if she should yield ten quarts of milk, of which ten per cent. or one-tenth is cream, she may be expected to produce one pound of butter per day, and so on.

We would remark in connection with the foregoing, that Mr. R. G. Sneath, of San Mateo Co., an owner of some of the celebrated Jersey stock, so noted for their yield of cream, desiring to test the relative richness of their milk, and feeling the want of just such an instrument as we have described, and not being able to procure one ready-made, devised a very good substitute by using glass vials of convenient length and form, graduating them from a joiner's rule with a common file; and as it is a subject of interest and even importance, we are promised the result of his investigations.

The Ant Lion.

In a late number of the *American Naturalist*, Mr. J. H. Emerton describes at length the peculiar habits and structure of the Ant Lion (*Myrmeleo immaculatus*). It appears that this ravenous little insect is endowed by nature with superior intelligence, and displays great skill and cunning in the entrapping and secur-



THE ANT LION.

ing of its prey. Having determined upon a suitable site, generally a clear sandy space under the shade of some shrub or boulder, it begins the construction of a miniature pitfall by first thrusting its long jaws and flat head underneath the grains of sand, and then by a sudden upward jerk tossing them several inches beyond the edge of the pit. This operation is repeated until a funnel-shaped hole is excavated, as shown in the cut, the sides of which are as steep as the shifting nature of the sand will allow.

When completed, the ingenious little builder conceals his body at the bottom leaving only the extended jaws exposed. Here he awaits patiently until the unconscious victim, generally some smaller insect, approaches the edge of the ambuscade, when the disturbance of the sand above warns the watcher below, and he begins to toss up the earth from beneath, causing the sand on the shelving sides to slide down toward the centre, bearing with it the prey to within reach of the extended jaws. The lower sides of these are provided with tubular channels, that serve as ducts to convey the blood of the victim to the mouth of the captor.

Should the insect escape the first attack, and attempt with all haste to clamber up the sides of the pitfall, the ant lion immediately throws up a shower of sand and brings its victim down again. After sucking the body dry, the carcass is tossed beyond the limits of the pit, which is at once repaired, and made ready for the approach of a second visitor.

SEED SOWER AND CULTIVATOR.—E. R. Bush, at Bigg's Station, Butte Co., is the agent for the sale of the celebrated Van Brunt Seed Sower and Cultivator, extensively used in most of the Western States and giving perfect satisfaction. With these machines, it is said, the farmer can sow in all kinds of weather, and place the grain on the ground evenly and cover the same perfectly. It is a machine doubtless well worthy a trial.

Subsoil Plowing.

The importance of a deep and mellow soil in which the roots of grains, plants and trees can fully and easily permeate in search of their necessary food, is admitted by almost all scientific agriculturists of the present day. There are a few we admit, who would recommend the careful culture of surface roots to growing trees and plants, but we are found among those who would have roots penetrate as deeply into the soil as they can be induced to grow.

Hence the importance of subsoiling; and if this be done, an equal importance attends the procuring of the best instrument for its accomplishment, for at best, the turning of the soil to a depth double that of ordinary plowing is no trifling matter; in this connection, therefore, we would call attention to the merits of Myers & Gummow's gang subsoil plows manufactured at Marysville.

To rightly understand the working of this plow, a short description of the implement may be necessary. It is all iron but the tongue and whiffletree; is mounted on two wheels with an eccentric axle, which enables the plow or plows to run on a level at all times, whether in or out of the furrow. The leverage, by which the plows are raised or lowered, is very simple, acting entirely on the axletree, and can be managed by a ten-year old boy. The pattern of the plow is a heavy goose-neck beam, $3\frac{1}{2}$ inches wide by 1 inch thick. To this first beam, which holds the main or landside plow, is fastened by a square frame of iron of equal size, the second beam, which holds either a second plow of equal size, or the subsoiler, just as the plowman chooses.

Below this second beam, a heavy brace is sprung, through which the standard of the subsoiler or the ordinary plow is placed, which is held to any required depth by a ratchet, which plays in a series of slots cut in the standard. If the gang is to be used as a subsoiler, the regular plow gives place to the one used for cutting the second depth. After one furrow has been plowed, the subsoiler is dropped by the ratchet into place, say six inches below the main plow. It then stands a furrow's width ahead of the other, directly behind the feet of the horse, which treads in the furrow made before.

When in motion, the subsoiler cuts the previous furrow six inches deeper, turns it out on top of the furrow cut previously, while the main plow following cuts a furrow and throws it down in the trough made by the subsoiler. Thus the plow is continually cutting one new furrow and one second furrow, which is laid on top of the old soil.

Another great advantage is, that the animals hauling the plow, or those on the off side, have a hard furrow to walk in all of the time, something that no subsoil plow has before been able to give them.

Silk Growing at Los Angeles.

A very successful growth of silkworms has been the result of the effort of Mr. Romulus Bonhomme of Los Angeles, the last feeding season. He commenced feeding the French-yellow-variety on the 15th of April, and the worms completed their cocoons in 36 to 40 days. His total loss of worms was less even than one per cent. of the number hatched.

From four ounces of eggs he obtained 445 pounds of cocoons; and as his object was the production of eggs—of which he has now on hand 400 ounces—his present lot of cocoons are all perforated. His eggs, which are in excellent condition, he holds for sale at \$6 per ounce. The mulberry used is wholly of the two varieties, Alba and Moretta; he has also the Philippine, nearly equal to the Alba, and the Multicaulis; the latter, however, he has abandoned as nearly worthless for feeding.

Has 16,000 trees of the Alba and Moretta, four and some of them five years old. He sets them in orchard form 16 feet apart; has set some 8 feet apart but finds them too close, the leaves between trees that crowd each other are not healthy for worms. During the 1st and 2d stages of growth, feeds the worms from young trees three times a day; but during the 3d and 4th stages from older trees and leaves.

During 1st, 2d and 3d stages feeds three times a day; during the 4th stage 5 times a day and twice at night. The worms from each ounce of eggs require to perfect their entire growth, 1,200 pounds of leaves; whilst in Italy and France the same quantity of worms require from 1,800 to 2,000 pounds. Mr B. is satisfied that the climate of Los Angeles, for the successful culture of the silk worm is nowhere surpassed. He will impart any information desired.



The Evening Hearthstone.

Gladly now we gather round it,
For the toiling day is done,
And the gray and solemn twilight
Follows down the golden sun.
Shadows lengthen on the pavement,
Stalk like giants through the gloom,
Wander past the dusky casement,
Creep around the fire-lit room.
Draw the curtains, close the shutters,
Place the slippers by the fire;
Though the rude wind loudly mutters,
What care we for windsprites' ire?

What care we for onward seeming—
Fickle fortune's frown or smile—
If around us love is beaming?
Love can human love beguile!
'Neath the cottage roof and palace,
From the peasant to the king,
All are quaffing from life's chalice
Bubbles that enchantment bring;
Grates the glowing music flowing
From the lips we love the best;
Oh the joy, the bliss, of knowing
There are hearts whereon to rest!

Hearts that throb with eager gladness,
Hearts that echo to our own,
While grim care and haunting sadness
Mingle ne'er in look or tone.
Care may tread the halls of daylight,
Sadness haunt the midnight hour,
But the weird and watching twilight
Brings the glowing hearthstone's dower.
Altar of our holiest feelings,
Childhood's well-remembered shrine,
Spirit yearnings, soul revealings,
Wreaths immortal round thee twine.

Only a Pebble.

[Written for the Press.]

The poor, despised pebble! We honor the mountain at whose foot we found it; we carve and chisel the marble block which the blast has forced from its hiding place on the mountain side—the diamond that the streamlet washes to the surface we polish and set in the crowns of royalty—but there lies the pebble, their "poor relation," unnoticed and unknown. Did you ever think how important a part the pebble has played in the economy of the Universe? Poor, insignificant little fellow, we think him despised and rejected by even a scratched hen. But however humble his present position, his tribe has received high honors in its day and has a record it need not blush for.

The pebble has descended from the kingly race of rocks. Long years since—we know not how long ago—for history records only the deeds of perishing men—a noble rock lay firmly grounded near the summit of a lofty mountain. So high was his head above the green valleys below that it was white with ever-renewed snows. One morning he was rudely awakened and pitched from his majestic throne by an earthquake. He felt himself sliding and rolling down over dizzy heights and icy cliffs, each moment going faster and faster until at the foot of the mountain he struck with a stunning blow against a brother rock. Recovering from the shock he found himself broken into a thousand pieces of all sizes, from a small meeting-house to a hickory nut. He had scarcely time to collect his thoughts before the river, at whose bank he had arrived, was swollen to a torrent and began rudely and unceremoniously pushing and rolling his lesser fragments down stream.

As they rattle against one another their sharp corners are worn off and their sides polished by the constant abrasion. They journey on for miles, sometimes stopping for long rests of centuries in the mud and sand, only to be aroused and hurried forward by the restless waters. They occasionally overtake others of the same race and kindred but of different colors and complexions. Some are white and nearly transparent, others are green, purple, blue and of every shade and hue imaginable. All smoothed and polished by their long journey and rude jostling. They pass huge boulders of granite so heavy that the flood can hardly move them; they mingle with little fragments of shale that can scarcely keep from getting lost in the sand.

But they all claimed descent from the royal race of rocks, that stout-hearted race that fire and flood could never conquer in the early days of mother earth. And now here they lie before us on the beach the lashing waves washing their faces into renewed cheerfulness and beauty at every surge. But should you ask, what has a pebble ever done? Like many other equally obscure and insignificant individuals, the pebble has had a duty to perform and nobly has he done it. Could he speak he might say—"war has carried me into slavery and sent me on messages of death and pain. Ages before the needle-gun and mitrailleuse, before even the spear and cross-bow, your rude and barbarous

ancestors threw me from the sling. Strong men have groaned in the hour of battle when I have struck them. The "smooth stones" which the brave little David chose to kill Goliath with were my consins; kings and mighty men have I slain, thrown from a sling. I might say, I have conquered a world.

But peace has claimed me, too, and commerce is indebted to me largely. The sailor has used me, even carried me thousands of miles to hold steady the keel of his vessel and make her obey the helm.

For miles around the city of New Orleans, where the great father of waters drags sluggishly along over sand and mud, you cannot find a pebble. Not one. And yet as you ride in carriage or omnibus along the streets of the city you are surprised and annoyed at the constant thump, thump, over the rough pavement of cobble-stones as big as your head. Where did they come from? Oh! King Cotton who ruled the country some years ago, sent for them and they had to come. From the "Graute State" and the "Old Bay State" they came holding steady the empty schooner and ship which was to carry back the bulging cotton bales.

This using a pebble for ballast is something not so very recent as we might suppose. Many years ago, so I have somewhere read, there was a little village near the sea shore in Greece where the villagers kept many hives of bees. The bees in pursuit of honey frequently had to pass around a high rock which jutted down to the sea, to reach a rich flowery valley beyond. So strong were the breezes which swept around the promontory that the little insects would have been blown far out to sea and drowned, had they not taken in ballast just as the merchantmen did on their voyage from Boston to New Orleans.

A Greek philosopher who was strolling upon the beach saw the sagacious little insects alight on the ground and select each a pebble for a life-preserver. And when they passed the "Cape of Storms" the ballast was dropped and they entered safely the flowery vale. Did the bee learn from man or has he been man's teacher in the art of navigating the sea and air? And, now, lastly let me tell you how a pebble found its way into literature and, if it did not find a tongue for itself, saved an eloquent one from obscurity.

Long years ago a young orator of Greece sauntered down to the sea shore to declaim his speech, that his voice might gain power and depth, amid the thunder of the lashing waves. The barrier to his success had ever been a lisping tongue. A little pebble glistening in the sunbeam as the water retarded attracts his attention. He raises the tiny rock and places it in his mouth. It is but the pastime of an unthinking child, but speaking with the pebble in his mouth he finds his impediment removed. The lips so eloquent, lisp no longer. The last defect of Nature is supplied and Demosthenes is saved to the centuries by a pebble!

DUNCAN G. INGRAHAM.

Mother and Son.

The idea has often suggested itself to me that mothers might save themselves an infinite amount of vexatious annoyance on account of wayward and reckless sons, if they rightly apprehended and appreciated the natural relation between mother and son. Too few, alas! among those who rejoice in the sacred name of mother, realize the power and influence they might exert, in molding and rightly forming the character of these precious jewels which have been committed to their care, and who may, if judiciously trained and educated, some day reward their vigilance, by filling important and valuable positions in social and public life.

All of us who have given the subject any thought, know that there exists naturally, a stronger affinity, between father and daughter, and mother and son, than between father and son, etc. The daughter lavishes caresses and tokens of childish fondness upon the loving father, while the boy almost invariably goes to mother for affection and favors. And if the mother is what every mother should be, she will from earliest infancy, so direct, guide and educate his affectional and intellectual impulses, that, with ordinary mental capacity, he will become a refined, intelligent, good and noble man, and an earnest worker in the great field of useful activity.

Observation, history, and even phrenology teach that all great and good men, must be the product of good and noble mothers, whose delight consists, not so much in adorning and decorating the person, but in cultivating the mind and heart.

The first step in the formation of a child's character, should be to teach them to love us by being eminently worthy of their love. We need not indulge all their childish caprices—they could not respect us if we did—but, let them fully understand that whatever is necessary for their comfort and rational enjoyment, it is our greatest pleasure to bestow. All innocent amusements should be permitted and encouraged at proper times and places; and a bountiful supply of entertaining and

useful reading, suited to their age and taste, should be furnished, if we wish them to be home loving and studious.

Interesting stories containing a "moral," related before they go to rest, will be pleasant reminders of a mother's cherished memory, when her lips shall have been sealed by the slumber that knows no waking; and as life passes on and the youth grows up to manhood, the influence of a good and noble mother's precepts and example, will be a "beacon light" to lead his steps in virtue's pathway—a cloud by day and a pillar of fire by night to preserve from the snares and temptations that surround him on every hand. Let us then who have sons to educate see to it that their record shall be good and glorious.

Give a Little.

There is nothing harder for a man with a strong will and a stronger "won't" in his composition, than to make up his mind not always to have his own way—to submit to a thousand little wrongs and impositions rather than quarrel with neighbors. A man who had been a clergyman, physician and lawyer, was asked which profession was the most profitable? He replied, in substance, that "where a man would be willing to pay twenty-five cents to secure his salvation, and fifty cents to be made well when he was sick, he would willingly give five dollars to have his own way."

Now this wilfulness is, of all kinds of business, the most unprofitable. One well says that a man needs a long purse who determines, come what will, to have his own way. We must learn to turn sharp corners quietly or we shall be constantly hurting ourselves. Two men with mills on the same stream quarreled over the water-power. There was probably not five dollars difference between them at the start, but neither would yield an inch. The case was thrown into the hands of smart lawyers, who aggravated the difficulty for their own ends, and worried the case along year after year, until one lawyer took the upper mill for his dues, and the other the lower. They probably were contented not to quarrel over the trifles that proved so disastrous to their clients.

Before you go into a lawsuit, carefully calculate your cost if you should not gain it, and see if you had not better put the money into a flock of sheep, a new carriage for your family, a young cow for your son or daughter, or a thousand other things that might give you much more profit and happiness. The malicious delight you feel in gloating over a neighbor's discomfiture, is not happiness, but only its miserable counterfeit. It is a disposition near akin to that which lost spirits feel. Root this out of your heart if you would not be forever miserable.—Country Gentleman.

THE HAPPIEST LIFE.—Do you ask me which of all I believe to be the happiest life? Then I say, from my heart, a consecrated one. Be it "in the world" (so-called) or out of it, in the highway or by-way, as God wills, still a life consecrated to a service better, higher, sweeter than that of self enjoyment or self-success. We all want to be happy. We all seek personal joy as an instinct. Surely, God meant it to be thus when He made us. Yet no less He has set the deepest sources of joy outside of self-indulgence—in love, obedience, devotion and duty. It may be a hard word, the last; it has a chilly sound. Yet no less it claims and possesses more and more as our days go on. Impulse, desire, idolatry, aggressive selfishness—one by one we lay them down. We drop our weights as we go upward. Lo! the cross that we called Duty changes to a crown.—Exchange.

GREEN VEILS.—We frequently see little children in their carriages upon the street with green veils tied over their heads and faces. A child will always take the folds of the veil in its mouth, when it can, and will often extract the green coloring matter with its lips. Children, and even grown people, have sore mouths and faces from this cause which are frequently difficult to heal. The coloring matter in the green veil contains arsenic, which when placed in contact with a delicate surface like the lips, or a pimple upon the face, will cause an ulcer that is troublesome to heal. Ladies sometimes have sore hands from wearing green gloves, when they innocently attributed the difficulty to another cause, thinking that their hands are chapped. Green colored wearing apparel of any character should never be worn next to the skin.—The Bistoury.

Young Folks' Column.

Changing the Subject.

Little Mary had heard her father instruct her older brothers and sisters that when, in the course of conversation, a subject came up that seemed to be disagreeable to any one present, etiquette demanded that it should be changed as quick as possible. Some days after, her father said to her as he left the house:

"Mary, papa wants you to be very careful if you play in the garden to-day, not to touch the hyacinths. Will you remember?"

Of course she would, but on papa's return in the evening, he found his hyacinths picked, and the marks of the little feet in the garden bed.

Calling Mary up to him, he looked very grave and said:

"My dear, you remember that I told you particularly not to touch the hyacinths, and now I find them picked, and no one has been in the garden but you. How is this?"

Mary laughed, and said:

"Oh, papa, it was splendid in the garden to-day! I saw a beautiful little bird's nest, and there was a great big butterfly—"

"Wait, wait, my child. I am talking to you about something else now. Don't you understand me? I am very seriously displeased with you. I told you not to touch the hyacinths, and now I find them picked, and your footprints all about."

"Oh, yes, papa, I did have the loveliest time in the garden to-day. Don't you think it was a beautiful day?"

"Mary, how dare you answer me so impudently! I am talking to you about your disobedience. Why do you not attend to me? I shall have to make you."

Rather sobered at this suggestion, the little girl's countenance fell, and she faltered out:

"Why, papa, you said that when a subject became unpleasant to any one, the only way was to change it."

Papa saw the point and the unpleasant subject was dropped for that time.

Cleopatra's Needles.

Of course many of you know that Cleopatra was a celebrated and beautiful queen of Egypt, and when you read of her needles, you may suppose that they are needles for knitting or sewing. But though a kind of rough sewing-needle was known in her day, her Egyptian majesty cared little for such simple implements. She much preferred things that would add to her fame for power and splendor, and probably was very proud of the two beautiful obelisks which still bear the title of "Cleopatra's Needles."

These may be seen, one erect, the other fallen, on the sea-coast just outside of the city of Alexandria, where they once graced the entrance to some magnificent temple, now vanished. They are each about seventy feet in height, about seven and a half feet in diameter at the base, tapering very gradually to a diameter of less than five feet at the top, and each cut from a single block of dark red granite.

On every side, extending from top to bottom of each of these huge shafts, are three lines of hieroglyphics, or the picture-writing of the ancient Egyptians. These inscriptions the learned men of our day are slowly and laboriously learning to read. When they have made them out, we may have many new and interesting things to tell you about the history of the ancient Egyptians.—Hearth and Home.

KINDNESS FOR KINDNESS.—A bee loaded down with pollen and honey, seeing a choice blossom near the edge of a brook, on its way home, stopped to see if it would not take "on board" another drop of honey. Alas! a gust of wind which suddenly came up, blew the bee into the water. A dove flying by, seeing the bee in the water, either intentionally or by accident, dropped a twig which it had in its bill, carrying home for the purpose of building a nest. The twig fell within the reach of the bee, who struggled on it and was wafted ashore by this little boat. The next day, the same dove was softly cooing in her favorite tree, when a sportsman with dog and gun, came by, and slyly raised his deadly weapon to fire, when, lo! a bee came buzzing around him, in such a threatening manner, that he failed in his aim. The shot was scattered, and the startled dove was off on the wing. The bee went buzzing on its way—a happy bee—for it had paid a debt of kindness with kindness in return.

"And thus in the world the rule was made,
That each should his fellow creature aid;
One does another a service to-day,
To-morrow that other the deed can repay."

A BARBER in Titusville, while cutting the hair of a rural customer, ran his shears against some hard substance, which proved to be a whetstone. The old farmer said he "had missed that whetstone ever since haying time last July, and had looked all over a ten-acre lot for it, but now remembered sticking it up over his ear."

DOMESTIC ECONOMY.

Order Lightens Labor.

If, by any amount of patient effort and instruction, we could succeed in fixing the belief that *order lightens labor* in the minds of our servants, full half the trouble so justly complained of, would forever pass away. But it seems an almost hopeless undertaking, because such teaching, to be effective, must begin in early childhood, and our servants, generally, come to us with fixed habits, riveted by the example of parents as ignorant and unmethodical as themselves. Children are naturally careless, and only a parent's "line upon line, precept upon precept," can bring order out of their heedlessness.

How well do we remember the patient teachings of the dear mother, who, now with the snows of ninety years upon her head, waits for the "well done good and faithful servant," which shall bring her to her eternal rest, and glorious reward! Take only one example for illustration, namely, the manner of removing the food and dishes from the dinner table, preparatory to bringing the dessert. It is torture to sit quietly and witness a servant's mode of doing this simple thing. Knives, forks and spoons, thrown on the greasy plates, or among the fragments left on them. Large plates piled on top of small ones, with, perhaps, a cover or vegetable dish between, and this awkward, unsafe pile whisked over your guests' heads or your own, while you shrink in momentary expectation that the tottering mass will upset over your clothes. Then it is hurried into the pantry, and "dumped" as carelessly as if it was but the dish towels, which very likely lie close by on the shelf, a damp, untidy heap, unfit for use. Happy for you if you do not hear a "crash" when this cargo is so unceremoniously discharged. If so, as the waiter returns for another load you are told, "Nothing broke, me'm." But the next meal you find, what is worse than a good, honest, open-faced *break*, the edges nicked, bits of glazing broken off, and the dish so defaced as to be ever after a provocation to you. Dishes, so despoiled of their beauty, unfortunately, never *will break* and be out of your sight.

Now, how easy and far more expeditious to pass quietly around the table, gathering first knives, forks and spoons into a small pail, or receiver, then take all the meat and vegetables out to the servant's table, in the kitchen. Meanwhile it will expedite matters, if you gather the plates together, yourself scraping the fragments into a dish by your side, and have a neat parcel, piled in order according to their size, ready to be set on the side table, or butler's pantry, (for of course you never allow silver, glass, and fine china to be washed in the kitchen.) While the waiter removes castors, salts, or what clean dishes may be left on the table, you can gather the mats together and fold the table towels, and then she, with crumb-knife, or brush, removes the crumbs. Five minutes should see a table neatly cleaned and ready for the dessert, without the noise and disagreeable clatter which so often attends this labor.—*Home Monthly*.

FRESH VEGETABLES AND SWEET SALADS.—Those who value fresh vegetables and sweet salads will have none washed in the garden. Neither the one or the other should be washed, until they are just about to be cooked or eaten. Even potatoes lose flavor quickly after being washed, so do carrots and turnips; while water will speedily become tainted in summer in contact with cauliflowers and cabbages, and thus destroy their freshness and flavor. The case is still worse with salads. If washed at all, they should be only just before they are dressed, and they should be dried and dressed immediately. Nothing ruins the flavor of vegetables, and renders good salading uneatable, sooner than water hanging about them. If lettuces are quite clean, they make the best salad unwashed; but if washed the operation should be done quickly; and the water instantly shaken out, and the leaves dried with a clean cloth. But, alas! how often are they cut and washed in the garden in the morning, and pitched into water in the scullery sink until wanted. Then we are gravely assured that our gardeners cannot grow salad like the French! But what French "artist" would be mad enough to rinse out his salad juice, and then re-charge his lettuces and his endives with semi-putrid water? The best practice is simply to remove all superfluous earth by scraping or rubbing, and all rough tops of leaves by cutting. Enough tender leaves may be still left on cauliflowers and brocoli to overlap the flowers. Salad should be sent in from the garden with most of the outside leaves and main root on. The tender leaves are easily tainted and injured by exposure, and if the chief root is cut off sharp much of the juice oozes out at the wound. Where vegetables and salading have to be bought from a town grocer, the conditions are altogether different. Not only washing, but soaking often becomes requisite to restore something like pristine crispness.—*Gardener's Chronicle*.

A LABOR SAVING ITEM.—Many ladies prefer to attend to the more delicate parts of cookery themselves, as the pie and cake baking, etc.; they have a natural fondness for it, or they feel that it is well for them to take exercise of this kind. But what an unintentional disturbance they sometimes make in poor Bridget's dominions! Of course it is the part of a well trained domestic to run at her mistress's beck and call to supply all her needs, to "clean up after her," and to make no remarks; but, on the other hand, every lady should do her work as neatly and with as little disturbance of kitchen routine as possible.

It is a mistake, for instance, to suppose that each distinct operation in cake making, to be neatly done, requires the use of a separate utensil. Here are sugar, flour, butter and milk to be measured, eggs to be beaten and soda to be dissolved. One cup may be used first for sugar and flour, as they are both dry, and afterwards for the butter and milk. Soda may be dissolved in the bowl in which the eggs are beaten, after the eggs have been added to the cake. When all is finished it will be found that very few dishes have been soiled. This is of course a small item, but it "tells in the long run."—*Hearth and Home*.

A WAY TO USE OLD MUSLIN.—There is no economy in using old muslin when it will be exposed to much wear, but for some purposes it is "as good as new." A lady writes us that for years she has made her partially worn sheets into simple window curtains. From the center of the sheet she tears the worn portion; this leaves two strips, each of two and one half yards in length, and from three fourths of a yard to a yard in width. She then sews the two selvedge edges together, and turns the raw edges back to form a seam. All around the curtain she now stitches, at about an inch from the edge, narrow strips of some pretty and washable cambric or calico for a trimming, putting an extra row of stitching through that on the upper end to make a place for a tape to be run in.—*Hearth and Home*.

TO CLEANSE WOODEN FLOORS.—The dirtiest of floors may be rendered beautifully clean by the following process: First scrub with sand, then rub with lye of caustic soda, using a stiff brush, and rinse off with warm water. Just before the floor is dry, moisten with dilute hydrochloric acid and then with a thin paste of bleaching powder (hypochloride of lime); let this remain over night and wash in the morning.

California Plants.

The diversity of surface, climate and soil of the State of California is as great as the variety of its productions and while we have the great majority of the trees and plants of the Eastern States, we have, at the same time, numbers which are unknown there or in fact anywhere else. The members of the California Academy of Sciences have been very diligent in collecting the flora of this coast and the numbers of new plants in their collection would surprise and delight any botanist who saw them. Unfortunately the Academy is rather impecunious and the collections are stowed away in boxes instead of being displayed to advantage in some public place. Nevertheless, constant accessions to the collections are being made and at the last meeting a number of contributions to the cabinets were received as follows: Nest of marsh wren (*Troglodytes palustris*) composed of different grasses ingeniously woven together, from Mr. Gibbs; frogs from the swamp lands, of the family *Hydidae*; plants from swamp lands by Mr. Gibbs. Among them were the tule potato, so called from being found in swamp lands amongst the tules. The bulb is about the size of a hickory nut, and it is fine food for swine. The Chinese collect large quantities of the bulbs for food, and it may be that it might be improved by cultivation. A vegetable called the wild artichoke, but in reality not belonging to that family. It is eaten by swine. A small rush, which may eventually become useful for the manufacture of hats. The wild hollyhock, supposed to be of the same family, found generally on the banks of rivers in grass lands. It bears a white flower with crimson centre.

Among the curiosities was a true lobster found in the waters of the Pacific which was presented by S. R. Throckmorton. It was about one-third the size of those found on the Atlantic coast, but the fore claws were proportionally larger.

California Chestnuts.

Dr. Kellogg said he had just returned from under the shadow of the finest evergreens ever grown. He hoped the Secretary would record the fact that there were in California true Chestnut trees (*castanea chrysophylla*) from 100 to 200 feet high, 4 to 6 feet in diameter, and with a clean trunk of 50 to 70 feet. This fact had hitherto been doubted, although he had stated it before the Academy several times. He had on the trip also met with *rhus aromatica*. A new plant, described by him as an *hibiscus* or kind of wild hollyhock, having a strong fibre similar to the ramie; the first ever collected in this State. It was found by Mr. Gibbs. *Hibiscus Californicus*—Kellogg, is from 4 to 6 feet high.

The Tule Potato.

Mr. Bloomer read a paper on the plant presented by Mr. Gibbs describing it as a *Sagittaria*.

It is indigenous to California and the bulbs or roots are edible. The Pacific Railroad reports say it is eaten by the Indians, who term it Wapato. Dr. Kellogg said it was also consumed by the Chinese in large quantities. Mr. Bloomer also said that the plant known to settlers along the San Joaquin as the wild artichoke was *Lycopus Europaeus*, commonly termed "water horehound." It was widely separated from the Jerusalem artichoke.

California Glaciers, Etc.

Professor Carr read some interesting extracts from letters from a student who is traveling in Yosemite, describing living glaciers in that locality. Professor Davidson said if this were the case that it was the lowest latitude in which we find the living glacier. This one is, however, small.

Forest Culture.

At the late National Agricultural Congress, held at St. Louis, Missouri, the committee on forest culture made the following report: It is of interest, as verifying the experience of many practical men, who have given this subject much study.

The forests of the continent are rapidly passing away. Large districts in the Atlantic States are already stripped of their most valuable timber. In less than twenty-five years the accessible forests in the region of the lakes, on the upper waters of the Mississippi, and in the British Possessions adjacent, will be exhausted. The industrial progress of the Southern States is consuming the trees, both deciduous and evergreen, at an accelerated rate.

In the Rocky Mountain regions (where the hard woods are unknown), the pines, spruces and cedars are disappearing before the farmer, the miner, the architect and the railroad builder. On the Pacific coast, the immense home demand, ever increasing, together with the exportation to England, France, Australia, China, Japan, South America, Mexico, and the Pacific islands, foretell the exhaustion of the California timber trees in twenty years; and those available in Oregon and regions northward, in a brief period.

The demand for the products of the forest constantly increases. The supply constantly, and in a growing ratio, diminishes, and prices constantly augment. The causes now in operation, and daily gaining strength, can have but one effect, that of exhausting all of the available sources of supply within the lives of persons now in existence.

This appalling prospect, the view of which becomes the more vivid the more it is studied, should arouse the farmers, land owners and legislators. It is vital to the future welfare of our people that the reproduction of our forests should at once begin, not on a small scale or in a few localities, but in large measures and co-extensive with our settlements. A broad statesmanship, in the National and State Legislature, should at once take up the subject, and deal with it year by year, until the great work shall be adequately begun.

The few and hesitating experiments in isolated localities, which have been made in the growing of forest trees, have no significance so far as the general supply of future wants is concerned. But they are of inestimable value, in so far as they teach the ease and comparative rapidity with which forest trees, useful to the farm, to the work-shop and to the railroad, may be produced; and in so far as they show that the agricultural men of the country have already (in advance of the men in high political life) appreciated the necessities of the present and the future.

They are also of value in demonstrating that, however remote the profits of forest culture may have been heretofore considered, it is yet true that the artificial plantation may in a very few years, by judicious planting at first, be made to yield current returns equal to the cost of planting and care.

Modifications and ameliorations of climate, due to the destruction or the extension of forests, have begun to enlist serious consideration. There can be no doubt of the beneficial influence of forest areas equal in aggregate to one-third or one-fourth of the entire area of any extensive region. But, however important climate effects may be in this connection—however desirable it may be that the crops and animal life of the farm should enjoy the benefits of forest influences and shelter, the need of extensive forest planting is imperative enough without taking into consideration its effect on atmospheric movements, temperature, or rainfall.

The store, the dwelling, the wharf, the warehouse—all these, and more, demand action, demand it in the name of domestic life, of farm economy, of commerce, of all the arts of our civilization. What we shall save in climate by preserving forest areas, or gain by their extension, is just as much to be enjoyed in addition to other compensations. The less violent sweep of the winds in Illinois, as compared with forty or fifty years ago, due to the obstruction caused by buildings, hedges, fences, orchards, artificial groves, and wind breaks on the prairies, speak to the understanding of plain men more forcibly than any language we could use.

There may be those who regard forest planting as a work of mystery and grandeur, beyond the reach of the common farmer. This is a mistaken view. Nearly all the most important deciduous trees may be grown from the seed as

readily as Indian corn. Of many species the seed may be sown broadcast and harrowed in, if the planter prefers to use the seed lavishly rather than give more care. The seeds of many trees may be planted either in the fall or spring as may be most convenient.

Some of the softer wooded trees grow from cuttings as readily as the grape; and with most deciduous trees, the seeds or cuttings may, if desired, be at once planted where the trees are to stand. Nor need the most unlettered farmer deny himself the pleasure and profit of the conifers and evergreens. The plants, furnished at prices which are insignificant in comparison with their value, are abundant at reliable nurseries, and with the simple precaution of keeping the roots moist, and proper care in planting, are as sure to grow as any other tree or shrub.

No part of the earth is blessed with a greater variety of useful trees, both of the hard and soft wooded kinds, than the United States; and these native trees can all be readily grown in artificial plantations. It is not alone the pines and spruces and cedars that make up our valuable timber. The harder wooded trees—the ash, the oaks, the hickories, the maples, the walnuts, and the chestnuts—of which we have heretofore been so lavish, have a value in the arts that no figures can estimate. They may be said to be essential to the continuance of our present civilization. New forests of these trees must be grown, or our grand-children must depart from our modes of life.

West of longitude 100° from Greenwich, the material for a common wagon does not grow on the continent, and we are fast exhausting it east of that meridian. Ohio and Indiana, Kentucky and Missouri, have girdled and burned hard wood trees that would to-day be worth hundreds of millions of dollars. If failing springs and protracted droughts and extremes of temperature suggest replanting, their people may safely rely on a future market more certain than that of any other product of the soil.

The remedies were embodied in the following resolutions:

1. *Resolved*, That we recommend farmers throughout the United States to plant with trees their hilly or other waste lands, and at least ten per cent. of their farms with trees, in such a manner as to provide shelter belts of clumps and rapid growing and useful timber.

2. *Resolved*, That we solicit the Legislature of the several States to pass laws providing bounties for planting useful trees, encouraging the planting of highway, and for the provision of State nurseries of young timber trees, and also the appointment of an Arbor Day for the annual planting of trees, as has already been done in the State of Nebraska.

3. *Resolved*, That we ask our Congress of the United States to require, so far as practicable, that hereafter railroad companies and settlers receiving the benefit of the homestead and other acts donating lands, shall plant with timber trees one-tenth of the lands so donated.

Mineral Land Decision.

An important decision has recently been rendered by the Commissioner of the General Land Office with regard to the title of mineral lands on those patented to the Central Pacific Railroad Company. People had in many instances already located mining ground on some of these sections, and other parties who had purchased the land from the railroad company found them in possession. This naturally gave rise to disputes as to priority of title, which the Commissioner decides in a manner to show that a possessory mining claim which existed at the time the Government granted the land to the railroad Company, can be patented, and the patent will hold good over any given to the company, or conveyances made by them to private parties. The decision, which we append, will serve to put a stop to further litigation:

"Inasmuch as all known mineral lands, excepting coal and iron, are expressly excluded from the railroad grant, and from all patents issued thereunder; any party having bona fide subsisting mining claim upon a tract of land, at the date of the erroneous patenting thereof to the railroad company, is in no way debarred from proceeding to obtain a Government patent for such mining claim, in accordance with the mining statutes of Congress; it being only under such statutes that valid title to known mineral land can be acquired; but when lands have been patented to the company and a mining application is filed therefor, either the company or its grantee may come forward, provided they appear within the time fixed by the mining act for adverse claimants to disprove the mineral character of the land, should they desire to do so."

SINGULAR EXPLOSION.—Some workmen were recently engaged in a blacksmith shop, in heating the piston of an engine employed at an English colliery, when a sudden explosion of the iron occurred, by which two men were killed and several others injured. It was the opinion of the jury of inquest that water had found its way into some cavity in the piston, which being suddenly converted into steam by the heat of the forge, caused the explosion.

Raising Forest Trees.

There are millions of acres of lands in California perfectly adapted to the growth of grains and fruits, fertile in the production of grasses, but yet totally barren of forest trees, the pride and beauty of all countries. There is something approaching to grandeur in a vast plain of green grass; but without a tree the landscape lacks the beautiful.

Many in California are turning their attention to (and many more should) the raising of forest trees, for utility, shade and ornament. Before the transplanting of young forest trees, or planting of the seed, attention should be given to the adaptation of soils to particular varieties of trees, for it is quite useless to attempt the growing of trees as a success upon soils wholly unsuited to their natures.

The butternut and black walnut thrive the best in deep, river alluviums, or rich, sandy loams, and it is time thrown away to attempt to grow them upon dry and sterile lands, unless the subsoil be deep and easily penetrated by roots. The elm and sugar maple will do well in somewhat dryer soils, and so will many of the conifer evergreens, if established while young.

The chestnut should never be attempted, except upon deep, dry, sandy soil; whilst the shell-bark walnut, or hickory, as it is sometimes called, and the heech, will do better on a strong, rather wet, clayey soil, and do not succeed, or but poorly, upon dry, sandy loams. Oaks in some of their varieties will thrive on any rich land. The live-oak will grow well, apparently, from between two rocks. The white-oak, on our driest and hardest lands, and if we wanted them, the black, swamp and pin oak in any wet ravine or swamp.

The Lombardy poplar, valuable for wind breakers, and the yellow locust, valuable for posts and timber, are trees of rapid growth, and should be extensively cultivated for the purposes named, and will grow on almost any tolerably fertile soil.

How to Obtain Trees.

There are now extensive nurseries at the East, and perhaps in California, that furnish any quantity of any of the common varieties of forest trees at one year old, at very reasonable prices; or, if it is preferred to grow them from seeds—which is certainly the best way—send to some reliable seedsman in San Francisco or elsewhere, to furnish the seed from the growth of the present year, and take no others, except, perhaps, the locust—these will germinate two or three years old.

Having obtained the seed, or one year old trees (we are speaking now of California), plant out in properly prepared ground, in the place where they are to stand, if possible, but if not, then in nursery row, and transplant one year later. Care should be taken to keep down all grass or weeds within a distance of three feet from the tree. Seeds of the elm and maple should be planted as soon as they fall from the trees, and they will start immediately and make a growth of six or eight inches the same summer.

As it is difficult to keep these seeds in good condition for a single year, it is better to procure the one year old trees from the nurserymen. The locust is a very strange seed, and requires a management that would destroy almost any other seed, to cause it to germinate the same year as sown. Four or five quarts of boiling hot water should be poured upon one quart of seed, and remain for twelve or twenty hours, when most of the seeds will be found to have quadrupled their size.

These are in condition for planting at once. Those that are not swollen should receive another application of boiling water. Don't think it will hurt them; it is the only way to bring them out, unless you can give them a winter's hard freezing in moist earth.

Transplanting Trees.

Some are inclined to throw a great mystery around the very simple process of transplanting trees. The cause of half the failures in transplanting arises from the very imperfect and careless manner in which the young trees are taken up from the nursery row. In some establishments where a reputation is worth maintaining, a proper degree of care is generally exercised in the taking up, but even then the trees where large orders are being filled, often remain too long out of the ground unprotected from the sun and drying winds.

The novice in tree planting never seems to attach that importance to the small fibrous

roots that really belongs to them. The large roots of a tree are of no service in maintaining the vitality of the tree only so far as they are the sources from whence emanate the fibrous life preserving roots. It is therefore of the utmost importance that these fibrous roots do not become entirely dried through while they are out of the ground. The root or limb of a tree once entirely dried of its juices cannot be again vitalized, and this applies particularly to all trees in which their juices are gums or resins, as many of these once dried are entirely insoluble in water.

Hence the necessity of keeping the roots, and as far as possible the tops of the trees to be transplanted, as much from the sun and air as possible. Having taken up the trees and removed them to the place of setting, the holes for them, which should all have been prepared beforehand, wide and deep, are now to be brushed over with the spade, bringing up fresh moist soil to come in contact with the roots, and fill in with equally moist soil till the roots, when in their natural or proper position, sloping downward, admits of the lower part of the body of the tree, coming an inch or two below the surface.

The Practical Part.

Place the tree in position, resting lightly on the bottom roots, and carefully cover these roots first, pressing the soil firmly upon them and raising any of the upper roots that may have been bent down from their natural position. Now cover another tier or course of roots with soil, and press it down upon them as before, and so proceed till all the roots are covered and in their natural position. Very little shaking of the tree is required in putting the soil under or round the larger roots, and under the body of the tree; it had better be done with the hand; because if the tree is raised but very little in the shaking, it serves to draw the fibrous roots from their covering, and as the tree settles back to its position these fibrous roots instead of regaining their proper positions are kinked up unnaturally, and greatly to their injury.

If the soil is in proper condition when the trees are set they need no watering; but if very dry, and no prospect of rain, it is well to give them a thorough watering, after the last or upper course of roots are covered and pressed down; fill the remaining 2 or 3 inches of the hole with water, and when nearly all has soaked in, which will be in 10 or 15 minutes, fill in the remaining soil even with or a little above the general surface of the field, and if possible cover the whole with a good mulch of half-rotted straw, leaves or any other suitable material.

Pruning at Transplanting.

It is unquestionably the best practice to prune a tree to some extent at the time of transplanting. There is almost always a loss of some roots at the time, and to preserve a proper balance of power between top and root, it should be done by pruning off any superfluous branches, or trimming it to a more perfect form by outside clipping. It is an axiom that should be observed very generally in fruit and forest tree setting, that the root should preponderate in a proper proportion over the top, where the growth of wood is desired; whilst fruitfulness, accompanied by a lesser growth of wood, is almost invariably induced by root pruning.

BALL'S WATER ELEVATOR.—John A. Ball, patentee of Ball's Elevator, which was illustrated in the Press on the 28th September last, writes us from Grass Valley that he will soon be ready to fill all orders for his Elevators promptly, and with first-class machines. This reminds us that in the description accompanying the illustration we stated that the endless chain passed over a pulley at the surface, and under another in the bottom of the well. This latter statement is a mistake, as no pulleys are used in the bottom of the well, none being required, the buckets filling and acting perfectly without them.

THEY PLANT AND GATHER.—In some parts of Europe we are told that the local authorities plant walnut trees by roadsides, protect their growth by field watchmen, and gather the fruit and sell it for government revenue. These fine shade trees are thus, doubtless, made profitable in lessening the taxes of the people. English walnut timber is reported to be excellent for manufacturing furniture and other articles. Some counties in our own State could plant roads with these trees with ultimate profit, we presume,

California State Fair.

Gold Medals Awards.

The committee met, as per adjournment, at the Secretary's office on Saturday and proceeded to read and discuss the claims filed by the different applicants for the gold medals. The committee had carefully examined all the exhibitions during the fair, but adjourned to give all an opportunity the more fully to explain the especial merits of each, by filing written statements. Many of these were very interesting and instructive, and evinced a considerable skill in the writers. The medal in the first department had already been awarded to Col. C. Younger, of San José, for his breed of Short-horn Durhams, so that this committee commenced with the second department, embracing machinery.

The committee found many articles of great merit, but the contest was soon narrowed down to the Goodwin pump, exhibited by the inventors, Goodwin & West, and a new turbine wheel, invented and exhibited by Dr. James Cummings, of Amador county. The medal was finally won by the former by a ballot of our majority.

In the third department the contest was also quite spirited, and on the first ballot each member of the committee voted for different exhibitions, the ballot standing one for the exhibition of wax flowers, wax fruit and other wax representations, exhibited by Mrs. Anna Getz Lucas, of San Francisco; one for millinery—and especially for home-manufactured wire bonnet and other frames, made and exhibited by Mrs. W. C. Barrett, of Sacramento; and one for the Jute Manufacturing Company, of Oakland. Had the latter filed a statement such as they might have done, it is quite probable they would have been the successful parties, but the medal was awarded to Mrs. Lucas by a unanimous vote.

The fourth department brought out more applicants than any other, and many exhibitions seemed very nearly equally meritorious; three, however, were developed to be the favorites of the committee; beet sugar, by the Sacramento Valley Beet Sugar Company, the home manufactured glass, of various kinds, exhibited by the San Francisco Glass Company, or the manager, Carlton Newman; and artificial stone, manufactured by an Eastern company, but represented here by George W. Morgan, of Sacramento, and who is contemplating the establishment of a factory for its manufacture in this State. The medal was finally awarded to the Glass Company, and the Artificial Stone Company, and the Beet Sugar Company were each recommended to the Board for a special medal.

The fifth department had not so many applicants, but here also there were three that seemed to the committee pretty evenly divided as to merit. These were James T. Stratton, of Alameda, for artificial forests of Australian gum trees; Wm. M. Haynie, of Sacramento, for hops, and Robert Williamson, of Sacramento, for a very full variety of very superior vegetables. The latter proved to be the lucky man.

In the sixth department E. F. Aiken, of Sacramento, and L. A. Gould, of Santa Clara, were the only contestants—the former for dried and preserved fruits, and the latter for desiccated fruits or fruits dried by heated air. Both exhibitions were very valuable and meritorious, but there being a doubt in the minds of the committee as to the quality of the fruit dried by the desiccated process, Aiken was awarded the medal.

The seventh department—that of fine arts—embraced statuary, paintings and designs. The artists, being proverbially a modest class of people, left the committee to make the decision pretty much without comment. However, J. C. Devine & Bro., of Sacramento, gave an essay on marble and the art of working on the same. George G. W. Morgan set forth the merits of his idea of a narrow gauge railroad and canal combined, as illustrated in a design exhibited by him at the fair, while Alfred Hart, of San Francisco, entertained the committee with a very interesting and well-written criticism on fine arts, and especially upon the merits of the portrait and landscapes exhibited by him, and the committee awarded him the medal.

The committee recommended the Board to offer hereafter a gold medal for the most meritorious invention made within the State during the year.—Union.

MINERAL WEALTH IN THE INDIAN COUNTRY.—The scientific and exploring expedition which left Washington last May, under command of Colonel W. C. McCarty, of Texas, for the purpose of exploring Northwestern Texas, has returned, after a successful trip of five months in the Indian country. Copper ore has been found in large quantities of a very superior quality, having assayed as high as eighty-four per cent. of copper, the remainder being silver and other matter. The coal discovered is also of a superior quality, resembling the best Pennsylvania anthracite. The Great Southern Pacific Railroad and the Pacific and Great Eastern Railroad pass through or near these banks. Colonel McCarty is now fitting out a more extensive expedition, to penetrate what is known as the "Llano Estacado" or "Staked Plains," and thence through the eastern mountain range of Northwestern Texas, and will leave New York about the 1st of November.

AN IMMENSE SNOW PLOW.—The Union Pacific Railroad is having built at its shops in this city a snow plow, which, when finished, will be the largest and most powerful in the world. It is rapidly approaching completion, and in a few days will be ready for business. The trucks on which it is built are very heavy and strong, and were cast especially for this plow. The platform on the trucks is twenty-two feet long, and ten feet six inches wide, and is composed of solid oak timbers eight by sixteen inches. These timbers are held together by ten iron bolts, one and a quarter inches in diameter, which run crosswise. This solid bed is fastened to the transom beams by forty bolts, twenty over each truck. The inclined slide, placed on the platform, is twenty-two feet long, and slopes at an angle of thirty degrees, and is held firmly to the bed by forty bolts, of an inch in diameter, and is supported from behind by inclined posts, six feet long, eight inches wide and sixteen inches thick. The entire length from the rear of the platform to the end of the slide is thirty-two feet. The slide is to be ironed, and an immense plow of the ordinary shape, eighteen feet long, eleven feet wide and five feet high, and covered with iron three-sixteenths of an inch thick, is to be securely placed upon it. On the point of this plow there is to be an iron plate, steel pointed, eleven feet long and four feet wide. This plate of course runs across the track and only one inch above it.

The rear of the platform will be hoisted in, making a room twelve feet high, eleven feet wide and ten feet long, for the purpose of keeping the snow out. It will be furnished with a door, so that if necessary it can be loaded with iron.

The monster will weigh fifty tons, and will be operated by three of the heaviest engines on the road. The cost will be over \$5,000. The design was gotten up by G. E. Stevens, Superintendent of the car and building department, and J. H. Congdon, general master mechanic of the road, who must have made it a study since last winter. There will be but very few snow-drifts that this plow won't clean out; but if it ever jumps the track, it will be a pretty hard job to get it on again.—Omaha Bee.

Oregon Items.

Wheat is worth only fifty-five cents a bushel at Albany.

Two Linn county men are trapping for beaver on the Calapoota, about eight miles from Albany, with success.

A Jackson county farmer has raised 10,000 pounds of onions on one half acre of ground the present season.

Some scoundrel has been kukluxing the dogs and cats of Albany. Large numbers of these animals have been poisoned lately.

Tom Richmond and Dr. Sites, accompanied by several other Nimrods from Polk county, went on a trip last week and brought back twenty-one deer.

William Nixon, of Yaquina, has a half interest in a six-months' baby, which weighs 96 lbs., and has a head as big as the editor of the Benton Democrat.

The wife of Jack Grant, late Representative from Polk county, has shot and trapped 358 squirrels last year. What lady can discount that score?

The Indians in the vicinity of Klamath Lake last week stampeded a drove of cattle belonging to William Miller, of Lake county, and got away with a number of them.

A Corvallis paper says: "Owing to the long dry season, the grass in this vicinity has become very poor, cattle are faring badly, and butter is exceedingly scarce in this market."

A large Newfoundland dog fell fifty feet down a shaft in the Virtue mine, near Baker City, last week, striking a miner and knocking him senseless. The dog was hoisted up uninjured, but the man was pretty badly hurt.

A carriage, in which was riding Mr. Fuller and his wife, was struck by a passing train on the railroad track at Oregon City, recently. The occupants of the carriage were thrown out and badly frightened, but not much hurt.

Some man, or rather some brute in human form, shot two horses belonging to Mr. W. P. Walker, at the Dalles, last week. At the time, the animals were in Mr. W.'s pasture, and no reason can be assigned for the fiendish act.

"Scattering Seeds!"

We herewith offer, till further notice, to send the PACIFIC RURAL PRESS FREE for the term of THREE MONTHS (12 Nos.) to any one address which any new yearly subscriber may designate. Every old subscriber, upon renewing his subscriptions may send us the name of any neighbor or friend in any part of the U. S.—who does not already receive the Press—and a copy of the paper shall be sent for ONE MONTH free. Making the paper, in this manner, known to those likely to subscribe, we believe will more rapidly extend our list. We know there are thousands who would subscribe at once if fully acquainted with the benefits to be derived from our columns.

N. B.—If a new subscriber should prefer to have 12 single copies sent to 12 different persons, he can send us 12 cents in stamps, with the names and addresses, and they shall be sent prepaid to each.

Or, if in preference to any of the above offers, the subscriber chooses to receive to his own address 12 back numbers (such as we may have on hand), we will send them instead, on receiving his notice for the same.

If you FILE this paper, but wish to send samples of late dates to friends, enclose us 25 cts. in stamps, and we will direct four copies, prepaid, to any address, or number of addresses, you may order.

THE PACIFIC RURAL PRESS.

A CALL UPON THE PACIFIC RURAL PRESS.—While at San Francisco we availed ourselves of the privilege of dropping in upon our friends of the PACIFIC RURAL PRESS, one of our most welcomed weekly exchanges. The firm of DEWEY & CO. has become a household word throughout the State, from the dignified and valuable character of their publications. These publications aim to meet the varied interests of California, and we are glad to know that they are all being sustained generously. During our trip through the State we met at nearly every point one or other of their issues.

Besides the RURAL PRESS, they publish the SCIENTIFIC PRESS, which ably serves the mining and other industrial interests of the district.

Recently they have added a monthly sixteen-page newspaper of special interest to wholesale and retail tradesmen, called the PACIFIC COAST MERCANTILE DIRECTOR.

In all these enterprises we wish our friends abundant success, and we shall long remember their cordial greeting extended a stray editor sojourning a day or two in their beautiful city.—Philadelphia Journal of the Farm.

JESSE A. PIERCE, agent and correspondent of the MINING AND SCIENTIFIC PRESS and the RURAL PRESS, published by DEWEY & CO., San Francisco, called on us this week in the course of his rambles through this part of the country. He has been making a pretty full inspection of our mining and agricultural interests. We shall probably see his opinions in the above named papers.—Auburn Herald.

A New Potato.

The Late Rose Potatoes, grown by C. H. Dwinelle, of Oakland, and exhibited by DEWEY & CO., of the PACIFIC RURAL PRESS, are the first of this variety raised in California. As one of the latest of celebrated new varieties, we will mention some of its peculiarities. It bears a strong resemblance to the Early Rose in form, but has its marked characteristics in maturing about three weeks later when planted side by side. The Late Rose is also hardier, healthier, a greater producer and a better keeper, retaining its good qualities throughout the season. Its growth in California the present season has been a favorable one, with every prospect of its maintaining here its excellent reputation established within the past two years in the Eastern States.—Sacramento Union, Sept. 26th.

The above potatoes, which were awarded a special premium at the State Fair, were samples from a small quantity raised this season. A portion of the same will be sold in small lots if desired. Price, 4 lbs. for \$1, sent by mail, prepaid. Address C. H. Dwinelle, Oakland, or care of this office.

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Notice to Farmers and Others.—Skilled plowmen, general farmers, teamsters, laborers, mechanics, servant girls, etc., can be obtained by applying by letter or personally, at CALIFORNIA LABOR AND EMPLOYMENT EXCHANGE, 637 Clay street, extending to 630 Commercial street, San Francisco. 2044-31u

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SEEDLINGS AND ROOT GRAFTS

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The Mining and Scientific Press for 1872 is Still Marching Onward!

Our careful system of compiling, judiciously condensing, and conveniently arranging into regular departments, has been heartily endorsed. It renders the paper worth more to readers, who can find handily that which interests them most. This plan will be continued in Volume XXV.

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Treating on the Opening of Mines; Mining of Ores; Milling of Ores; Smelting of Ores; Separation and Roasting of Ores; Amalgamation; Saving of Gold and all precious Metals; New Processes of Metallurgy; New Discoveries of Mines; Mining Engineering and Hydraulics.

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Embraces new and important facts which should be known in every cabin and household. Short and interesting—the articles under this heading are freely read and practiced with profit and improvement to the readers.

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Well calculated to make practically scientific men from our intelligent masses. This is our stronghold for accomplishing good. Plain, correct and pleasing language, easily comprehended by all, confined mostly to short articles, is our endeavor.

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This machine has taken no less than eight first premiums this season, at fairs in the Eastern States. At the fair at Rochester, N. Y., it was awarded the first premium of \$10, besides a \$50 premium for the most useful invention, relating to agriculture, patented during the last three years.

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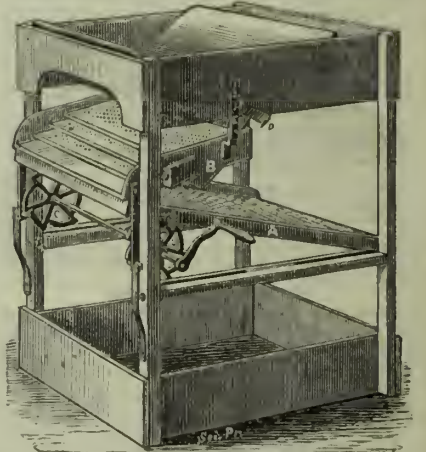
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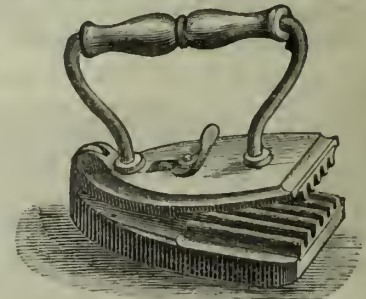
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PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, NOVEMBER 23, 1872.

[Number 21.

The Best Twenty Apples.

There are many persons who are not, and do not desire to be fruit-growers for the markets, who have nevertheless an acre of land they wish to devote to such fruits as will give them a succession throughout the year. It is important to such that, they either know from careful observation what they do want, or that reliable information be obtained from those who have already tested the different varieties, having in view their adaptability to our peculiar climates.

We say climates, because it is a well-known fact, that all former Eastern experience—with apples for instance—is wholly at fault when acted upon here. Thus the Rhode Island Greening of the Atlantic States, a semi-winter apple, ripens here in Autumn, and the Roxbury Russet one of the best keeping, winter and late spring apples at the East, is in good eating condition here in January; whilst other varieties not particularly remarkable for their late keeping qualities there, are our best here.

It is important then that those who are about to set out a limited number of trees for home use, should be informed of the best varieties to secure them a succession of ripe apples from June, till April or May of the following year, and as our orchardists who cultivate fruits largely for the markets, must be in possession of this information, we invite them to give for the benefit of those desiring it, a list of the best 20 varieties of apples for the garden or orchard of the amateur, as we do of the best 12 varieties of peaches for a succession in this number of the RURAL.

There are those also who would be glad to get a list of 15 or 20 sorts of the very best as market fruits, regard being had to succession in ripening and their adaptability to transportation and general keeping qualities. We shall hope to hear from more than one of our large-hearted fruit culturists, or from some of our observing nurserymen.

Rose Culture.

There are many little fragile flowers, that bloom in beauty, often in soils so poor that the plants that bear them seem to derive their chief sustenance from the air; but the Rose—queen among flowers—can only be produced in perfection in soils rich, deep and loamy. The rosebush will grow in almost any soil, and yield its flowers; but unless the soil be what is termed a strong, sound loam, it is useless to hope for a perfect, heavy bloom.

Many who cultivate roses in pots, are disappointed because their plants never produce the same fine bloom they did the first season they procured them, and they wonder at the cause. True there is much in judicious pruning to give symmetry and strength to the bush; but for the development of the blossom, nothing will compensate for the absence of a rich and generous soil.

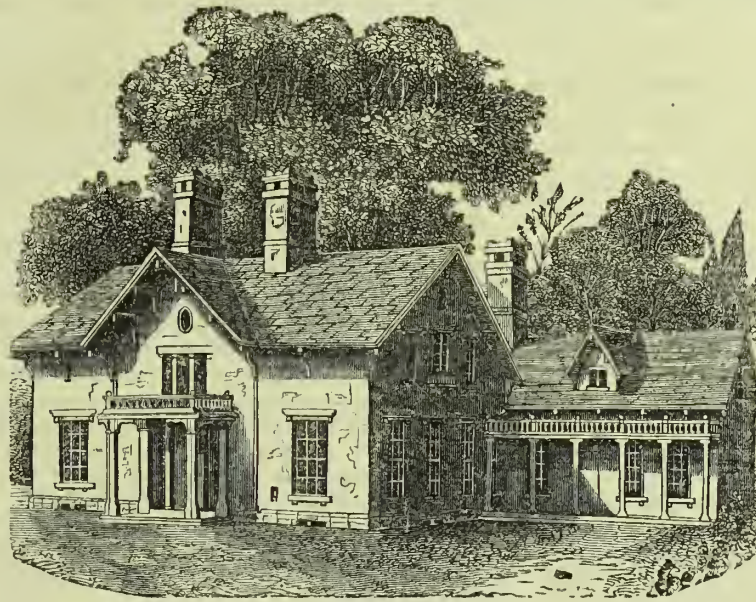
Most roses bought of florists, full and heavy in their bloom, are but recently potted plants, growing in an artificially prepared soil of great strength, and for a single year such plants are all that can be desired; but to be compelled to remain in the same circumscribed limits from year to year, extending their tops, but with no room for the further extension of their roots, is asking too much of a plant so luxurious and prodigal in its growth of beauty as is the rose.

So that when you see your roses of whatever variety, putting forth but imperfectly formed bloom, depend upon it they are poorly fed. It is a better way for city folk to send back their roses to the skillful florist every fall or winter, to be properly trimmed and repotted than see them languishing under a development of imperfect half grown flowers, the result of injudicious pruning and starvation; whilst the rose-grower of the country, should see that his

plants whether in pots or the garden border, have a thorough pruning and an annual renewal of the best fertilizing soil procurable. It is the only way to obtain heavy, full blown perfect roses.

A Farm Cottage.

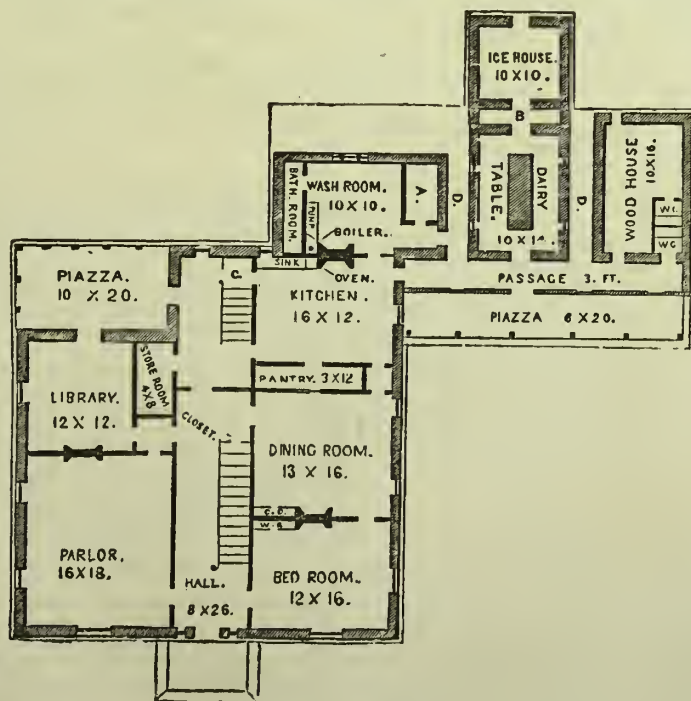
We occasionally present our readers with an illustration of a farm house and its attach-



FRONT ELEVATION.

ments, though we may not be able to give the estimates of cost, etc., attendant upon adopting the plans, because that depends much upon locality and the facilities of obtaining materials.

ment of the kitchen and dairy, regard has been had to securing the proper requisites for those important departments, with the greatest degree of convenience.



GROUND PLAN.

But in giving a variety of styles and the general ground plan and interior arrangement, by the time many are ready to build a better house than the one they now occupy, they may be able to form something of an idea of what they will have when they are ready.

In Fig. 1 we give a perspective view of a farm cottage, with an elevation of 13 feet from the sills to the roof. To give good light to the

chambers, the apex of the roof should not be less than 22 feet above the sills, leaving a sufficient space for air between the finish of the chambers and the roof, to prevent the rooms being heated in summer.

Fig. 2 is the ground plan, in the construction of which it has been the object to combine utility and beauty, as far as practicable, with the labor-saving principle. In the arrange-

Preparation of Seed.

The soaking of seeds in simple warm water with a view to facilitate the sprouting, has to some extent been practiced from time immemorial, sometimes rationally, but often with injury to the seed and of course to the future good of the plant, even if it grow at all.

If the soil be exactly in the right condition as to temperature and moisture, and the season be far advanced, there can be no question of the advantage of such a process; but if the soil is warm and dry, the sprouting germ will be in danger of perishing before sufficient moisture is furnished to the surrounding earth to sustain its premature germination.

Usually it is safer to omit soaking altogether, but where the soil is in just the right condition it may sometimes be practiced with advantage. In addition to soaking in warm water, it is also common to use a variety of chemical substances with a view either to stimulate the growth of the young plant, or prevent the ravages of depredating insects and animals, or of some of the diseases to which the plant may be liable.

Of the class of chemical agents used to stimulate the growth of plants, common salt, nitrate of soda, lime, wood-ashes, saltpeter, nitric and sulphuric acids are most commonly chosen. And while we do not question the effect, we nevertheless doubt the philosophy of the practice; for the reason that forced growths of plants are never favorable to their healthful maturity. If the soil contains the needed elements and is properly pulverized, there can be no need of using means of stimulation.

If these conditions of soil are not present, then such means will avail nothing and may even do harm, if indeed they produce any good results at all—which we are disposed to question in view of the fact that the germ is fed in the first stages of its growth by the store of food contained within the seed itself, and the moment the little rootlets advance beyond the seed-shell, their whole sustenance must come from the soil and not from any preparation that may adhere as a coating to the prepared seed.

As Preventives of Disease.

Particularly of smut and rust; lime, salt, alum, copperas, blue vitriol and arsenic are recommended. Among the best, we find doubtless, blue vitriol;—blue stone—two ounces to the bushel of grain, of this salt of copper, dissolved in as much water as may be necessary to thoroughly wet the grain, has been so often declared a preventive of smut, by careful and reliable experimentists that we acknowledge to full confidence in its value. The wheat should be allowed to remain wet an hour, and then should be spread out to dry.

Lime is sometimes used with evident advantage; the practice is to throw into tepid water as much seed as when stirred, will allow the light grains to rise to the surface that they may be skimmed away. Then dip out, spread on a floor and sprinkle thereon freshly slacked lime, in the proportion of about one bushel to twelve of seed; stir with a shovel until a thin coating of the finely pulverized lime adheres to every seed and leave for about ten hours; then spread it out thin to dry, before sowing.

HORSE DROPSY.—A new horse disease has made its appearance in many of the stables of New York, from which as many as fifty per cent. of those attacked die. It mainly attacks those that are put to work while yet suffering from the late spizootic.

CORRESPONDENCE.

Seasonable Hints.

EDS. PRESS:—We have been enjoying the most delightful autumn—Indian summer—weather for weeks past, with only an occasional cloudy day to remind us of the approaching rainy season. We had but three or four light frosts, until yesterday morning, when the mercury fell to the freezing point; ice formed to the thickness of window glass in water troughs.

Those that have not stored away their supply of winter apples, should do it at once. Pick carefully without bruising and pack away in barrels or boxes and store away in the cellar, or other cool dry place. Overhaul occasionally and throw out all decaying ones, do not wipe them; they will keep better without. Packing in saw dust or dry sand has been recommended by some, and I think is worthy of trial. For very late keepers I think it might be useful by keeping sufficient moisture to prevent shriveling; which they are apt to do in the spring, in our warm dry climate.

Now is the time for the farmer to see that he has a good supply of dry wood stored away in a dry place for winter use. I have no doubt the good housewives will thank me for this bit of advice.

Farmers should see that their plows and harness are in good order and ready for use as soon as the soil is in working condition. A little delay is a dangerous thing with those who have an adobe soil. It must be worked at the right time to secure the best results.

To those contemplating planting fruit trees I would say now is a good time to visit nurseries and make a selection for planting out as soon as the ground can be got in order. By so doing, they generally make a much larger growth than if set out in the spring. I have noticed that the roots of fruit trees commence, as it were, a second growth soon after the rains in the fall; hence the advantage.

In pruning the young trees, "cut back" severely; better err on the side of overdoing, than not enough, especially if they have but few roots, or have been much damaged. Cut off all broken roots with a sharp knife, slope on the under side that the new roots may strike down deep in the soil.

Do not neglect planting all the ornamental and timber trees you can afford between this and next Spring. If you should ever want to sell your property; it will bring a great deal more money, besides meeting with a more ready sale. But this is not all; the beauty, comfort and pleasure one derives is compensation enough.

In conclusion I would say to Farmers and others, that in making a selection of reading matter for the coming year, to not overlook the *RURAL PRESS*. After taking it for a year, I find it contains more reading matter of practical use to the tillers of the soil on this coast, than all the Eastern Agricultural journals combined. Beside this, it contains as much solid information on matters of Science, Invention, Health, etc., as can be found in any of the first class magazines.

St. Helena, Napa Co., Nov. 11, 1872.

Cutting Back Fruit Trees.

EDS. PRESS:—Last winter I bought of a traveling nurseryman or tree peddler a round dozen of fine cherry trees which are warranted to be of the best sorts. They were from six to eight feet high, straight and handsome and without out side limbs. I was told when I bought them, that as they had been grown in close nursery row, they would on being set out in open ground and good soil, produce limbs four or five feet from the ground and thus make a low and bushy head.

Judge of my disappointment; not a single tree made more than two limbs and these from the very tops, and they have made a straight shoot upwards, as if to see just how high they could go, and have not made a single limb. If this is the way they are going to do another year they will be of no use to me, for before they will bear fruit the tops will be quite out of sight. Is there any remedy? By answering you will oblige,

Alameda, Co., Nov. 14th, 1872.

At the time of transplanting or setting out the trees where they are to remain, they should have been headed back to four feet in height; this would have caused the trees to put fourth probably four or more limbs from near the top instead of only one or two. When the new growth had made an advance of two feet, say in June, head back again by cutting off nearly half of the new wood, this would cause another growth of two or more shoots instead of one.

The second or June pruning should never be deferred later than June if it is expected the tree will make the second requisite growth the same summer. There is no remedy for our correspondent, but to cut back his trees to the height he wishes his trees to form their heads. He may hope to obtain a growth of side limbs, low down, as well as form and symmetry to his trees, but it is a vain hope; there is no other way to "put a head on them," but by cutting their heads off.

Osage Orange Hedge.

EDS. PRESS:—I notice an item in the *PRESS* of the 9th inst., headed "Osage Orange Hedge." Having been engaged in that business for the last four years, I feel induced to give a few thoughts upon the subject to be taken for what they are worth.

I have about 300,000 plants on hand grown from seed planted last February in nursery, and are of proper size for setting this winter. I have also sixteen miles of hedge growing in Solano and Yolo counties, the oldest is four years old and is a good fence, notwithstanding two dry seasons. A fence can be made of it in from three to five years on any soil that will produce grain. I have never seen a cutting grow under any conditions and I have given it some careful attention.

The seed should be planted in nursery and transplanted at one year old. The reasons for this are obvious: first, in order to insure success the line of hedge must all be started at the same time and with plants of equal size and strength, if not, the weak plants will in a few years die out, leaving holes in the fence. This can only be done by assorting the plants and planting those of equal sizes together. Second, the uncertainty of the seeds growing leaving places without any plants, others too scattering and some too thick, making the difficult task of thinning and replacing, it is very difficult to thin where they are too thick and leave plants at uniform distances, and not disturb those to be left.

The refilling is still more difficult; suppose you wish the plants in the line of hedge to stand at a distance of eight inches apart, your seed has grown leaving irregular spaces to be filled, and where you fill between two plants of one years growth the strong plants will sap the small ones and finally cause them to die out.

G. W. FRAZER.

Vaca, Solano Co., Nov. 15th.

Cheese Factories.

We have a correspondent—"Vulcan"—who sends us an interesting item or two from Cambria, San Luis Obispo Co. He remarks that they have already two cheese factories, and two more are being built. That Mr. Utley, having hired a German "just come on," is about going into the manufacture of the real "Swiss cheese," and is preparing the necessary cellar for that purpose under his present factory.

Three cheese factories and a bacon and lard factory are situated on Santa Rosa creek; the latter conducted by Messrs. McF. & M., who are going largely into the business, having extensive orders on hand. It is the opinion of our correspondent that they intend to keep ahead of our "whale" correspondent and his "animal" fish, in No. 15 of *RURAL PRESS*. He says: "We have at San Simeon Bay one of the five whaling companies of California, and they do something at 'ile,' and help us mechanics as well as the hog-raiser. This company has paid me over \$100 for making harpoons this last year. And we expect much from our quicksilver mines also. SANTA ROSA CREEK, Nov. 6, 1872."

We wish other of the readers of the *PRESS* would drop us an occasional item of what is going on in the way of progress and improvement in their respective localities.

Notes from Western New York.

EDITORS *PACIFIC RURAL PRESS*:—Our fruit season is about to close. Another week will be as late as it is safe to ship by canal. Apples have afforded a bountiful crop, and brought good prices, from \$1.50 to \$1.75—for the fruit—per barrel. Quinces which with us is always a paying crop, have yielded well, and brought \$5 to \$7 per barrel. Grapes have averaged five to six cents per pound. Potatoes are going forward rapidly at \$2 per barrel, yielding moderately, or about 100 bushels per acre of merchantable tubers. There has been a large breadth of wheat sown, which owing to fall rains has been well done and looks finely. Horses are all sick, but I hear of few fatal cases. Stock cattle are low. Sheep have been more sought for the past year, and are looking up again. Hogs are doing better, and are again in demand. The season has been very favorable for farmers work and usually remunerative.

J. B. JONES.

Macedon, N. Y. Nov. 14th, 1872.

Inquiry about Turkeys.

EDITORS *PRESS*:—Will some of the numerous readers of your very valuable paper please tell me through the *PRESS*, how to fatten turkeys. I have never had any experience with them, and don't know how to manage to get them in good condition to eat or sell. Someday I must shut them up, and others that I must let them run, I bought them about a month ago of a man who was moving out into the hills and could not take them along. They are all young. Will some one tell me and oblige an old lady?

I think you are doing a world of good with your paper (*PACIFIC RURAL PRESS*). I have it weekly and never tire reading it. MRS. J. R. MONTEREY, Nov. 11th, 1872.

We would like to hear from the readers of the *PRESS* on the subject of Turkey fattening. In another column will be found an Eastern idea on the subject.

Mohair in English Markets.

Again we are permitted to publish a letter just received, relative to Mohair in the English market:

Sir:—We beg to acknowledge the receipt of your letter of the 26th September last, on the growth of the Cashmere and Angora goat in California, and, in reply, have to state that we are large users of Mohair or goats' wool imported from Asia Minor, where it is indigenous. The Cashmere is a different article and one that we do not purchase. We have, on several occasions, reported on Mohair grown in other parts of the world and if you will send us 2 lb. samples of each of the different sorts you have for sale, we shall have pleasure in examining the wools and giving our opinion of their value, etc., etc., it being difficult to give you any idea as to the value without seeing the article. The principal markets in England for mohair are Liverpool and London and we should recommend your sending a few bales to a Liverpool broker to be offered by auction as a means of really ascertaining the market value. Mohair is usually packed in bales of about 170 to 180 pounds each—the average quality by itself, the grey separate and the inferior sorts in bags also separate. The inferior sorts are offered here as well as the staple article.

Mohair is made up in single fleeces rolled in a bundle with the staple inside. If you desire to produce a superior article, like that from Turkey, you must keep the breed as pure as possible as the crossing with the common goat produces coarse and kempy wool. We remain yours respectfully.

JOHN FOSTER & SON.

Black Dike Mills, Queensbury near Bradford, Oct. 18th, 1872.

Will Transplanting Induce Fruitfulness?

EDITORS *RURAL PRESS*:—It is a common assertion with regard to most of the nut-trees that they do best if the nuts are planted where they are to grow, without transplanting from a nursery. On the other hand, I am told of the English walnut that, if grown without transplanting, it takes very much longer to bear, though it makes a larger tree. Perhaps the first assertion is consistent with the second, if growth be the main consideration, but with most planters the size of the tree is secondary to early fruitfulness. Have you any light on the subject?

R. S.

Anaheim, Cal., Nov. 5th.

It is the generally received opinion among horticulturists that, to mutilate the tree's roots by transplanting serves to induce early fruitfulness; and almost all pomologists have observed that to severely injure a tree in any way, so that its death is only a matter of a time, certain to come in a year or two at furthest, such tree invariably puts forth every energy left it, to continue or perpetuate its species, and will blossom and bear fruit in greater abundance while yet it lives than though it had not been injured.

It is not so much the larger size or growth of the tree that is secured by planting out the seed where the tree is to remain, as it is the general health and long life of the tree; whilst its fruitfulness is hardly ever delayed more than a year or two, at most.

Sending Plants by Mail.

A correspondent G. H. asks in regard to the transmission of seeds, etc., by mail. The following from the *Country Gentleman* is in point:

Although it is several years since Congress generously placed the mail-bags at the service of all lovers of floriculture, by the paying of a very small sum of money (2 cts. for 4 oz., 4 cts. for 8 ozs., 6 cts. for 12 ozs., and 8 cts. for a pound, allowing 4 lbs. to be sent in one bundle), there are yet many persons throughout our land who do not fully comprehend the facilities of transportation for all kinds of floral beauties.

There are many dwellers upon the distant prairies and amid the ranches scattered through Colorado, Montana and Arizona, who would gladly avail themselves of these privileges did they but know how small a sum it would cost them to procure plants which would enliven their surroundings, remind them of a distant home, and brighten many a lonely hour of their lives. It is for their benefit that I write this article, and also for those who, having received plants by mail which were a long time en route and have become very dry, are not aware of the treatment they require.

There are many florists who make it a speciality to send plants by mail, and have advertised largely to that effect, and have given great satisfaction and pleasure to thousands of customers.

If plants have been confined in tight bundles or boxes for some days, the evaporation of moisture from the leaves has been very great, and they require to be soaked in warm water from twenty minutes to half an hour, keeping the wrappings about the roots, and laying the plants in shallow pans of water quite warm to the hand. This restores their vigor, revives the leaves, and gives the plants renewed life. They must be shaded from the sunlight for three, four or even five days, and water plentifully sprinkled over the leaves both night and

morning. If the sun does not shine, keep the coverings off; but if it does, double newspapers, carefully folded and fastened over them, will keep the plants fresh.

If planted in new pots, the pots must be soaked in water for at least an hour before using them, or they will draw all the moisture out of the soil and kill the plants by starvation. If old pots are used, they must be carefully washed from all dirt or slime. If the plants are placed directly into the open border, one must remember that they came from a warm greenhouse and keep them shielded from chilling winds. There is nothing of value in this life but has its price. "Earth gets its price for what earth gives us;" but if one possesses a true love for flowers, the very act of caring for them enhances their value. Uncle Sam's mail-bag will transfer the contents of any greenhouse safely to your door, and if you will but give the plants a kindly welcome, and a warm bath when they arrive, you will rarely lose one of them. A correspondent from Texas complained, in a number of your paper, of his non-success in procuring verbenas from distant florists. Let him try my plan and see if he will not be successful. I received sixty-five plants by mail in one week, the last season, and have not lost one of them.—*Daisy Eyebright*.

Encourage Local Manufactures.

One of the greatest drawbacks to the prosperity of San Francisco, and, indeed, the whole State, says the *Bulletin*, is the want of proper encouragement to local manufactures. We know this is a trite statement; and further, that the truth of it is generally conceded. Great progress has been made in manufacturing in this city within the past few years, notwithstanding the up-hill work which has been encountered. We are now manufacturing on a scale never before attained, both as to the variety and quantity of articles made. Nevertheless, it has required considerable pluck, loss of money and faith in ultimate success, to reach our present standpoint. What we now want is, that Californians shall patronize home industries. If we can make as good boots and shoes as are made in Boston and other New England cities, and sell them as cheap, give the preference by all means to California goods, and thus retain at home the thousands of dollars annually sent abroad for these articles. A considerable change has already been made in this direction. There is still room for improvement. We have the material and the labor and the capital for making all the boots and shoes required on this Coast, and we should do it. We will do it just as soon as all our people make up their minds to cover their feet with California-made boots and shoes. It is said that our Eastern-made candles cost us about one million of dollars per annum. There is no reason why this money should not be kept at home. We have two candle factories here, whose capacities can be largely increased, and they would be thus enlarged, were proper encouragement given. Merchants can do much to facilitate the demand, by embracing every opportunity to introduce these candles in the interior. It is no apology to say they have no time to attend to this matter. They must take time. If they cannot see that it is for their interest to make this sacrifice they should give way to others.

We might go on through the list of our local manufactures with similar comments. A safe rule to observe is this: Where the quality of the article is as good as the Eastern made, and the price is as low, purchase California made goods. In this way the millions annually sent out of the State will be retained for the development and improvement of home resources. Our local manufactures should be better patronized, while the variety ought to be extended. We can reduce the hoodlum element of this metropolis by developing manufactures, thus opening sources of employment for them. A system of thriving manufacturing interests here will attract skilled workmen from abroad, thus adding a large and respectable element to our population, creating an enlarged demand for the products of the soil, flocks and herds of California. An increased consumption of agricultural products will of course result in better prices to the farmer, and stimulate that industry with others. We shall then be less concerned about ships to take away our Wheat, Wine, Wool and Leather, and retain much of the freight money now paid to transport these products abroad.

CALIFORNIA MARBLE.—The Grass Valley *Union* has the following: There is an extensive quarry of marble on the left bank of Bear River, one mile below the lower bridge of the Colfax road. The quarry has been worked for more than a year, off and on, by a San Francisco company. Marble of a very fine grain is taken out, and shipped to the bay. At the present time stone is being quarried for a vault in San Francisco. The marble is both gray and blue. In this county there is an abundance of fine marble which could be made a valuable industrial resource could it be got to market at reasonable prices.

SUCCESSFUL experiments have been recently made in England with a new Railway Brake, worked by electricity. The invention consists in the application of electro-magnets, exerting a force of 600 lbs., to pulleys on a swing shaft underneath the carriages. By merely pressing the key the guard is enabled to bring the train to a stand-still.

HOME AND FARM.

Mechanics Becoming Farmers.

For a young mechanic to throw aside his tools and take up farming as a means of support, when he knows nothing of the business, is quite an expensive experiment. Let such a person hire out for one year to a practical farmer. The wages he will receive will not be large, but they will be better than the heavy losses a novice is sure to sustain in undertaking such an enterprise. The science of farming looks very simple to the uninitiated—just put seeds and plants into the ground, and they will grow themselves and furnish a luxurious support. A year's experience as a hired man on a farm will give a little insight into the multitudinous duties of a farmer's life. But farming on one's own hook by people who have never lived on a farm is sure to be a valley of humiliation and mortification, and endless vexation. How, think you, would a young farmer make out, attempting to build a house or make a bureau, or even a simple stand, having never learnt the craft of carpentering or cabinet-making? As a general rule it is better for a man with a good trade to stick to it, unless there are considerations of health that require a change. Changing for a mere whim is not likely to advance a man's worldly prospects. "A rolling stone gathers no moss."

If one does go to farming, let him give the matter much thought and study beforehand. I cannot think of a much better text book on the subject than a few bound volumes of some of our first class agricultural papers. Let him read up farming as a young lawyer does his law books. It is true that all this is much better when joined with a practical knowledge; but even sound theories alone, well considered, are a great deal better than no information. But let him enter upon his new business with a mind open to conviction. The idea that he has learned the whole gamut will work mischief to his farming. Be ready to learn even from the boy who drives up the cows. Sir Walter Scott was not above learning from the rough fellow who groomed his horse. Begin with all the information to be had beforehand—with a large stock of patience always in reserve, and let not the beginnings be too ambitious. Be content to eat your brown bread first. Most well-to-do farmers have done the same in the start; while those who dash out expensively the first year usually throw the farm into the market and leave the field in disgust at the end of the second.—*Ex.*

German Prejudice Against Potatoes.

In Germany there exists a decided prejudice against potatoes, because they are composed of three-fourths water, with but 10 to 15 per cent. starch contained in indigestible cells. The French, who make a perfect science of the whole business of nourishment and cookery, rarely eat potatoes except occasionally fried for the second breakfast. They consume beans more than any other vegetables, and with reason, for dried beans contain 22 per cent. albumen and 50 of starch, and the common lentils 26 per cent. of albumen and 56 of starch. In the monasteries of France and Italy great quantities of beans are used, especially during the Lenten season. German naturalists are now searching all over the world for a substitute for potatoes, and this is believed to have been found in China, in the *dioscorea japonica*, which endures the greatest cold, and is more nourishing and better flavored than the potato. In the Museum of Natural History at Paris, a specimen three feet long and weighing three pounds was exhibited. Several German writers upon races predict that nations, far from improving, will deteriorate, both in mental and physical characteristics, if potatoes become a principal article of diet. The celebrated Carl Voigt says that "the nourishing potato does not restore the wasting tissues, but makes our proletariats physically and mentally weak." The Holland, physiologist, Mulder, gives the same judgment when he declares "that the excessive use of potatoes among the poorer classes, and coffee and tea by the higher ranks, is the cause of the indolence of nations." Leidenfrost maintains that the revolutions of the last three centuries have been caused by the changed nourishment. In former days the lowest workmen ate more flesh than now, when the cheap potato forms his principal subsistence, but gives to him no muscular or nervous strength.

MAKE NOTE OF THIS.—If you wish to make a purchase, don't go away from home to do it. Encourage home industry, and give your trade to merchants and mechanics, especially those who advertise freely. That is the way to build up a lively business in your own town, and benefit yourself as well as others. Every dollar spent in a town is of an advantage to a place in general, and every dollar spent abroad for articles which could be bought on favorable terms at home is like taking so much capital out of the business interests of the place.

EFFECT OF OXALIC ACID ON SEED.—An English scientific journal states that oxalic acid promotes the sprouting of seeds, so that seeds forty years old will germinate by its application. The method is to soak the seeds for one or two days in a solution of oxalic acid, till they commence to sprout, when they are taken out and planted.

TO SEPARATE LIGHT GRAIN FROM GOOD.—A correspondent of the *American Artisan* suggests the following plan: For wheat, take lye from wood-ashes, strong enough to bear up a potato. Pour the grain into the lye, skim off all that floats, pour off the lye. The grain can be rinsed if thought best, or it can be dried for sowing. It will not hurt the grain, if it is not allowed to remain in the lye. The grain should be spread so that it will dry quick. This method of treating grain not only removes light weight, but destroys insects or their eggs that may be in the grain. For lighter grains make the lye less strong.

WHY ENGLISH FARMERS THRIVE.—Alderman Mechi, well-known as a successful English farmer, and one who also keeps his eyes open to the everyday matters of life, in relation to the value of a home market, says: "It is precisely because British farmers have their customers—the British manufacturers—almost at their doors, and that other corn producing countries have not any manufacturers, that British agriculture is rich and thriving."

TEN cubic yards of meadow hay weigh a ton. When hay is taken out of an old stack, eight or nine yards make a ton. Eleven or twelve cubic yards of clover, when dried, weigh a ton.

THE total production of hops in the United States for the census year ending June 1, 1870, was 25,456,669 pounds.

Formation of Sandstone.

We find in the *Revue Scientifique* a paper presented to the Geological Institute at Vienna by M. Fuchs, on the manner in which sandstone must have been formed. It is well known that what the French call *gres*, and we "grit," is a rock composed of siliceous grains agglomerated into a mass, possessing more or less tenacity. Now the cement which binds them together is not always of the same kind. The question examined by M. Fuchs is, whether the consolidation of the agglutinated mass was effected immediately, or whether it was the work of time? To justify this inquiry he quotes two cases. On the natural jetty which encircles the port of Messina on the side of the straits there are large slabs of sandstone, with their edge rounded off, and having diameters varying between twelve and eighteen feet, with a thickness of ten or twelve inches. They are buried under sand and shingle, and are unconnected with each other.

Thus also recent excavations on the shore adjoining the same port, have brought to light, after a depth of 9 feet of pebble and sand and a bed of gray marl, a solid conglomerate filled with sea shells of the same kind as those still living in the surrounding waters. Their state of perfect preservation shows that they must have been immediately imbedded in a soft sandy mud; otherwise they would have been exposed to destruction. The rapid solidification of the sand M. Fuchs attributes to the incrusting agency of certain algae. The *Codium bursa*, the *Palmophyllum flabellatum*, and others are known to agglutinate shells and pebbles so as to form masses of the size of a man's fist; whence there is reason to conclude they may make larger agglomerations, such as those on the coast of Messina. The other example adduced by M. Fuchs is a sandstone with crystalline grain, is plentiful at Siervring, near Vienna. Here the agglutination has been slow, and is owing to the infiltration of water charged with carbonate of lime. Evidently the solidification of such a mass required a long time, and sandstone may therefore be considered as belonging to different formations.

SEA-SERPENTS.—Regarding "sea-serpents," the following note may be interesting as explanatory of some of the descriptions which have been given from time to time of "Sea-Serpents":—The South African Museum, Cape Town, recently received a specimen of the Ribbon fish (*Gymnoterus*) fifteen feet long without the tail. It appears that this fish is known to distant inland fishermen as being forty feet long, and from its slender shape and snake-like movement is probably the "sea-serpent" of late years so minutely described by navigators. From its head there is erected a plume of rose-colored spines, and from head to tail along its back there is a conspicuous mane-like fin. Its general color is like burnished silver. The eye is large and silvery, and the profile of the head comports well with that of the horse. The specimen could not be preserved, but there are two smaller specimens in the Museum.

WATER FREEZING BELOW 32° FAH.—It is generally admitted that water congeals at 0° Centigrade or 32° Fahrenheit, and that it is only in perfectly tranquil places that it can be kept liquid even at a certain number of degrees below the freezing point. *Les Mondes* mentions in this connection a curious fact, which it considers due to a supersaturation, so to speak, of the water. If in water, at a temperature of -3° C. (about 27° Fah.), which may even be slightly agitated without congealing, the least particle of hoar frost or ice be introduced, crystals of ice instantly form and expand through the mass, producing remarkable and beautiful effects. The eye can watch the formation of the needles of ice, see them group together and obey those mysterious affinities which produce the exquisite forms with which we are all familiar.

MISCELLANEOUS.

An Ingenious Device—Mending a Steam Cylinder with Wood.

On a late trip of the steamship *Nebraska* from New Zealand to Honolulu, says the *Chronicle*, the carpenter of the ship became engaged in a spicy debate with the English steward aboard as to the responsibility of England for the destruction of the United States merchant marine by the *Alabama*. The debate determined in a fight, and the two combatants were placed in irons. Upon the arrival of the *Nebraska* at Honolulu, the carpenter told his grievances to the American Consul there, who thought it best to send him back to the United States on the *Idaho*.

When the *Idaho* was several days out on the return voyage from Honolulu, her cylinder-head was broken into fragments and the engine could not be used. She had just reached a point where the trade-winds failed her; her sails were scarcely large enough to steady her in rough weather, and retarded as she was by the propeller, the chances for getting to San Francisco or even back to Honolulu were rather blue. In an ordinary breeze her sails just gave her headway enough to be steered, and as few vessels cross or follow the Sandwich Island steamship route, the passengers resigned themselves to fate and made up their minds to endure a long and uncertain float. The Captain was about to be petitioned to put passengers and crew on short allowance, when the bellicose carpenter came to their rescue.

A Wooden Cylinder-Head.

On examining the injured cylinder, the thought entered his mind that a stout cylinder-head of tough, hard wood might stand a sufficient pressure of steam to run the engine at moderate speed. He stated this to the Captain, who, after some hesitation and as a last resort, reluctantly gave him permission to try the experiment. The carpenter procured his tool chest from the hold, and after twenty-five hours hard work, finished and inserted the wooden cylinder-head. It was made of three thicknesses of hard teak board, rendered steam-proof by being covered with paint and canvas, and was caulked tight and held in its place by bolts as in other cylinder-heads, and by a piece of timber braced against its end. When the carpenter announced that the engine was ready for use and desired the engineer to turn on steam, there was a general scamper from the cylinder, where numbers of the passengers, sleepless and feverish, had anxiously watched the finishing of the work. Slowly the steam was turned on, the piston rod rose and fell, the propeller churned the water quickly, the *Idaho* moved on at her accustomed speed and the wooden head was a success. The cylinder-head after being used for a time swelled and collapsed like the lungs in respiration, but the invention stood the test to the end and earned for the carpenter quite a reputation. He is now employed on the *Ajao*, and has become a very hero among sea-going men.

A passenger from the *Idaho*, who conversed with the reporter, was very enthusiastic in behalf of the ingenious "Chips," and says that he is clearly entitled to salvage. Doubtless but for his American views on the *Alabama* claims question, the passengers of the *Idaho*, the majority of whom were Englishmen, would have presented him with some memorial.

Is Electricity Generated by Water Currents?

Zöllner has ascribed the production of the electric currents of the earth to the incandescent molten masses in motion beneath the crust which generates currents in the direction of their own motion; and he has expressed the opinion that all current movements of fluids, especially when in contact with solid bodies, are to some extent accompanied with currents of electricity that have the same direction as the fluids themselves. He inserted the ends of the copper wires of a very delicate galvanometer, of Sauerwald, just within the wall of a caoutchouc tube conveying a stream of water, and observed a deflection of several degrees of the galvanometer scale, thereby indicating the existence of an electrical current, whose direction is that of the water. The greater the distance between the ends of the wires—which, by the way, need not be exposed to the force of the current, but may be replaced by metallic plates lying against the wall of the tube—the stronger the deflection of the needle.

While recently repeating Zöllner's experiments, Beetz obtained similar results, but found that the currents have a much simpler origin. The needle is deflected so long as the reservoir in which the water falls is not isolated. The metal tap, the stream of water, and the reservoir, in fact, form a voltaic element (brass, water, lead) whose current it is which deflects the needle. By filling the reservoir, and dipping the free end of the tube, also filled, into it, the current is observed though the water be shut off, nor does any change take place when the tap is open. By simply inverting the po-

sition of the tube, the direction of the current is reversed; this is observed to be the case with or without a flow of water. If the reservoir be isolated, no current is formed; this is so whether the water be allowed to flow or not. When tap and reservoir are of zinc, no current is produced with or without a flow of water, and with or without isolation of the reservoir. According to Beetz's observations, then, no electricity is generated by a stream of water.

IMPROVEMENTS IN THE ARTS OF METALLURGY.—It is well known that the difficulty of uniting iron to brass is created by the unequal rate of expansion in the two metals, which destroys the unity when the temperature is changed. To meet this difficulty, an alloy has been invented, by an English artisan, the expansion of which, by heat, is claimed to be so similar to that of iron and steel, that the surface may be regarded, when joined, as permanently united for all practical purposes. It consists of three parts tin, thirty-nine and a half parts copper, seven and a half parts zinc.

The construction of bronzes has lately been much improved by the addition of a small amount of phosphorus. A special cause of the inferiority in bronze consists in the constant presence of traces of tin in the state of an oxide, which acts mechanically by separating the molecules of the composition, thus interposing a substance which in itself has no tenacity. Now, the addition of phosphorus is found to reduce this oxide, and renders the bronze much more perfect—improving its color, its tenacity, and its physical properties. Thus treated, the grain of the bronze when fractured resembles more that of steel, its elasticity is much augmented, and its resistance to pressure sometimes more than doubled.

HIGH PUMPING.—At Triumph, Pa., water has to be lifted from the Alleghany River to the summit of Triumph Hill, a vertical height of 685 feet. The horizontal distance is two and three-quarter miles. The pressure per square inch in the water cylinders of the steam pumps is 700 pounds. Three pumps are used, each lifting 200,000 gallons every 24 hours. The steam pumps have a piston stroke of 18 inches; the diameters of the steam and water cylinders are respectively 20 inches and 60 inches. The pressure above mentioned in the water cylinder closely approaches that ordinarily employed in the cylinders of hydraulic presses.

TEMPERING STEEL.—P. McCormick, of Newark, N. J., states that he has been engaged in working steel for the past 30 years, and finds, in new processes, always the same story of "imparting extraordinary hardness and durability to the poorest quality of steel;" and he says that all external working of steel, after the forging is done, has but one effect, namely, that the outer portion cools and contracts first, and so impresses and compacts the interior, that, when a piece is broken, it shows a closer granular appearance after dipping, but will often be so brittle as to break with a slight blow. And if annealed to its previous condition, it is no better than at first.

WATER NOT AN ELECTROLYTE.—The books have long taught that the object of adding an acid, in the electrolysis of water, is to render it a conductor. The fact that compound substances when decomposable conduct only by electrolysis, and hence, that a body not an electrolyte cannot be made so by the addition of another body, has long rendered it probable that it is the acid which is actually decomposed by the current, and that the water suffers decomposition only by a secondary action. Bourgoin has investigated the subject experimentally, and has proved that water is not itself an electrolyte.

TRANSPARENCY OF MOUNTAIN AIR.—Astronomical observations should be made from high elevations. Prof. Young reports the whole number of lines in the chromosphere of the sun, seen from Sherman, a lofty station on the Rocky Mountains, as 150, which is three times as great a number as have been observed from near the sea level. In these localities the atmosphere is clearer, steadier, and it is owing to this fact that a star has been recognized at these altitudes as having a companion or being a double star, not previously known as such.

GERMINATION OF SEEDS.—Late experiments appear to establish the fact that while exclusion from the luminous rays of the solar spectrum is necessary to the healthy germination of seeds, yet the chemical or actinic rays are indispensable to that process. These penetrate deeper into the soil than do the luminous rays. The exclusion of the chemical rays and not the absence of oxygen alone is assumed to be the cause of seeds failing to grow when buried too deeply in the earth.—*Prof. Joy.*

A LIBERAL SCIENTIST.—Mr. J. B. Laws, the eminent agricultural experimenter, of England, has, with most princely munificence not only donated his laboratory to the public, but has also accompanied the donation by the further large gift in cost of \$500,000. The example is a noble one, and bestowed in a direction where it was much needed—in furthering the great interest of experimental agriculture.

VIOLET LIGHT ON VEGETATION.—M. Baudrimont obtains results the reverse of M. Poey, and affirms that all the colors without exception are unfavorable to vegetation, and none more so than violet. All plants lighted by it died first; after violet the most unfavorable was green. Blue, optically situated between them did not give so fatal results.—*Les Mondes.*

FARMERS IN COUNCIL.

Sonoma County Farmers' Club.

Club met pursuant to adjournment. President Holmes in the chair.

On motion the reading of the minutes of the last meeting were dispensed with.

Mr. Wm. McCullough who has lately returned from the East, being present, was invited to address the Club upon any matters interesting to farmers which were presented to him during his visit in the Eastern and Western States.

Mr. McCullough said: I assure you I am somewhat embarrassed when I undertake to address a club of farmers upon matters relating to their special pursuit. While I have entertained a pardonable pride and strong interest in the prosperity of the farmer and all that relates to his avocation, yet I have paid but little attention to the practical part of the great interest of agriculture, and therefore upon that part cannot enlighten you or add to your stock of knowledge. But having been invited to address you upon what I saw and learned of the prospects, aims and efforts of farmers in the great West while I was there visiting, I cheerfully comply with your request.

We all admit that the great interest of the country is that of agriculture, without which all other pursuits must fail. Professions, trades, arts, sciences, all are intimately bound by and related to the success of the farmer's toils. But until I went East I had no conception of the vastness of the agricultural interest and the illimitable wealth it had created. The evidences of wealth were surprising. In one of the sections I visited, which eight years ago when I left was an uninhabited prairie, I found a dense population, cottages and villas, surrounded by flowers and shrubbery, churches and school houses on every side, and grain fields stretching as far as the eye could reach, and five lines of railroads traversing the country and affording cheap and ready transportation to the markets of the world. Agriculture has wrought this change; so marvelous that I was literally forced to give my attention, more than I had ever done before, to the farmer's life, his mode of transacting business, and means of accumulating and securing wealth.

A City of Middlemen.

I discovered that it had not been without great struggles and much difficulty that the farmers have been enabled to control their own business. The great grain market of the West is Chicago; the produce of five of the greatest grain-growing States flow into her granaries, and her merchants have become merchant princes. It is a city of middlemen; men who stand between the producer and consumer, and exact a profit from both. The burden was excessive on the farmers, for the grain dealers fixed the price of wheat and corn, from which here was no appeal.

Attempts had been made repeatedly by the farmers in Illinois and Iowa, to organize for self-protection, but the machinations of the merchants had rendered the movement abortive. But finally, about two years ago, permanent organizations were effected, and now they are powerful. In every State in the West there is a State organization, having subordinate lodges or clubs, through which it acts, and thus precision, certainty, force and effectiveness of action are obtained.

If there is a place in the world where the farmers should organize it is in California. Here, more than elsewhere, there are more middlemen, higher freights, longer distances, comparatively, to market; dearer wharfage, higher commissions and percentage. Every dollar eventually comes out of your pockets, and you are the men who should control the markets. How to thus obtain the control is the problem to-day, and to aid you in your efforts I will give you a short statement of what I learned of the organizations of the farmers in the West.

They have organized under the name of "Patrons of Husbandry." The lodges or clubs, are called "Granges," and the members "Grangers." The organization is National, with its principal place of business at Washington City, D. C. The subordinate Granges are State Granges, and these have control over county and township Granges. In Iowa alone, there are 200,000 members, and the State Grange publishes a newspaper devoted entirely to the interest of farmers. What you need in this State is a strong and central organization, to direct action throughout the State. It could have an agent in San Francisco who could engage freight, receive and ship grain, and sell grain for a less commission than is now paid. By such an organization you can control as wanted, ample capital to move your crop, and at minimum rates of interest.

Effects of Co-operation.

I was initiated into the *modus operandi* of the Granges, by a brother of mine who lives in the northern part of the State of Iowa. His residence is in the center of a fine agricultural region, but remote from market. The farmers there found it impossible to ship grain to Chicago and pay freight and commissions, and finally abandoned, in a large measure, the growing of grain, and were lapsing into a pastoral life, until the Granges were organized, who by controlling freights and by co-operation, have

made grain again the staple; and I was told that the farmers in that section were making more money than they ever did before.

One method of saving money, my brother showed me. He said one year ago we organized a club of Grangers. We had been buying our goods, wares and groceries from merchants; after we organized, we asked forbids from merchants to furnish groceries to the members of the Grange; the club guaranteeing to the grocer the trade of each member of the Grange. The bids were various, ranging from 10 to 25 per cent. over first cost and freight added. The contract was awarded to a grocer who agreed to furnish groceries at 10 per cent. advance of cost price. The Grangers appointed a committee to examine the bills of invoice, and to the cost add 10 per cent. and freight. A schedule of prices was prepared for the guidance of the purchasers, and thus the prices were certain.

Each member had a pass-book, in which were entered his purchases. My brother estimated that in one quarter, compared with the old way of buying, he had saved \$184. This sum does not seem much, but the aggregate saving of fifty members at the same rate, (for some the proportion was larger) for one year would be nearly \$37,000. What is saved is wealth gained, and the same proportion throughout the States would soon make the farmers the most wealthy class of the community, as they should be. But even this profit to the grocer was thought to be too much, so the Grange organized a co-operative grocery store and installed one of its members as its merchant; by this means goods are now furnished the members at cost price. Goods are sold to others than members at a slight profit and thus the salary of the agent is provided for.

Effect on Freights.

But they went further than this, as they gained confidence. Arrangements were made with the Iowa Central and the Illinois Central Railroads to carry grain at a less freight than was paid by the merchants. The reason is obvious. The Grange had its agent and warehouses. The grain would accumulate in large bulks and the railroads could ship in large amounts and by long trains, and thus lessen the cost of carriage. There was a saving of \$4 on each car-load to Chicago. The savings to the farmers continued to increase. They became producers and shippers, with large profits at minimum costs and expenses. They became importers in time.

Corn is the staple shipment in certain sections. Formerly it was shipped to Chicago on the cob, but the changes of market forced it to be shipped shelled and in sacks. There, as here, the merchant forces the farmer to buy sacks. The merchant imports the sacks, sells them to the farmer at a profit, and buys the grain from the farmer at another profit to himself, with the sacks virtually thrown in, making two profits off the farmer and the farmer losing the sacks. The several State Granges imported sacks from Europe and distributed them to subordinate Granges, which furnished them at cost price to members. Here also was an immense saving. Flushed with success, the Granges essayed to invade other provinces of business with like success. Insurance companies were organized for the benefit of Granges, and insurance to members was reduced to one-half per cent. In certain counties the Granges organized National Banks to do a general banking business, but especially to aid members with means to move crops. There are two periods when farmers need money, and capitalists at those periods find it convenient to increase the rate of interest. Farmers are solicitors, their wants are immediate and pressing, and they are at the mercy of the money harpies. By their own hands they are furnished money at the periods needed, on easy terms and at reduced and average interest.

Effects on Credits.

The Grangers made themselves felt as a power in commercial circles. Formerly advances were made by commission merchants only on consignments, but now the credit of the Grangers is so firmly fixed that they have been enabled to perfect arrangements by which advances are secured on growing crops.

Again the National Grangers are in condition to, and do ship directly, in their own behalf from the city of New York to foreign ports in vessels chartered by them. The rates of tonnage and charter are as cheap, if not cheaper, than merchants can obtain or secure.

Here we see from small beginnings the growth of a powerful and almost national organization, its lines and powers ramifying throughout all the Northern States. The middlemen are crushed; the consumer deals immediately with the producer and thus one of the social and political problems of the day is in a fair way to be solved; a fair profit to the producer and cheap food to the consumer.

I have thus outlined the plan and methods of working of the "Patrons of Husbandry," hoping that it may aid you in your labors and tend to perfect your organization. I believe the same system can obtain in this State; and that by it you can break down the monopolies which are so distressing you and hampering your every effort. You want a central organization, a State Club with ample powers to act, to buy and sell, to secure freights, to consign and to secure or make advancements. The farmers are able to do this but it must be done through intelligent and united action. In a few days I shall have the Constitution and By-Laws of the Grangers, which shall be at your disposal, and I take this occasion to say, that if my services will be of the slightest benefit to you, they shall be given with hearty pleasure. I need

not say that the farmers interests are my own, and that I will co-operate with you, individually or professionally, to further your aims and efforts. I thank you for your kind attention.

On motion, a vote was tendered to Mr. McCullough for his interesting address. Carried.

Proposition to Incorporate.

Mr. Rector proposed that the Club incorporate under the general incorporation act, and said: As we are looking forward to business transactions it becomes necessary to put ourselves in condition to transact business. We are not responsible for anything, where there is no responsibility, there is no confidence; an incorporation of farmers may be regarded as extraordinary, and unprecedented; but this is an extraordinary and unprecedented country, that has required some extraordinary and unprecedented laws for the development of the abundant resources of the State. I allude to the general incorporation act.

By the provisions of this act, any company may incorporate at any time, without waiting on the tardy process of special legislation. This privilege has been extensively used so much, that a great portion of the business is now being transacted by incorporations. An individual enterprise cannot exist if it stands at all in the way of an incorporation; hence, many companies have been incorporated in self defense, and that is just what we must do, if it is unprecedented.

The advantages to be derived from incorporating are many and very good ones; it will give us a credit equal to the amount of stock we subscribe for, although we may not have paid but 5 per cent. or the amount the law requires for the first installment. Who is entitled to as much credit as the farmer? Why sir, we own and occupy the best agricultural lands in the State, on which there is an intrinsic value that will never diminish. I believe every Farmers' Club in the State will incorporate and then incorporate the Farmers' Union. We will then be in condition to export our surplus produce, import or manufacture our grain sacks, agricultural implements, loan money, receive deposits, sell, exchange; in a word, do anything that a Christian people may do.

Speeches were made by Messrs. Whittaker, Holmes and others, which want of space prevents us from publishing.

On motion, the subject of incorporating the Club, was made the subject for the next meeting. Members are especially invited to attend the next meeting.—*Sonoma Democrat*.

Farmers' Club of Sacramento.

The club met at the usual hour on Saturday, Nov. 16th, and in the absence of the President, Mr. Redding was called to the chair.

Labor.

The subject of labor being called up Captain William M. Haynie said he differed with many farmers on this subject; he believed that the price of labor, like articles of food, must be governed entirely by demand and supply. The Chinese understand this question better than any other people. They seem to be the first nation who established a system of labor. In China every man, woman and child is taught that they are expected and required to earn a living by labor. They have no idlers, no hoodlums. In China, capital and labor have never been separated—the labor is the capital—the wealth of the nation.

The Chinese Government encourages labor in every department of industry by a system of rewards or honnties. They encourage commerce between different parts of their own country. They make presents or premiums to ships that bring rice and other desirable products for human food. The Chinese made a treaty with the Hollanders at a very early date, but were deceived by the Dutch and became after that very suspicious and exclusive.

The Hollanders asked the Emperor of China for an island opposite Japan to fit up their vessels, and for an establishment for recruiting their sailors, etc. This request was acceded to, and the Dutch were taking possession and bringing a large number of casks and unloading them on the island, when one of these became broken, and out tumbled a large cannon. The Chinese seeing this, concluded they didn't want neighbors who used such big guns, and immediately rescinded the treaty that had been made.

The experience of the Chinese with outside barbarians has been such as not to inspire confidence, but rather distrust and suspicion; and this has grown to be a national characteristic. Hence, the Chinese who come to this country are very exacting in their business transactions; hence they demand their pay as soon as their labor is performed. With this exception, the Chinese give the least cause for complaint than any other class of laborers. Whatever other tricks they may have, they have learned from our own laborers.

Taken altogether the Chinese are the most reliable laborers we have in the State. They stay by us in the busy season and when labor is scarce. They live so cheaply they can live through a dull season, while our own laborers spend all their earnings and are compelled to seek labor where they can get more constant employment than our system of agri-

culture affords. The Chinese, when not employed, live surprisingly cheap. I am assured that a Chinaman, when idle, lives on from twenty-five to thirty cents a week.

From this circumstance and our broken and fitful system of agricultural labor, the farmers of this State will have to depend on and employ Chinese labor. The Chinese see this, and they have learned the tricks of our own laborers, to put on a high price when we most want them, and to resort to the plan of "striking" to enforce their demands. They understand the relation between demand and supply, and they are as shrewd and as quick to enforce it as our merchants—our grain dealers for instance. Friedlander saw the demand that was sure to come for freight to foreign ports for our surplus of wheat and set himself about supplying that demand, and he sets his own price on the vessels, and so every vessel that comes to our port, whether chartered by Friedlander or not, puts up the price of freight because the demand is greater than the supply.

This is an universal rule, and must regulate the question of labor as it does everything else. We may try to regulate the price of labor in any other way as much as we please, our efforts will produce only temporary change, but no permanent relief. If we would be independent and prosperous as agriculturists we must learn a lesson from the Chinese. We must bring up our own boys and girls to habits of labor; we must teach them that they are expected to produce at least as much as their necessities require to support them. We must teach them to abhor idleness and shun idlers. In this manner we must regulate the labor question for ourselves. We can do it in no other way satisfactorily.

When we see such a large portion of our young men and women growing up in idleness and learning to despise labor, and forming habits of recklessness and vice—so many of them coming up as hoodlums, it is fearful to contemplate. We have but few manufactories to employ labor, and what few we have give no employment to our own boys and girls. In fact we have no labor system; no plan by which to make them useful to themselves or anybody else. I regard this as one of the greatest defects yet developed by California society.

We are raising no laborers, and we cannot depend upon European labor, even as superintendents of the Chinese. My own experience is that Chinese will do better under one of their own people as superintendent than under the most of white, and especially European bosses. For the foregoing reasons I have come to the conclusion to let the labor question take care of itself, and when I can't afford to pay the price demanded, to let the work go undone. We can do nothing in this direction by combination in my opinion.

J. R. Johnson—I differ widely with Captain Haynie. I believe the subject of labor is and should be a matter of regulation by communities, and even by legislation. There should be a difference made between skilled and unskilled labor. We make no difference. If we want a job of work done, we employ the first man that comes along to do it, and ask no questions. We offer no inducement for the laborer to improve, by giving better wages for the skilled workman.

We give the Chinaman just from China, who cannot speak or understand a word of English, and who knows nothing of our way of doing things, the same wages as he that has been here twenty years, and who can be of double the service to us. We, as a people, seem to act on the same policy that governs Captain Haynie: "Let the labor question take care of itself." This indifference is what is causing all our trouble. By this want of system and regulation, by custom or law, we are losing all our best labor. It is true we have no reliable white labor, and the reason is we have driven it all away from us, and we are driving all the most skilled Chinamen away—they are going to New York and Boston, anywhere where skilled labor is wanted and appreciated.

Up to 1855 we had the best labor and the most reliable and trustworthy laborers of any State in the Union, but they have all disappeared. The unsettled titles to our lands has kept immigration away from us, and our had treatment of laborers has contributed to this result. Our State has obtained a bad name abroad. We make no provisions for laborers. Our houses are not prepared to keep and make laborers comfortable. We give them no beds; we require them to furnish their own blankets and lay in the barn or other outhouse.

We treat our laborers as the dumb beasts are treated in other countries. We give them employment in our harvest time, and when this is over we turn them out to shirk for themselves, and then complain that they are shiftless and unreliable. Let us treat our laborers better, and so arrange our business and farming operations as to give them constant employment, then we can regulate the prices of labor so that we can make improvements and beautify our places.

Let us go back to the old apprenticeship system, and require the boy or green Chinaman to learn how to work before we pay him the same wages as the man or educated Chinaman, and if need be let us have laws to regulate these questions; let us at least adopt some plan or system by which we will all be governed in the matter, and let us apply this system to our own children and teach them to be of some account. I do not know a single family in Sacramento that has a son capable of going out into the country and taking charge of and cultivating a single acre of land as it should be.

After some further discussion the meeting adjourned.—*Daily Record*.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

Meeting of Nov. 16th, 1872, President Casey presiding.

Agricultural Experiments.

Mr. Settle moved that a committee of three be appointed to experiment in agricultural matters, and report the results to the Club.

Mr. Cottle thought the Club was very much in need of positive information resulting from carefully conducted experiments, but thought the motion hardly in proper shape, as it would involve the committee in too much labor.

Mr. Settle was perfectly willing to have a better motion substituted.

Mr. Hobson thought that it should be a committee of the whole.

Mr. Cottle said we had been trying that a long time, and had arrived at no positive knowledge; that there were as many different opinions as there were members on most subjects. What we want is, positive information, based on facts and figures.

Mr. Dubois thought that it would take so long to make experiments, that the Club would, in the mean time, forget that it had ever been proposed to make such experiments. He thought that farmers should give more reasons for their opinions; reasons may be remembered, but who pays any attention to opinions?

Mr. Haskell was in favor of a Standing Committee, whose duty it would be to collect information and present it to the Club.

Mr. Ware thought the work entirely too much for one Committee. He is going to

Experiment in Flax Growing.

With a view to see what can be done toward making our own sacks from materials of our own raising. He intends to make a careful estimate of all the expenses and the quality and quantity and value of the fiber; but he did not consider his experiments would answer for a different kind of soil or climate than that in his immediate neighborhood.

Mr. Kennedy did not consider that it was the intention to have the Committee do the work, but merely to ascertain who would experiment and report their experience to the Club.

Mr. Chipman favored the idea; he thought practical results are what we need.

The motion was finally amended so as to read: That a Committee of three be appointed to encourage and systematize the making of experiments in Agriculture and Horticulture; which was carried; and the President appointed Messrs. C. F. Settle, O. Cottle and — Chipman.

The Committee on Taxation and on the sale of Railroad Bonds asked further time.

The Secretary read a communication from the Vacaville and Pleasant Valley Agricultural and Horticultural Association, in regard to a new box for fruit; also in regard to selling fruit on the wharf, which was referred to the committee on Agricultural Experiments.

The Question adopted for discussion at the next meeting is: What are the best Implements for putting in grain.

The Question of the State Union was next taken up. Mr. Ware said he had received two letters on the subject, one from the Secretary, I. N. Hoag, and the other from the Treasurer, A. T. Dewey, which were read.

W. W. Kennedy said he also had received a letter from Mr. Dewey stating that the address of the Farmers' Union—would be ready for distribution soon—and that Mr. Dewey had forwarded to our Secretary copies of the PACIFIC RURAL PRESS, containing the proceedings and Constitution of the California Farmers' Union. Mr. Herring said he had not received them.

Mr. Chipman moved that the matter lie over for two weeks, which was carried, and the Club adjourned.

Napa County Farmers' Club.

Club met Saturday, Nov. 9. President Fisher in the chair.

Mr. Gridley, being called upon, read an interesting essay upon the question of the day, of which the following is a synopsis:

Mr. President and Gentlemen:—The real or apparent antagonism between labor and capital, constitutes the difficulty of this question. The interests of society demand that they should work together harmoniously. That capital demands its pound of flesh, and gets it, where possible, no man doubts. In a government like ours, whose stability depends on the intelligence of the masses, we should be glad to see the masses organize for fewer hours of toil and better pay, that their leisure may be devoted to self-improvement, and their better qualification for the high duties of citizens. Let the education of the masses become universal, and the occupation of those will be gone who would make us believe that labor organizations will revolutionize society, and take forcible possession of the property of the world.

We have no right to charge all the ills that farmers inherit to the price of labor. A better way is to open to reform than by desecrating the sons of toil and putting them off with half an allowance. Let the farmers and mechanics, and other laborers, not only each class organize itself, but all unite to elect law-makers from among themselves, who are allied to them by interest. Be assured there are capable men in our ranks, and more important, honest men. Let us begin by abolishing one-third of the offices and reducing the expenses of the remaining two-thirds; let us simplify our process; let us throttle the liquor traffic by making the seller

responsible for the wrong done by his customer. Our taxes may be thus reduced 75 per cent. by the reduction of pauperism and crime; and society would be so amended as to invite capital and stimulate industry.

Our taxes are now higher than the average rate of interest of the Bank of England. That's what's the matter with the money-market; that is what paralyzes the energy of the country. Let us encourage laborers to come among us by paying them well, and treating them well. Shall we complain of wheat rings, and at the same time be forming a ring ourselves to prevent the laborer from getting all he can for the sweat of his brow. The higher the price of labor, the better in the end for us. But we must not forget the old lines—

"He that by the plow would thrive,
Himself must either hold or drive."

God speed the day when the laborer, and not the political bummer, shall control the Government.

We are told that our good men have left us and themselves become employers, because they have better opportunities here than in the East. If this be true, why are not their vacant places filled by other aspiring and willing men?—for the law of supply and demand governs labor as surely as the law that directs the mountain stream to the sea. Show me how to stop Niagara's flow, and I will show you how to regulate labor when it is scarce?

The poor Chinaman has been kicked from pillar to post till he hardly knows if he has a right to live. God spare them the opinion they must form of a nation professedly Christian, based on the treatment they receive at our hands. Confucius taught better doctrines than they have seen exemplified by us.

Let us be philanthropic enough to wish the condition of the laboring masses better, even at the cost of a little pecuniary benefit to ourselves. Let us not, in this, be "penny wise and pound foolish."

We had better ask, "Why is labor scarce?" instead of "Why is labor high?" for be assured that effects follow causes. Shall I, as a laboring man, ask the law to protect me against competition with the Chinaman? Shall we, as a body of farmers, attempt to limit the value of their labor? No! let us never fear competition with an inferior race; let us take our chances like men, and if we must, let us take the wall, where of right we will belong. If their knowledge and skill exceed ours—if their civilization is better than ours—they deserve to win. If their idolatry is truer than our Christianity, then away with ours! All we have a right to demand is "a fair field, and no favors."

The question being open for further discussion, Mr. Nash said: As he had suggested the question he felt under obligation to say something. He felt willing to do anything in his power to promote the interests of agriculture and kindred pursuits. His idea, in the first place, was not to interfere with white labor, but if possible to regulate that of the Chinese. He had not favored Chinese immigration, but they are here, and we must make the best of it. They are not worth, as farm hands, more than 50 cents per day; one white man is equal to three of them. If white labor cannot be obtained, the only remaining remedy is to cultivate home industry—to make the labor of our children available. He had done this on his own farm and had found it more pleasant and more profitable. Speaking of wheat culture, he thought that the odds were against Napa Valley. Wheat can be raised on the San Joaquin at one-half cent per bushel as profitably as here at two cents. We must convert our soil to some other use. He had turned 100 acres of his place into pasture, and sown 50 in alfalfa. He could make more out of stock than out of wheat. It has been the common complaint for several years that farm labor is too high—the hired man and the tax-gatherer getting all the proceeds of the farms. He proposed to dispense with high labor.

Mr. Krug, of St. Helena, gave his experience with Chinese labor. He had been obliged to hire them, though he preferred white labor. They do pretty well—never do too much. He kept the good ones, and let the bad ones go. He had kept some three and five years. In Sonoma an attempt had been made to fix their wages, but it failed. He pays them from \$25 to \$30 per month. Large vineyards could not be worked at present without them.

Dr. B. K. Rule thought with Mr. Krug—we cannot fix the wages even of Chinese. He employed a first-class man to take charge of his vineyard, and threw all the responsibility on him. His work is well done. Chinese organization is a bug-bear. Haven't they as good a right to organize as Paddy and Hans? It is policy to cultivate the good will of the Chinese. On their arrival here they become wheat eaters. China will be our future wheat market. Manufacturing are being successfully operated with Chinese labor that could not otherwise live. An attempt a few years ago to compel some of the factories on the coast to employ white labor had resulted in their suspension. The Doctor related his experience at an intelligence office in this city to illustrate the fact that labor is not as scarce as it is unwilling.

The discussion was continued by others—all agreeing that white labor is preferable to Chinese, and that nothing can be done, except to pay good ones good wages and let poor ones go.

The Secretary read a communication from the Secretary of the State Board of Agriculture, in which attention was called to the subject of planting trees on public highways. The matter was laid over for discussion at the next meeting, (to-day, 16th,) and the Club adjourned.—Napa Reporter.

San Joaquin Farmers' Club.

A meeting of the Farmers' Club of this county was held at its rooms Saturday afternoon, Nov. 16th. The President, Secretary, and several of the most enterprising and energetic members were present. The question relating to the disposition of the \$250,000 worth of bonds in the Western Pacific railroad, subscribed for by the city and now a subject matter of dispute between the city and Charles McLaughlin, who represents the company, was discussed in all its bearings, and some new ideas were advanced. The vote of the people at the late election decided almost unanimously that they are opposed to a surrender of the bonds, with accruing interest, to McLaughlin for \$100,000, and what now is to be done? The city is evidently entitled to a certain amount of stock in the road, and has for a long period been a large stockholder, entitled to a proportionate share of all the profits in the road to the present time; the fact that no shares of stock have been delivered to the city and that no dividends have ever been declared, will now only serve to complicate matters in case of a law suit. As a company, the Western Pacific has ceased to exist, but its consolidation with the Central Pacific should, it was argued by some, entitle the stockholders in the Western Pacific to their share pro rata of the net earnings of both companies since the consolidation, and of those profits of the Western Pacific previous to the consolidation. How this question is to be solved, or how the amount of those earnings are to be arrived at, will be a knotty problem to be solved in the future. Perhaps a more sensible method of settlement would be for both parties to avoid the expense and trouble of a law suit, and leave the dispute out for arbitration; certain it is that the decision of the people leaves the question in precisely the same condition as it existed previous to the election, and some means should be adopted to determine whether the tax-payers are to be mulcted for a very large amount of money without any return but a dead loss for their outlay, or whether they are entitled to a certain amount of stock in the road and a proportionate share of the profits. The difference between the two will make a very material difference to this country, and some thing definite should soon be arrived at for the benefit of all parties. The Club will meet again next Saturday, as usual.—Republican.

AGRICULTURAL NOTES.

KERN.

Californian, Nov. 14th: FINE COTTON YIELD. Mr. P. A. Stine has just finished picking his cotton, and we learn that it turns off over four hundred pounds to the acre. This is a very gratifying result as an experiment, considering the fact that it was not planted until a month later than it should have been. Some of it also was planted with corn, the two crops growing together, and he was not able to procure the best variety of seed. We learn that he intends to engage extensively next year in the growth of this valuable staple.

NEVADA.

Republican, Nov. 16th: FINE APPLES.—Robinson & Reynolds have received from the foothills of the Sierras a splendid lot of Winter apples, among which we observed the Baldwin, Rhode Island Greenings, Bellflower, and other popular varieties.

WOOL.—Nine cars, loaded with 150,000 pounds of wool, passed through town to-day, going to the New England States to be manufactured and then sent back, perhaps, to California. Only one-fifth of the woolen goods used in this State are manufactured here. How much better it would be if the people of California manufactured their own woolen fabrics, instead of sending the raw materials 3,000 miles away to pay profits to Eastern railroad companies, Eastern capitalists and Eastern labor.

A FAILURE.—A large number of chickens were recently shipped from Iowa to a party in Truckee. Many of them died on the way, and those that survived the journey were rendered worthless for want of care on the way. California should raise its own poultry, even if it has to send to Utah for Mormon eggs to do it with. Eggs from Salt Lake are said to be prolific, some of them when properly persuaded and hatched, producing two chickens each.

PREPARING FOR THANKSGIVING.—Chickens, turkeys and ducks for Thanksgiving are numerous in town, being brought from Sierra Valley. The people of Truckee have much to be thankful for this season, and they are not going to fast much on the 28th day of this month. Even the Chinese intend to obey the Governor's proclamation and observe Thanksgiving, for they have made several successful raids on henroosts lately in this vicinity.

Transcript, Nov. 16: BEAUTIFUL WEATHER.—The weather for several days past has been most beautiful. Yesterday, the atmosphere was so clear that the foliage on Banner Hill could be as distinctly seen as though the view were just beyond the city limits. The balmy air and pleasant sunshine is enough to make the limbs of the rheumatic as supple as a child's, and make the aged feel that the fountain of everlasting youth was near at hand.

The roads are improving rapidly and in a day or two more will be in splendid condition. Now is the time for pleasant rides. No country on earth can boast of such a climate as California in the middle of November. The nights are as pleasant as the days.

ANTA BARBARA.

Press, Nov. 16: SPLENDID CORN.—Mr. J. G. Foster, of La Patena, has left at our office some ears of better, larger and heavier corn than we ever saw in the Mississippi Valley. He calls it Indiana dent corn, the seed being imported from that State last year. It ranges from 24 to 40 rows to the ear, and some of the grains are three-quarters of an inch long. It was not hoed, plowed or suckered, and the yield is about 120 bushels to the acre. The seed was planted after the rains had fallen and the crop needed no further care till it was harvested. The corn may be seen at our office. Who can beat that?

SAN JOAQUIN.

Republican, Nov. 6: TROUT.—About the time of his first conception of the idea of conveying the waters of the Blue lakes to this valley and San Francisco, W. V. Clark, the projector, stocked those waters with imported trout spawn, and the result has exceeded his most sanguine expectations; the waters are now filled with myriads of these choice fish which are increasing in size and number, and when his arrangements are completed he will be able to supply all the markets in the State with that desirable article of food.

SANTA CLARA.

Mercury, Nov. 14: WHAT OUR FRUIT AMOUNTS TO.—Very few of our citizens have any adequate idea of the amount of fruit raised in this valley, or of the disposition made of it. During the month twenty-four car loads of fruit have been sent from this valley to the East, consigned to parties in New York, Boston, Chicago, St. Louis, and other cities. This it will be seen is about one car load for each working day in the month, and is more than the amount shipped from all the balance of the State. But this is not all we do. During October we have shipped from this county to San Francisco 630,840 pounds of fruit. This is the amount which has actually passed over the road, and does not include the immense lot still on hand under contracts for delivery. Santa Clara county is beginning to be known all over the world for the perfection of her fruit.

SANTA CRUZ.

Sentinel, Nov. 16: EARLY SOWING.—We noticed a day or two since some of the farmers dusting in their oat crop for the coming year. This is a sure way to secure a crop of hay in a dry season, for the crop gets the full benefit of all the rain that falls. In Contra Costa county thousands of acres of wheat are annually gathered in in this same manner, and the crop has, even in wet seasons, proved better than late sown crops. There is much of our upland that could be put into grain in this manner, and save the great expense incurred in preparing soil after rains. The hay crop, which with us is greater than any other, might nearly all be farmed after this fashion.

APPROACHING RAINS.—The recent heavy white frosts which night after night have made the morning air so cool and bracing, are a certain indication of approaching winter; and the longer the first rains hold off, the more certain are we, judging from the past, of severe and continuous rain. Our usual September and October rain did not come; and this season so much resembles every other wherein the rains were copious, that we feel like predicting at least an unusual rainfall the coming winter, or rather spring—for we have no winter in Santa Cruz—such as many of us were familiar with in our Eastern homes.

SONOMA.

Bee, Nov. 16th: FRUIT WASTED.—In several of the small vineyards in the vicinity of town the grapes were left to rot on the vines this season, the owners not caring to take the trouble to pick them. And the grapes raised here are generally of good quality. This waste of fruit is to be regretted, it being so much clear loss. If a profitable market could not have been found for the grapes, why could they not have been picked and dried for raisins? This is being done in several parts of the State, with profitable returns for the labor performed. We hope to see the people of Cloverdale pay more attention to their vineyards in future.

HOOS.—Mr. P. M. Daly, a cattle dealer of San Francisco, recently purchased 2,500 hogs about Clear Lake, which he has shipped to the city. The last drove of the lot was sent down from here on Monday.

OREGON.

Oregonian, Nov. 8: MOUNT HOOD A VOLCANO.—At intervals during yesterday afternoon a column of smoke was seen to rise from the very summit of the mountain, reaching heavenward like a pencil several degrees, and would then rift away toward the north and disappear. There are those who scout at the idea that Mount Hood has ever manifested any positive volcanic indications; but certain it is that the smoke which is so frequently seen to ascend from the summit could not arise from burning timber lying within the regions of perpetual snow; and if not from the timber, from what other sources could smoke arise but the interior of the mountain.

The walnut and peach came from Persia. The horse-chestnut is a native of Thibet. The radish originated in China and Japan.

FARM HINTS.

Peaches--Variety and Succession.

It is important to those who are intending to commence or extend the culture of the peach, to know something of the kinds best adapted to succession, that the market may receive a continued supply; for it is just as easy to grow a succession of marketable fruit as to have the whole crop ripen in a month.

Take our very best varieties of peaches and there are some that ripen months before others, so that in selecting peach trees at the nurseries we should look to the period of their ripening as well as to the quality; as by a proper selection we can have this delicious fruit ripening from June to November. We give the following list of some of the finer varieties, in the order of their ripening:

EARLY TILLOTSON, ripens from June 25th to July 1st, and is the earliest good peach in cultivation. Flesh white, red around the stone. Skin a dark red on the sunny side, and thickly dotted with red on the other portions. Fruit of a medium size, rich and juicy. Though a free-stone, the flesh slightly adheres.

EARLY YORK, a free-stone, ripens from July 4th to 8th. Fruit large, remarkably tender, and full of rich, luscious juice, and one of the very best. Skin very thin, thickly dotted with pale red on the shady side, with a deep red in the sun; flesh white. For beauty of appearance, and rich flavor this variety is unsurpassed.

COLE'S EARLY RED, a free-stone, ripens from July 10th to 15th. Fruit medium size, white flesh, skin of beautiful red color, juice rich, melting and sprightly, nearly equal to the Early York, which it succeeds. Bears large crops.

RARE RIFE, a free-stone, ripens July 15th. Fruit large, white flesh, red at the stone, juicy, tender, and very high flavored. Skin white, covered with red dots, and deep red on the sunny side. Very productive.

GEORGE FOURTH, a free-stone, ripens July 20th. Fruit medium size, flesh pale, tender, with a remarkably rich, high flavored juice. Skin pale white, with a red cheek on the sunny side. A moderate bearer. Considered one of the highest flavored peaches in cultivation.

CRAWFORD'S EARLY, a free-stone, ripens July 25th. This is a most excellent yellow fleshed peach, and is not surpassed by any other kind in size and beauty of appearance. One of the most popular market fruits. Fruit very large, skin yellow, with a brilliant red cheek, melting, sweet and juicy.

OLDMIXON FREE-STONE, ripens August 1st. Fruit very large, flesh white, red at the stone, melting with a superior rich, sugary, sprightly flavor. Very productive, and one of the very best. Skin creamy white, red on the sunny side.

CRAWFORD'S LATE, ripens August 8th, and is a most magnificent fruit, unequalled among the yellow fleshed peaches. Fruit very large, flesh yellow and very red at the stone, tender and juicy, with a rich vinous flavor. Skin bright orange, with a brilliant red cheek. A superior productive market fruit.

OLDMIXON CLING-STONE, ripens August 15th, and is one of the finest flavored varieties in cultivation. Fruit large, flesh white, very juicy, with an uncommon rich, sprightly, luscious flavor. Skin yellowish white, with a bright red cheek. Very productive.

LATE ADMIRABLE, a free-stone, ripens Aug. 20th. Fruit very large, flesh greenish white, red at the stone, tender and juicy, with a rich, delicate flavor. Skin pale yellow, with a pale red cheek.

LA GRANGE, white free-stone, ripens Aug. 25th. Fruit large, tender, juicy, sweet and with a delicious flavor. Skin greenish white, a little red on sunny side. One of the very best of late peaches.

HEATH CLING, ripens about September 15th, and continues ripening until late in October, being the latest variety in cultivation. Fruit very large, flesh greenish white, very tender, remarkably juicy, and of most luscious flavor, indeed unsurpassed in flavor. One of the very best.

We have thus given a list of choice varieties of this unsurpassed fruit, which will afford the cultivator a continuous supply from the last of June to the first of November, a range of peach season not surpassed in any temperate clime. There are many other varieties, equal to some of those here presented, and which might have been included, but our object has been to describe only the very best, without including those which ripen at the same time.

THE CORN AND BARLEY CROP OF THE UNITED STATES.—The corn crop, according to the October report of the Agricultural Department, promises to be one of the largest ever grown. Only five States, Maryland, Virginia, Delaware, Florida and Arkansas, return less than the average. Rhode Island has just the average and all the rest are above. The average for all the States is 108. California is set down at 104, and Oregon 103. The October crop has increased three per cent. over last year.

The indications are that the barley crop will not be so large as last year, and the quality is also below the average.

Fattening Turkeys.

Thanksgiving and Christmas are not far off, and the sooner we begin to fatten our turkeys the heavier they will become, and it is often quite as profitable to send them into market at that time as at a later period. It is well to commence, with light feed, such as oats and buckwheat, given in equal quantities at morning and night, scattering all that they can possibly eat. In a week leave out the oats and substitute corn; and the third week drop the buckwheat and feed on corn alone. Dough once a day, made of boiled corn meal, is recommended by some breeders, but turkeys need no other mills than those they possess with which to grind their food. Their gizzards work with tremendous power, and the machinery is of such a character that its workings are essential to the health of their bodies. Give them now all the corn they can dispose of, and if fed on a dry smooth turf, it can always lie within their reach, and as they will never clog themselves by over-eating, it is better to keep a large supply always at hand, and let them pick up the kernels at their own pleasure.

It will make a great difference in the value of the food given to turkeys whether there is an abundance of pure water always at hand; if they are stinted in the supply, the corn will not digest as readily; and when the weather is windy and chilly, they will not go even half a dozen rods to procure as much as is needful for fattening purposes; so the farmer will find it to his advantage to supply it in large quantities. Although turkeys are very hardy fowls, yet they should always have some shelter provided at this season, such as a sunny shed, on the south side of a board fence, for they will rather sit for a day on the sunny side of a barn than walk two rods when the north wind is blowing hard.

It is also important to beguile them into roosting under some shelter at this season. It may be done by commencing to feed them under it the first night that food is thrown out to them, and always having corn thrown down for them in that place at night. It requires a certain amount of food to produce the needed amount of heat; so the less they are exposed to the cold, frosty air at night, and the more comfortably they are housed the more rapidly they will fatten.

Quantities of food, plenty of pure water and comfortable warm quarters will fatten turkeys expeditiously without resorting to any shutting up or cramming process.—*J. in Country Gentleman.*

Fattening Animals.

The *Popular Science Monthly* gives these items relating to the manner of producing excessive fatness. It says:

Numerous experiments have been made on geese, ducks, pigs, bees, etc., which go to prove that these animals accumulate much more fat than can be accounted for by the quantity present in the food. M. Flourens had the bears in the Jardin des Plantes fed exclusively on bread, and they became excessively fat. Bees confined to a diet of purified sugar continued to produce wax, which strictly belongs to the group of fats. But whatever its source, the excessive use of non-nitrogenous food, conjoined with inactivity, frequently leads to the deposit of an inordinate amount of oleaginous matter. This fact is illustrated by numerous instances both among the lower animals and among men. At Strasbourg the geese are fattened by shutting them up in darkened coops within a heated room, and stuffing them constantly with food. The high temperature lessens the escape of the heat, and thus favors the process. Here all the conditions for insuring obesity are resorted to, viz.: extended heat, obscurity, inactivity, and the cramming of animals with fattening food. A still greater refinement for pandering to the appetite is resorted to by the Italians, who relish the fat of the ortolau. To procure this in perfection, the natural habits of the bird were watched, and it having been found that it only takes food at the rising of the sun, they cheat the birds by producing an artificial sunrise. To effect this, the ortolau is placed in a dark, warm chamber, which has but one aperture in the wall. Food being scattered over the floor, a lantern is placed at a certain hour, in the opening, when the birds, misled by the dim light, at once commence feeding. The meal finished, the lantern is withdrawn and more food scattered about, when the ortolau sleep. Two or three hours having elapsed, and digestion being completed, the lantern is again made to throw its light into the apartment. The rising sun recalls the birds to the habit of again feeding, and they again sleep with returning darkness. This process is repeated several times in the twenty-four hours, and in a very short time the ortolau becomes literally a ball of fat, which strung on a wick, is said to make an excellent lamp.

A PROLIFIC YIELD.—The superior adaptability of the red soil of the foothills for grape production is attested by the healthful growth of the vine at Auburn, in Placer County. The *Stars and Stripes* relates that a single branch, out from the vineyard of Mr. Barnhart, of that town, yielded seventy-nine ounces, or nearly five pounds of grapes. The branch was of the California variety, and was grafted into a foreign stock on the 12th of March last.

Chicory in California.

The *Stockton Independent* describes the Pacific Chicory Works, located in Stockton. In addition to the necessary machinery for cutting and grinding the roots, apparatus for roasting, etc., there is an extensive kiln for drying the roots more thoroughly than can be done by exposure to the atmosphere. The works are new and the facilities are ample for the manufacture of five tons of chicory per day, and extensions and additions will be made as business necessities may require. The *Independent* then adds as follows:

This is comparatively a new enterprise in California, and one which will doubtless soon become a very large and important interest. It is estimated that not much over 2,000 tons of chicory roots were produced in this State in 1871, and the product the present year is figured at a little in excess of five thousand tons. The drought prevailing in 1871 was decidedly unfavorable to the growth of the root, and several parties who ventured to cultivate it, so completely failed that doubts of success prevented them from entering upon that pursuit the present year. The business of raising chicory along the bottom lands of the Calaveras, and likewise on much of the land bordering upon the San Joaquin, has been followed to an extent sufficient to demonstrate its safety and profit in ordinary years most conclusively. The proper cultivation of this plant necessarily involves a considerable amount of labor and attention; but in favorable seasons the yield, on suitable soil, is really enormous; and the profits vastly more than can be obtained from cereals. Thirty tons of the roots have been obtained from a single acre, and is calculated that the yield in San Joaquin county the present season will average from fifteen to twenty tons per acre. The proprietors of the Pacific Chicory Works pay \$15 per ton for the roots laid down at their establishment. The manufacturers express the opinion that the growth and development of this interest and source of wealth will be slow in this State, from the fact that the action of the last Congress in reducing the duty on the imported article from Europe, not only brings the California producer into direct competition with the foreign laborer, but actually places the Pacific coast venture at a positive disadvantage. Chicory raised in the German States can be laid down in New York for \$12 per ton freight, whereas the freight on the California product laid down in the city, is about one-third more than it is from Germany. It is contended, therefore, that the production and manufacture of chicory in California, under existing circumstances, will be limited to the supply of home demand.

THE ENGLISH WHEAT CROP.—It is estimated that England will this year be compelled to purchase abroad fully two-fifths of her breadstuffs on account of a deficiency in her crops. For this she will expend perhaps one hundred millions of dollars. In addition to the falling off of about one-half more than the previous year in her wheat production, from thirty to eighty per cent. of the potato yield is unfit for human food, and fears of the ricecrop have compelled the Government to restrict the importation of cattle. The grain-raising States of America will profit largely in the competition to supply England's food wants, and none more so than California, whose wheat is always a preferred article, and for which the demand will no doubt continue steady, at firm if not gradually advanced prices.

Can Fruits, Etc.

The packing season being over, can fruits are evincing a decidedly upward tendency. In Jams and Jellies there is a good supply, and the demand is fair. Sales have been light during the month, but now as winter approaches there will be more demand. There never is an extra demand while the fresh fruits are in the market. The demand for Fresh Fruits in Syrup is quite large, and very large sales have been made for the last two months. Some very large lots, particularly to country stores, have lately been sold. The most of these have gone to the mining regions to Nevada, Utah, Colorado, and especially Montana, the people of which probably use more canned fruit in proportion to their numbers than any other in America. However, the trade this year though quite brisk, has been somewhat light as compared with former years. There have been very large sales of Assorted Pie Fruits during the month, and prices have advanced. Vegetables must necessarily advance as nothing can now be put up for twelve months, and as last year's supplies were rather short. Eastern Green Corn, particularly Winslow's, is in good demand and rates are well maintained. There is a very large supply of honey in the market. Very great quantities are being shipped here from Los Angeles and San Bernardino, where there is raised immense quantities, and where preparations are being made to raise still more. Salmon is very scarce and rules very high—higher than it has been known for years, owing to the extensive shipments abroad. The supply of Oysters is very limited, and rates rule very high.

The Cotton Crop.

There is no question of more moment to our textile interest, just at present, than the probable future of prices of this leading staple. As the season progresses and the dangers attending the safe gathering of the crop are overcome, its amount can be estimated with a fair degree of accuracy, and a proper basis fixed for future prices. It is now admitted that the American crop of 1872 will considerably exceed that of last year, and the prospects at the latest dates were also favorable for an increased yield from India, Egypt, and Brazil. In any event, there is not likely to be a diminution in the crops of these countries, and calculations may be safely based upon a product fully equal to that of 1871. The reports of the Agricultural Bureau at Washington furnish a better idea of the probable number of bales which the crop will yield than is usually given at this time of the year. It is a noticeable fact that the reports of this Bureau, if at all partial, are made to favor the interests of the planters and dealers rather than spinners; hence we deem it safe to accept its estimates as rather below than above what the actual yield will be. The acreage this year, according to this authority, is 8,656,504, an increase of 945,305 acres over last year.

The average yield per acre last year was 385-1,000 of a bale, making the total yield 2,974,351 bales. Calculating upon a similar yield this year, and the increased acreage will give us a crop of about three and one-third millions. In addition to this, however, we have an improvement of six per cent. in the condition of the crop on the first of October. The estimate upon that date was eighty-two per cent., against seventy-six per cent. at the same date last year. This is a reduction of nine per cent. from the September estimate. The weather reports at present are favorable for a safe gathering of the bulk of the cotton yet unpicked, and it is encouraging to note the fact reported from some sections that planters are bending all their energies to picking, and manifest less anxiety to rush the staple into market than they usually do.

Last year the total consumption of the United States was 1,097,540 bales of which 977,540 bales went into the northern mills; our exports to foreign countries were 1,957,314 bales; and the stock in the country at the beginning of the year was 59,287 bales. There seems to be a probability that Europe will not require more American cotton this year than she took last, although the exports thus far have shown an increase over 1871 fully proportionate with the increase in the receipts at our ports, and probably the natural result of the unusual volume of the receipts. The stock of American cotton in Liverpool is nearly double that of this time last year.

The question for especial consideration is whether prices can be at this time sustained? Late Southern reports have been to the effect that growers would hold for twenty cents, but the statistical position here and abroad, and the condition of the manufacturing interests, make it unlikely that they will be able to realize any such price. The increased consumption of Southern mills will eventually result beneficially to the planter, but as yet the requirements of spinners at the South are too small to enable them to control prices against the Northern mills. The range of prices at which futures are selling indicates the feeling among speculators, but it is a noticeable fact that the Southern houses are cautious operators in contracts, and by no means show that degree of eagerness to go "long" that was manifested last year.—*U. S. Economist.*

The Sea Swallow and the Fishermen.

An interesting association exists between the sea swallows and the fishermen of Lake Pallagieri, in Lapland. In the center of this lake is an island, on which the fishermen build their huts in Summer. At early dawn the swallows gather round these huts, and their cries admonish the occupants that it is time to begin the day's work. The boats are hardly loosened from their moorings when the birds start out to find a spot where the fish are abundant. The boatmen are governed entirely by the movements of the swallows. When the birds stop and redouble their cries, the fishermen know they have found a spot where they will be repaid for their labor. They hasten forward, cast their nets, and soon have the satisfaction of finding them well filled. In accordance with the old maxim, that the laborer is worthy of his hire, the swallows receive their share of the booty. Every fish that the fishermen throw up in the air is gracefully caught by the birds; and, indeed, they are so tame that they sometimes come into the boats and help themselves out of the nets. If one spot becomes unproductive, the birds lead the way to another. Toward evening men and birds return to the island, and the birds hasten to clear the boats of the share left behind for them by the fishermen.

ANIMAL FATS.—Mene has stated to the *Academy of Sciences* that at different ages of life, the same animal species have fats dissimilar in melting and solidifying points, and in density. Also that the melting and solidifying points rise with age, and the density of the fat increases.

USEFUL INFORMATION.

Facts About Belting.

CEMENT FOR EITHER LEATHER OR RUBBER BELTS.—"Gutta percha, 16 ounces; India-rubber, 4 ounces; pitch, 2 ounces; linseed oil, 4 ounces. Cut the rubber in shreds and add the oil, which in a few days will have softened the former. Melt carefully the gutta-percha and pitch together, and stir in the rubber solution or paste. Apply hot to and press the joints."

If two shafts in the same plane, but not parallel, are not belted together, the belt will run towards the ends which are nearest.

A running belt, nearly vertical, will run to the highest side; but belts running nearly at an angle of 45° to horizontal, will run to the end of the pulley where the shafts are nearest together, the pulleys in both cases being straight-faced.

TO LACE A QUARTER-TWIST BELT.—Put the belt on, and bring the ends together in the usual way; then turn one end inside out and lace. The belt will run, it will be found, first one side out and then the other, and will draw alike on both sides.

The theory of cone pulleys is a complicated and difficult one, one element in the solution of which is the distance between the axes of the pulleys; and it is only when this distance is very great in comparison with the diameter of the larger pulley, or when the two pulleys are nearly of the same size, that the rules commonly given will apply. If belts were made of some inextensible substance, the difficulties of adjustment would require more accurate rules; but, fortunately, leather belts readily accommodate themselves to slight errors of construction, although not running in such cases with equal tension.—*Sci. Am.*

MOONLIGHT REFLECTIONS.—When standing by a lake side in the moonlight, you see, stretching over the rippled surface toward the moon, a bar of light which, as shown by its nearest part, consists of flashes from the sides of separate wavelets. You walk, and the bar of light seems to go with you. There are, even among cultivated people, many who suppose that this bar of light has an objective existence, and who believe that it really moves as the observer moves—occasionally, indeed, as I can testify, expressing surprise at the fact. But, apart from the observer, there exists no such bar of light; nor when the observer moves is there any movement of this glittering line of wavelets. All over the dark part of the surface the undulations are just as bright with moonlight as those he sees; but the light reflected from them does not reach his eyes. Thus, though there seems to be a lighting of some wavelets and not of the rest, and though, as the observer moves, other wavelets seem to become lighted that were not lighted before, yet both these are utterly false seemings. The simple fact is that his position in relation to certain wavelets brings into view their reflections of the moon's light, while it keeps out of view the like reflections from all other wavelets.—*Herbert Spencer.*

TO CUT AND BORE INDIA RUBBER STOPPERS. Dip the knife, or cork borer, in solution of caustic potash or soda. The strength is of very little consequence, but it should not be weaker than the ordinary reagent solution. Alcohol is generally recommended and it works well until it evaporates, which is generally long before the cork is cut or bored through, and more has to be applied; water acts just as well as alcohol, and lasts longer. When, however, a tolerably sharp knife is moistened with soda lye, it goes through the india rubber quite as easily as through common cork; and the same may be said of a cork borer, of whatever size. I have frequently bored inch holes in large caoutchouc stoppers, perfectly smooth and cylindrical, by this method. In order to finish the hole without the usual contraction of its diameter, the stopper should be held firmly against a flat surface of common cork till the borer passes into the latter.—*Chemical News*

BOSTON—ORIGIN OF THE WORD.—In the seventh century a pious monk, known as St. Botolph, founded a church at a place called Y-cean-ho, on the English coast, Lincoln Co. The town which grew up around it was called Botolph's Town, contracted into Bot-olp's-ton, Bot-os-ton, and finally Boston. It was from this town that the Rev. John Cotton came to America, and gave the same name to the seaport in which he settled in Massachusetts.

SHAPING SOFT RUBBER WITH A FILE.—President Morton, of the Stevens Institute, tells us that he finds the ordinary thick sheet rubber used in making up lantern tanks and for many similar purposes, may be readily dressed into exact shape with a file, if only it is supported by being clamped between plates of wood or metal in the vise. The file is used dry, and in all respects as in working on wood or metal.

A MOSQUITO FRIGHTENER.—Mr. A. D. Breazele, of Alabama, has patented a mosquito frightener composed of the following formidable ingredients: Oils of pennyroyal, savin, origanum, terebinthine and sassafras, tinctures of lavender, chloroform and arnica, gum camphor, nitre, alcohol and kerosene oil. If the Alabama mosquitoes can stand such a preparation as the above, they are proof against anything, and the only remaining thing to be done is to set mouse traps to catch them.

DISINTEGRATING VEGETABLE FIBER BY STEAM. The process of disintegrating vegetable fiber for paper stock or for other purposes by the expansive force of steam compressed within the pores of the material, and then allowed to expand suddenly, may not be familiar to all. The operation is performed by means of a strong retort called the "fiber gun," at one end of which is a steam-tight door or valve, so constructed as to be closed and fastened very firmly, but also that, when desired, the fastenings can be instantly loosened, thus allowing the valve to fly open under the internal pressure of the steam. This retort is filled with the material to be disintegrated, the door or valve is closed, and a pressure of from 160 to 200 pounds is admitted, filling the retort and all the pores and interstices with the material. The valve is then released, and flies open with an explosion. The material is shot out of the retort or gun, and the steam compressed within the pores of the material suddenly expands, when the external pressure is relieved, tearing the fiber to pieces. This apparatus is called Lymau's Fiber-gun."

USE OF TANNIN IN THE MANUFACTURE OF BEER. It is stated by a German authority that the tannin extracted from the gall-nut possesses all the qualities of that which is contained in the flowers of the hop-plant, and that the property of the flowers of preserving and clearing the beer are due to these qualities of the tannin. Fifteen ounces of tannin are stated to be equal to five hundred ounces of the best hops for clearing and preserving the liquor. The tannin is dissolved in eight or ten times its weight of water, and mixed with the wort during ebullition. It is stated to effect a complete clarification, and a deposit well thickened may be seen rapidly forming in the coolers. It is therefore claimed that if the aroma and bitterness of the hop can be dispensed with (a big "if" in our opinion), hops can be advantageously and completely replaced by tannin, which gives a beer sweet and vinous. An entirely new manufacture of beer without hops is thus rendered possible. The employment of wood shavings and other substances containing tannin in condition to be utilized is suggested, and a new era in the manufacture of beer is predicted.

COFFEE.—For reasons not revealed, there is a growing deterioration in coffee, from every source of production. It is probably the same cause that deteriorates all fruits and other products, viz., confining cultivation to constant selections without variation. In time, like intermarrying cousins, this inbreeding runs out all vegetable stock. The world is being relieved of worn out tea plants, by new growths in new soil—in India. That country is going very extensively into the coffee culture. Already we find in English papers praises of India coffee that rivals Mocha, Java, and Jamaica. Coffee, in India is becoming an important article of agriculture and export. In the southern counties of Cal., coffee can be grown. We understand that this is demonstrated; and we are assured that, once in bearing, the coffee trees demand little care and insure large profits.

EXPERIMENTAL CHEMISTRY.—Workmen were lately employed to clean out the grease and paint from the inside of the steam cylinder of one of the large ferry boats of the New Jersey Central Railway Company, opposite this city. For this purpose the piston had been duly removed and three men went down into the cylinder, which is 11 feet deep and 50 inches in diameter, taking with them a pail of benzine (petroleum naphtha) which liquid they used in softening the grease. Suddenly a small snake-like streak of flame started from under the hands of the man nearest the benzine pail, and the next instant an explosion occurred and scattered the burning fluid over the persons of the men.

SOLID BOTTOMS FOR FIRE GRATES.—Now that the price of coal is high all over the world the following will be read with interest by the consumers of that indispensable article:—The most practical suggestion yet made toward economy of coal, seems to be the use of solid bottoms in ordinary fire grates. It is asserted, and indeed proved, that in any fire place not excessively small, a plate of iron placed upon the grate will save the consumption of coal, reduce the smoke, and leave a cheerful free burning fire. Quite sufficient air enters through the bars, no poking is necessary, and the fire never goes out till the coals are consumed. There is no ash, and no dust, every particle being consumed. Any householder can try this experiment, and reduce his coal bill, say thirty per cent., at the cost of a shilling.

HOW TO DECOY A PIG.—A correspondent, speaking of the difficulty of swine-driving, says it is as "easy as whistling after you know how," to wit: To the end of a cord tie an ear of corn; drop it in front of a pig within five or six inches of his nose, and commence walking away in the direction you wish him to propel. If his pigship shows evidence of blighted hopes or aberration of mind from the singular conduct of the corn, seduce him into the belief that it is "all right" by letting him have a brief nibble at it, and then resume your line of march. In this way the most obdurate pig may be decoyed at a reasonable distance.

A HARMLESS HAIR DYE.—Dr. K. Kurtz's harmless hair-dye is made in Greece from green walnut burs *Juglans regia* by extracting with water and evaporating until the regianic acid is precipitated as a black powder.

GOOD HEALTH.

The Cause of an Early Loss of Beauty.

The evils arising from the transgressions of the laws of health, find their greatest extreme among women. Shut up in houses nine-tenths of their time, with either no exercise, or that which is of a limited, irksome sameness, they are, as a consequence, naturally pale, soft, and tender; their blood is poorly organized and watery; their muscles small and flabby, and the force and functions of their bodies, as a whole, run low in the scale of life. A spurious fullness in the outline during girlhood, which usually melts like snow under an April sun whenever the endurance is put to the test, as in performing the functions of a mother. The change in appearance from the maiden of one year to the mother of the next is often so striking and enduring that it is difficult to believe that we are looking at the same person. The round, pleasing shape is prematurely displaced by a pinched angularity, and an untimely and unseemly appearance of age. Travelers from other countries, who have had extensive means of observation and comparison, have remarked upon the great beauty of American women, and the early age at which it is lost. Some have ascribed this to the climate; but more intelligent observers agree that it is mainly due to a hot-house, enervating mode of life. English ladies of rank who, by the way, are celebrated for retaining their beauty even to a ripe old age, think nothing of walking a half a dozen miles at a time; while American ladies would think such a thing "perfectly dreadful." If American women, so daintily and richly fed, will sit in dark and sultry rooms the live-long day, they must expect to bloom too soon, to hasten through this charming period—at the longest in about ten years—and for twenty-five years after, have the grim satisfaction of being thin, wrinkled, angular and sallow.

Bad Air.

Air, the breath of life is the first want of the human being, and it is also the last. At every pulsation during life we need this life sustaining element. Yet one would suppose, by the bad ventilation of houses, churches and theaters, that a man was made to live without air—at least, that it was a matter of indifference whether he had much or little, or whether it was good or bad. We read in the papers of the death of persons from suffocation in wells, mines, or by escaping gas, and we are startled, wondering why people will be so careless; yet thousands of people die by inches, or only half live, in consequence of the impurity of the air which they breathe. If one is shut up in a small room without any admission of fresh air, the air contained within the room soon becomes impure by having been breathed over and over, and very great lassitude or depression of life and spirits is the consequence. The blood requires to be revitalized constantly within the lungs by coming in contact with atmospheric air. Indeed, that is the whole office of the lungs, to aerate or revitalize the blood (which is there met by the atmospheric air), and change it from dark venous blood to bright scarlet arterial blood, thus preparing it to carry life to every part and tissue of the system. In the lungs the blood loses many of its impurities, and takes on the life giving oxygen from the air; and in proportion as the air is abundant and pure which we breathe, in that proportion we have the glow of health and the enthusiasm of living which comes from well-ventilated blood.

SLOW POISONING FROM GREEN WALL PAPER.—A physician in western Massachusetts recently had a lady patient who, for several weeks, had been suffering from nausea, general prostration, and other symptoms of slow poisoning. Failing to discover the cause of the symptoms, as a last resort the doctor requested her to move from her chamber, the walls of which were covered with paper of a very light shade of green, so light, indeed, that in the evening it could hardly be distinguished from white. After leaving the room the symptoms immediately disappeared, and the patient rapidly recovered. A sample of the paper was forwarded for analysis to the State chemist at Hartford (Joseph Hall, of the High School), and was found to contain a large quantity of arsenic. Mr. Hall obtained the poison in the various forms of metallic arsenic, yellow tersulphide, silver arsenite, and arsenious acid, or common white arsenic. He estimated that every square foot of this innocent looking paper contained an amount of the poison equivalent to five grains of arsenious acid, or double the fatal dose for an adult person. This in the moist warm weather of July and August was amply sufficient to keep the air of a room constantly impregnated with the poison, and any person occupying such a room would be as certainly poisoned as though the arsenic had been taken into the stomach.

Opium is imported into the United States at the rate of five millions of ounces a year, at a cost of two millions of dollars in gold.

Mortality in San Francisco for September, 1872.

In the report of the Board of Health of this city, for September last, we find the following: There was a decided diminution of mortality in September, compared with the month preceding it. Though the beginning of autumn, when zymotic diseases are prone to increase, it by no means marks an unhealthy period. In 1868, when we suffered from the small-pox epidemic, in 1869, and in 1870, there were more deaths in September than in the same month of the present year. In 1871, however, the mortality was somewhat less. Comparing the present September with the same month a year ago, we find some points of difference, but many of similarity. There was a much greater mortality from cholera infantum, hemoptysis, hydrocephalus, and paralysis, in the former year, and pneumonia, in the latter. The deaths from atrophica, apoplexy, debility, diseases of the heart, typhoid fever, inanition, meningitis, and consumption were about equal in both years. The extraordinary mortality from meningitis in August last was not repeated in September, and but half as many deaths from convulsions occurred in the latter month. Thirty-eight per cent. of the deaths were of children under five years of age; thirty-nine per cent. were females; and forty-two per cent. were natives of California. Fifty-two, or twenty per cent., died in the public institutions. Total number of deaths 260.

CHLOROFORM AS AN ANÆSTHETIC.—M. Demarquay states that the action of both chloroform and morphine is to lower the animal temperature, and that a combination of the two causes a decrease of 2½° C. It is asserted that the use of both agents combined as an anæsthetic is extremely dangerous. During an operation performed upon a patient under the double influence, it was remarked that the circulation became interrupted, the arterial blood turned black, and repeated fainting fits took place. In order to avoid these grave consequences, M. Demarquay considers that chloroform should be used singly, but not administered in the ordinary manner. He proposes, instead of saturating a compress or sponge with the agent, to use a flannel mask, on which the chloroform contained in a graduated bottle is turned drop by drop. The evaporation is continuous, and the patient breathes without effort. A year's experience with this apparatus proves that by its use all struggling during the period of excitement is obviated, and that insensibility is easily and gradually attained.

BEDS.—These are necessary, as well as convenient and comfortable; but like all other things in this world, there are good and bad beds. Feather beds are injurious to health, and should, therefore, be dispensed with. The way in which many manage them is also very absurd; they rise from them in the morning, make them up steaming hot, close the doors and windows, all till bed-time. Then the scene is acted over again. All beds should be most thoroughly aired after being used, that the gases and odors imparted to them from the human body may be removed. The room, also, should be well ventilated. There are many materials that make more healthful beds than feathers, among which may be enumerated hair, husks, straw, springs, etc.

COLORS SPECTACLES.—The *Scientific American* quotes from a medical authority: "The photographer uses orange colored glass to exclude the actinic rays of light, and why some optician has not had the genius to see that orange is the proper color for spectacles, instead of green or blue, for persons with weak eyes, is beyond my comprehension. A room in the hospital with which I am connected, is lighted through orange colored windows, and is used by patients who have certain diseases of eyes requiring the exclusion of the actinic rays of light. It has been very satisfactory. Orange is also, I believe, the proper color for bottles containing chemicals affected by light."

SACRIFICES TO FASHIONABLE SURGERY.—Under this head the *London Medical Press and Circular*, referring to the increasing number of deaths from chloroform, considers it the duty of British surgeons to investigate more fully than has yet been done, the comparative harmlessness of ether. The editor concludes an article on it in these words:

"Without expressing more than a very strong suspicion in favor of ether, we unhesitatingly say that every life lost by the use of chloroform while we remain in comparative ignorance as to the loudly declared security of the rival anæsthetic, is a sacrifice not to the exigencies of surgery, but to inconsiderate prejudice."

ENAMELED COOKING UTENSILS DANGEROUS TO HEALTH.—Dr. Zinck has examined the enamel on hollow-ware sold in Berlin, and reports that the enamel on a stew pan made in Belgium contained so much lead that 15 centigrams of oxide of lead (2½ grms.) was found dissolved in one liter of vinegar (3 per cent. acetic acid) which had been boiled in it for one hour.—*Amer. Chemist.*

SUNSTROKE AND WHISKEY.—Physicians say that more than two-thirds of the cases of sunstroke during the past heated term have occurred with persons who were in the habit of drinking liquor.



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SAN FRANCISCO:

Saturday, Nov. 23, 1872.

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yearly subscriber may designate. Every old subscriber,
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addresses, you may order.

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the time of payment, is offered to all new subscribers of
this paper from this date. Our agents may make a note of
this, too.

ONE SAMPLE COPY of this paper will be sent free to any
person's address recommended to us as likely to subscribe,
by any one who will inclose a one cent stamp for postage.

Wheat Ships.

Why not Build them on this Coast.

We shall doubtless pay this year for the car-
rying of our wheat crop to Liverpool

Twelve Million Dollars.

And allowing each to make two trips a year,
will employ at least 150 vessels. But according
to higher estimates we will pay nearly twenty
million dollars, and employ 244 vessels. Even
the lowest of these estimates is suggestive, and
has set practical people to thinking whether
with all our

Facilities for Ship Building

On this coast, we cannot in the future man-
age to keep amongst ourselves much of this
immense sum, which will go on increasing
every year. No part of the earth offers such
facilities for ship building as the States and
Territories of this coast. Immense forests of
the finest timber which, even at our present
rate of consumption, cannot be exhausted for
thousands of years, we have an unlimited sup-
ply of material sufficient to build all the navies
in the world, and to supply all maritime de-
mands for twenty centuries to come. And there
is no expense in transportation, there is suffi-
ciency of material overhanging our northern
sounds and bays to build ten thousand vessels
close to the water's edge.

What Has Been Done.

We have, comparatively speaking, done very
little in past years in availing ourselves of these
immense resources, though the fleet of small
craft that does the coasting trade from Puget
sound to the Colorado indicates what can be
done. Very little has been done towards build-
ing vessels of a larger class. Messrs. Meiggs &
Gawley, of this city, have built the bark "North
West," of 600 tons, the bark "Tidal Wave," of
700 tons, and the ship "Wild Wave" of 1,200
tons. These have cost, respectively, "North
West" \$40,000, "Tidal Wave" \$45,000, and
"Wild Wave" \$70,000. Besides these there
has been built the bark "Forest Queen," about
the same size as the "North West." All these
have been built at Puget Sound, where wooden
ships of any class can be

Built as Cheaply as any Place in the World.

It is not so, however, in San Francisco at
present, for we have the additional cost of car-
rying the lumber hither, superadded. The
Puget Sound pine is said by competent author-
ities to be as good as the best Eastern oak for
the construction of ships, while it is infinitely
cheaper. For the rudder and stem posts the
California laurel is the superior of oak while it
is considerably cheaper. And the Port Orford
pine makes as durable and as handsome a deck
as can be found in the commercial woods of Eu-
rope or America. And masts straight as an
arrow and three or four hundred feet long can
be obtained at the Sound about as cheap as saw
logs.

The Cost.

Composite ship—one of pine, sheathed with
iron, would be \$110,000, and the cost of build-
ing and fitting out a wooden ship so as to be
ready to load wheat at the city front, is \$60 per
ton of measurement. For a thousand ton
wooden ship, the cost would therefore be
\$60,000. Such a ship would carry 28,000 cen-
tals of wheat at one trip, which would bring in
a revenue of \$38,000. So that, counting in the
freight received on the return voyage, the ship
would at present prices more than pay for her
cost within one year. But even supposing
freights were only half what they now are, such
a vessel would nearly or quite pay for herself
in a couple of years, because her return cargo
from Liverpool would double the amount re-
ceived in this port. The reason

Why Ships are not Built

On this coast, when such a magnificent return
can be obtained, is due solely to the want of
enterprise and high prices of interest. Those
who understand the business are afraid to bor-
row money when they have to pay from 1½ to
2 per cent. per month, and those who have the
money do not possess the enterprise. This is

A Matter that Our Farmers should Consider.

There are twenty-five thousand of them in
the State, and if some remedial action is not
taken, they may next year have to pay twelve
million dollars for freight more than they ought
to. This is the cost of building 200 first-class
wheat ships of 1,000 tons burden each, and
possessing a carrying capacity of eleven million
two hundred thousand centals for the harvest
year. By co-operation with mechanics they

would be able to build ships enough on this
coast before next season to prevent another
"corner," and thus save an incredible amount
of money in the future to themselves and the
State. The farmers,

Once being United,

The carrying trade of their wheat could be co-
solidated and disposed of to advantage. They
might influence the building of ships by pledg-
ing their patronage; or they might, through
agents, direct sufficient ships from the various
ports of the world to call at our doors at sea-
sons when wanted, by offers of fair rates for
cargoes pledged in advance.

A Coast Railroad South.—Advantages to the Country.

A convention to take action concerning the
construction of a narrow-gauge railroad, through
San Mateo County, has been called to meet at
Redwood City on the 26th inst., and the propo-
sition is said to be meeting with great encour-
agement. The route of the proposed road has
not yet been settled. San Mateo County, un-
der the provisions of the law, is permitted
to subscribe \$500,000 toward the construction
of a road, which, with such private subscrip-
tions as will be forthcoming, will be sufficient
to build it. As a subsidy for a railroad through
Santa Cruz County was carried at the last elec-
tion, it is probable that the two will unite and
thus form an independent road for over 100
miles south from this city. Although the
Southern Pacific proposed to extend their road
through Monterey and San Luis Obispo Coun-
ties south, it is highly probable that this move-
ment may result in this independent road being
carried on through these counties to Santa
Barbara. Monterey County has, however, more
length along the coast than both San Mateo
and Santa Cruz Counties combined, and the
lower part is thinly settled; while San Luis
Obispo County with nearly as much coast line,
is cut up into large three, seven, nine and eleven
league ranches, used as sheep and stock
ranges, so the population is small and it is
sparsely settled. Once these counties are
passed through, Santa Barbara will no doubt run
a road north and connect with it, and it only re-
mains for Los Angeles and San Diego to co-oper-
ate, and we will have an independent narrow
gauge road along our coast which will be of vast
advantage to the districts through which it
passes.

The San Diego and San Bernardino railroad
was formally opened on the 11th inst. and it is
believed that the work thus inaugurated will be
followed up by vigorous operations until the
entire line is completed. From San Bernardino
the deviation to Los Angeles will be small, and
the distance from there to Santa Barbara not
great. The people in the sections of country
mentioned are all alive to the advantages likely
to accrue in having an independent railroad,
and will no doubt do all in their power to build
it. In our opinion it is only a question of time.
The success of the Denver and Rio Grande
narrow gauge road, and others in different
places has demonstrated the practicability of
the system, and it is evident that they will no-
where be so extensively used or to such great
advantage as in the mountainous districts of
the Pacific slope. The "lower country," as
we call it, is suffering under the plague of Span-
ish grants and large ranches, which necessarily
restricts the population from becoming numer-
ous, but were they cut up into even the very re-
spectable acreage of an average California farm,
not only the counties but the whole State
would be benefitted thereby.

With the construction of a railroad through
the counties mentioned, would begin a new era
of advancement: naturally increased taxation
and higher valuation of the land would compel
or induce the large land owners to cut up their
ranches in smaller divisions and sell portions.
There are thousands and thousands of acres in
the lower coast counties, now used as ranges
for sheep and cattle, which, by a judicious cul-
tivation could be made productive farms. Un-
der the system at present in vogue, however,
they may remain as they are for years and years,
and meanwhile those counties see with envy
their more fortunate interior and northern sis-
ters materially advancing while they are under
the control of a few land-holders, who, like
dogs in the manger, will neither make proper
use of their land or allow others to do so. These
facts are patent to any one familiar with the
lower portion of the State, but it is not custom-

ary to say much about them, as the idea is pre-
valent that it will hinder immigration.

In our opinion this is injudicious. What
use are emigrants unless they can settle some-
where and make a home? If the lands are all
held by a few, there is no place for them to lo-
cate. In many instances a man with 20,000 or
30,000 acres of land holds also an almost equal
portion of Government land without any ex-
pense to him. The reason is that the grants
made by the Mexicans were of such a nature as
to render it possible for the grantees to take
the best land and leave the hilly or mountain-
ous tracts. In consequence of this where these
grants cover the level land, the hills are not con-
sidered worth taking up, and so remain, and are
made use of by the ranch owners as ranges for
their cattle. Most of the central portion of the
State was affected in the same way, but when
the population was increased the large tracts
were subdivided, and now, nowhere in the
whole State is there a more enterprising, indus-
trious or progressive people than in Napa, So-
lano and Sonoma counties. They are prosper-
ous and permanent citizens. Small farms are
the rule, not the exception. The products are
varied and the manufacturing interests rapidly
growing. The lower country will never become
such until it has such an access of population
as shall settle up its lands and have a perma-
nent interest in its advancement. In no other
way can this be better accomplished than by
building a railroad through the counties men-
tioned. If such results would follow its com-
pletion as are probable, would not the people
do wisely in investing in railroads and reaping
their profit from increased value of their lands,
permanent settlers, increase of products and
general advancement proportionate to the im-
portance of their counties.

There is no reason why the Southern coun-
ties should not be as prosperous as those north
and east of San Francisco. In some respects
they have the advantage, and certain products
can be raised there through favorable climatic
conditions which will not grow in the latter.
It is to be hoped that before long a general
movement will be inaugurated which will
eventually put the whole lower coast in railroad
communication with San Francisco, as it will
not only benefit this city and the counties
through which it passes, but the whole State
at large.

Thanksgiving.

Before another number of the RURAL will
have reached its patrons, that time honored
day, hallowed by sacred memories of the past,
and gushing with the pleasures incident to the
re-union of kindred and happy households,
will have come and gone. We hope our read-
ers all feel that they have cause for congratula-
tions among themselves and thanksgivings to
God for his mercies and blessings.

It always seems peculiarly appropriate that
the agriculturist, whose garners are swelling
over with the bounties of his peculiar provi-
dence, should feel at heart, a true gratitude to
the Great Giver. May the day therefore, ap-
pointed by the President of the United States
and the Governor of California, as a day of hap-
py feasting and thanksgiving, be everywhere
observed throughout the State and Nation.

Custom has also made it, and our Governor
has indorsed it, as a day of "innocent recrea-
tions;" which we construe as meaning espe-
cially home pleasures and rational amuse-
ments; and whilst the absent ones return and
old friendships are renewed, the young made
more joyous and the old made young again,
and all are made happy, and while mirth and
becoming revelry are heard in all the land—
may we never forget that it is eminently a day
on which our charities should roll forth as a
great wave, encompassing the poor and unfor-
tunate, the widow and the fatherless, till their
hearts are made glad by our abundant bounty.
We wish our patrons a joyous thanksgiving.

POULTRY PESTILENCE.—A disease has broken
out among the poultry of the Eastern States,
that is very destructive to life, immense num-
bers dying in from ten to eighteen hours after
being attacked. Hens, turkeys, geese and
ducks are alike subject to the disease, which
seems to be of the nature of chills and fever,
and which is spreading in every direction,
producing consternation among poultry grow-
ers, and among consumers a fearful looking
forward to Thanksgiving and Christmas din-
ners of diseased or shaky poultry.

Almond Culture.

A few months since, inquiry was made in the *Press* for the Languedoc almond and no response obtained. We were in doubt whether the genuine variety was obtainable in this State, till a few days since, when we had the pleasure of an interview with Mr. N. B. Clough, who presented us with a sample of the true Languedoc almond, known to connoisseurs as "Prince's Premium."

They are a medium between the paper shell or Ladies' almond, and the hard-shell variety, but most of them can be crushed by the hand. They were of the crop of 1871, the shell bright and clean, the kernel full and of excellent flavor, being entirely free from the least bitterness, in fact as perfect an almond as can be produced in any country and worth 25 cents a pound in the market. These almonds were grown by Mr. B. D. T. Clough, of Washington, near Niles Station, Alameda County.

We were also favored with a small branch from one of his trees, full of leaves and almonds, of which we present an engraving in miniature and which is a good representation of the original, except that we could not find room for half the almonds—as compared with the leaves—that grew upon the branch.

It was early foreseen by the growers of the almond, that its commercial value would increase with the growth and extension of commerce and civilization, and the attempt to improve its quality has been the aim of culturists for more than four centuries. The result of these persistent attempts at improvement, finally culminated in the "Prince's Premium," of Languedoc, France, as a variety unexcelled.

Mode of Culture.

Mr. C's method of culture differs but little from the usual routine adopted by others in



THE LANGUEDOC ALMOND.

the growing of stone fruits. The stones of the peach as well as the almonds themselves are planted in spring and cultivated in nursery rows the first year. The almond is grown as we have intimated on both peach and almond stocks. Early in September the seedlings attain sufficient size and are budded with the true Languedoc or other desired variety. The following spring they are headed down to the bud, and allowed to grow one season more unremoved.

They are then ready for transplanting in early fall, winter or spring as the season may prove most propitious, and if a good growth has been made, they will be from three to seven feet high. They are then set in orchard form in well prepared ground at the rate of 150 trees to the acre or 16½ feet apart. The ground is kept thoroughly cultivated, and almost any hoed crop except squashes can be grown between the rows at some distance from the trees without injury.

The tree requires but little pruning or trimming for four or five years; but when it ceases to make a strong lateral growth of limbs, heading or cutting back to promote a new growth, will increase the product as well as the size and value of the almond.

The Product.

This variety of the almond when grown on suitable soil and with proper cultivation will, at five years from the bud, yield at the rate of three dollars per tree, and at six years from the bud will yield \$500 per acre. To those who think their best wheat land worth too much to plant with almonds, we would say—no wheat

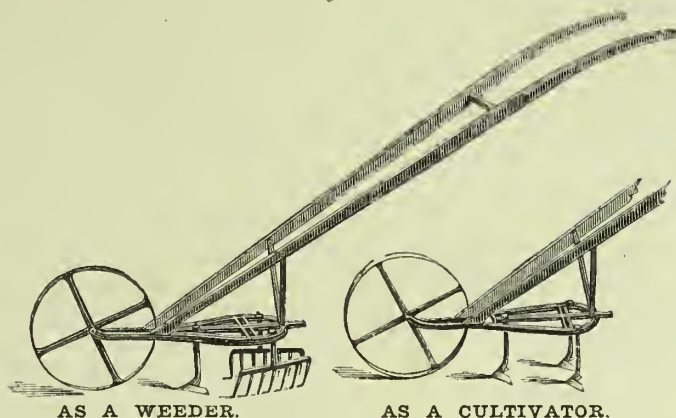
crop that you can raise will half equal the value received after the fourth year. There is a wide margin between wheat at one and a half cents a pound and almonds at 25 or even 20 cents a pound.

The almond crop can be gathered at any time almost, as best suits the convenience of the household, from September to January; we say household, because it is not unbecoming even to the women and children to engage in almond gathering as they would in the gathering of field and forest nuts in the older States.

Preparation for Market.

To those who are not familiar with the important process of fitting almonds for market, we give the process—called bleaching—as practiced by those who are in the secret, as they suppose, but which Mr. C. freely imparts. When the dried pulp or outer shell begins to open on the edges of the almond, the fog, dew or humidity of the atmosphere blackens or browns the shell, giving it a soiled and unmarketable appearance.

When this occurs it is only necessary to place the almonds, any number of tons of

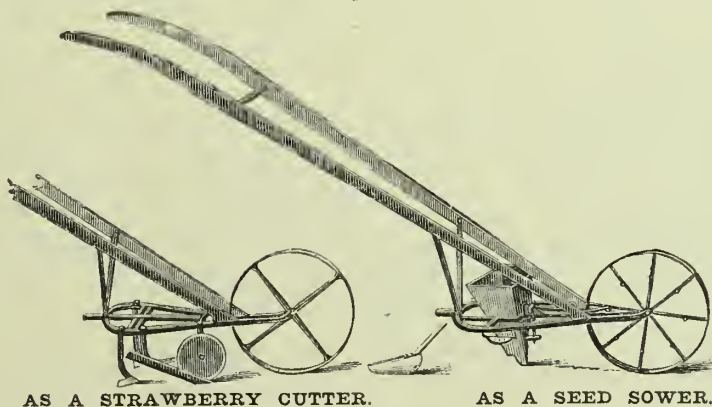


them, in any kind of a tight kiln, and subject them to the action of sulphurous gas, by simply burning a few ounces of sulphur within the kiln and allowing the almonds to be enveloped in the fumes for three or four hours. This effectually bleaches the shell of all stain without the least injury to the kernel and giving

and of the three cast steel cultivator teeth, used in combination, with which the operator cuts close to the rows and takes away all the weeds as fast as he can walk and shove the machine, which leaves the ground as even and fine as a flower garden.

With it onion growers and market gardeners

Fig. 2.



ing them a bright, beautiful straw color or nearly white, and puts them in a perfectly marketable condition so far as appearance is concerned.

We are inclined to the opinion that Mr. C. has taken hold of a branch of horticulture in the growing of the almond, that will place him in the enjoyment of an easy competence within a very few years; for not only would his present setting of trees do all, this but he has now on hand between 60,000 and 70,000 trees yet to set or sell.

Imposition.

There are those who have raised seedling trees from the Languedoc almond and which they now offer—though unbudded—as the genuine variety. No reliance can be placed on seedlings; they must be budded with the desired variety or you are nearly certain to get only the most common inferior fruit.

IMPORTANT.—We would direct the attention of the farmers of California to the remarks of Mr. Wm. McCullough before the Sonoma Co. Farmers' Club in this number of the *Press*.

ON FILE.—Circular of the Agassiz Institute, Sacramento; Oats vs. Wheat; The place for Eastern Farmers; Notes from our Oregon correspondent.

Comstock's Horticultural Implements.

We herewith present illustrations of certain new horticultural implements that are said to be rapidly gaining a high repute wherever used.

Fig. 1 represents a hand cultivator and onion weeder combined, and it is said that, in the cultivation of onions, carrots, beets, parsnips, ruta bage, rice, spinach, strawberries, nursery stocks, and other small-drill crops, this implement—the invention of Wm. G. Comstock, many years a large seed grower in Wethersfield, Conn.—will do the work of six men with hoes. It is the only implement that pulls the weeds and thoroughly pulverizes the soil; runs closely to the rows and takes out all the weeds not directly in line of the plants, without covering them however small, and throws the earth up to or away from the rows. It is readily adjusted to clean the space between rows from six to fifteen inches apart at one passage.

Its great superiority over other weeders consists in the adjustable rakes, with sharp angular teeth set at an acute angle to the rows, in the shape of the slotted iron cultivator frame,

Fig. 1.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

By Special Dispatch, Dated Washington, D. C., Nov. 19th, 1872.
[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

FOR WEEK ENDING NOVEMBER 5TH, 1872.*
RAILWAY FROG.—William Close, Sacramento, Cal.
MACHINE FOR CROZING AND CHAMFERING.—Otto Osten, Tahoe City, Cal.
DUMPING CAR.—John R. Dubois, Virginia City, Nevada.

TRADE MARKS.

MEDICINE.—Thomas Boyce and Francis McKenzie, S. F., Cal.
WHISKEY.—F. Chevalier & Co., S. F., Cal.
MUSTARD.—H. C. Hudson & Co., S. F., Cal.

*The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue.
NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Wool in New York.

From Walter Brown & Son's monthly wool circular of November 1st, we extract as follows:

During October the Wool Markets experienced no decided change from the general unsatisfactory tone which has characterized it for several months past.

Manufacturers have continued their policy of purchasing in small quantities at frequent intervals, which has served to prevent prices from working up in the least, and at the same time has operated to keep the wools back in the country; hence but slight additions to the stock in the Eastern markets has been the result, and the offerings have become limited in quantity. We think, however, that a better feeling prevails among the trade, with confidence that a change for improvement is at hand. Some firmness among holders has been developed within the past two weeks, and less eagerness to accept the offers for fleeces which buyers make, is noticeable. In fine grades a slight advance may be quoted.

On the 10th of October our sixteenth public sale took place, and nearly all desirable wools brought higher prices than was anticipated by many. Holders were encouraged at the result, and from that time, there has been an improved inquiry, with increased transactions, prices however continuing nominally unchanged. To this extent the market has improved since the 1st ultimo. There is not fine and medium fleece enough in the Seaboard markets at the present time to meet an active demand should such arise, and unless the receipts from the west materially increase, the current needs of manufacturers will be with some difficulty supplied. They may more generally have to resort to foreign wools for a portion at least of their stock, particularly for warp descriptions.

Pulled Wools during the month were slow of sale and suffered a further decline, but at the close we note rather more inquiry. California Wools—desirable parcels are held with more firmness at an advance of one or two cents. Inferior lots are without improvement. Texas Wools which have been greatly neglected, are now moving off at an advance of two to three cents. Foreign Wools—there is an improved demand for all classes of fine wools. The stock is being reduced, and holders are firmer in their views.

California.

Spring Clip, fine.....	33 @ 35
Spring Clip, medium.....	33 @ 35
Spring Clip, low grades and burry.....	27 @ 30
Fall Clip, A. 1.....	23 @ 27
Fall Clip, low grades and burry.....	20 @ 23

Since the above circular was issued there has occurred a loss of wool and woolen goods to a large amount by the Boston fire, which may possibly cause an advance in the price of wools to a limited extent; though it is believed that all the wool consumed would not be more than sufficient to keep the factories of the United States in operation for a single month. The loss of woolen goods is very considerable and is thought will affect prices some 15 or 20 per cent.

THE TEASEL, (*Dipsacus Fullonum*).—A correspondent, C. A., asks if there is any teasel grown in this State; and desires information of its commercial value. Will some one who is acquainted with the mode of cultivation, impart information on the subject, and state whether the demand for the article would make its production a paying business.

The common wild teasel, (*D. sylvestris*), grows in several localities in the State, but is useless in cloth manufacture, on account of its not having hooked bracts, which the foreign variety has, and which gives it value. This variety is commonly known as Fuller's Teasel (*D. Fullonum*.)

LIME AS A MANURE.—Lime is less important as food for plants than as a chemical agent acting on the soil, and facilitating those decompositions which liberate the valuable ingredients it contains, and bringing them into a state fitted for the use of vegetation. It acts most powerfully upon soils which contain a large proportion of vegetable humus.



Ever Present.

The sun of yesterday is set—
Forever set to time and me;
Yet of its warmth and of its light,
Something I feel and something see.

The flower of yesterday is not;
Its faded leaves are scattered wide;
Yet of its perfume do I breathe,
Still does its beauty stir my pride.

The friend of yesterday is dead;
On yonder hill his grave doth lie;
Yet there are moments when I feel
His presence as of old draw nigh.

A part of what has been remains;
The essence of what is gone
Are ever present to my sense;
Though left, I am not left forlorn.

In thought, in feeling, and in love,
Things do not perish, though they pass;
The form is shattered to the eye,
But only broken is the glass.

Sun, friend and flower have each become
A part of my immortal part;
They are not lost, but evermore
Shine, live and bloom within my heart.

Cheating the Dying.

In a seaport town on the coast of Maine a young lady was taken sick with consumption. Her physician, after carefully examining her, was satisfied she could not live. He made known his opinion to the family. He urged her aunt, who had the special care of her, to tell her plainly her condition, and have everything done that might be to prepare her for so great a change. But father, mother, aunt, and all, conspired together to deceive the dying one. Every day she neared the end. All who saw her knew she was growing weaker, yet not one was kind enough, to tell her. Every hint of death, every thing serious, was forbidden. That sick chamber was turned into a stage for players, who wiped away their tears before they entered, wore a lying mask of smiles, and spoke in fabled words of hope when hope herself was dead.

So the play went on, and the disease, too, till the hour of death came. Then, when the truth flashed upon the victim's mind, she cried out in agony of spirit: "I can not die! I can not die! I am not prepared. I can not get ready." Sad, awful words! She had asked to know her condition and plead earnestly that they would tell her all, but these whose business it was to do so, resolutely deceived her, and betrayed her stealthily to death.

The whole scene reminds one of that old heathen pagant, where they crowned the lambs with garlands, and led them to the slaughter with dances and music. When will parents and friends learn to be honest in the sick room and truthful to the dying? Does not death come suddenly enough according to God's own arrangement, without this cruel conspiracy of our fellows? Ought not our efforts to be, by a word in season, by watchfulness, by kindly persuasion and instruction, to prepare death's subject for death, and so take away, as much as possible, the surprise of its coming and the suddenness of the departure?—*The Congregationalist.*

WAIT WIFE—WAIT HUSBAND.—Wait husband, before you wonder and why your wife don't get along with the household responsibilities as your mother did. She is doing her best; and no woman can endure that best to be slighted. Remember the long, weary nights she sat up with the little babe that died; remember the love and care she bestowed upon you when you had that long fit of illness. Do you think she is made of cast-iron? Wait—wait in silence and forbearance, and the light will come back to her eyes—the old light of the old days.

Wait wife before you speak reproachfully to your husband when he comes late, weary, and "out of sorts." He has worked hard for you all day—perhaps far into the night; he has wrestled hard in hand with care, and selfishness, and greed and all the demons that follow in the train of money-making. Let home be another atmosphere entirely. Let him feel that there is no other place in the world where he can find peace, find quiet, and perfect love.

There is wormwood of bitterness in nearly every sweet of life. But it would not seem half so bitter if we did not stop to weigh, and separate, and analyze to find out exactly how bitter it is.

How to Make Home Happy.

Do not jest with your wife upon a subject in which there is danger of wounding her feelings. Remember that she treasures every word you utter, though you never think of it again. Do not speak of some virtue in another man's wife, to remind your own of a fault. Do not reproach your wife with personal defects, for if she has sensibility, you may inflict a wound very difficult to heal. Do not treat your wife with inattention in company. Do not upbraid her in the presence of a third person, nor entertain her with praising the beauty and accomplishments of other women. If you would have a pleasant home and cheerful wife, pass your evenings under your own roof. Do not be stern and silent in your own house, and remarkable for sociability elsewhere. Remember that your wife has as much need of recreation as yourself, and devote a portion of your leisure hours to such society and amusements as she may join. By so doing, you will secure her smiles and increase her affection. Do not, by being too exact in pecuniary matters, make your wife feel her dependence upon your bounty. It tends to lessen her dignity of character, and don't increase her esteem for you.

If she is a sensible woman, she should be acquainted with your business and know your income, that she may regulate her expenses accordingly. Do not withhold this knowledge, in order to cover your own extravagance. Woman has a keen perception—be sure she will discover your selfishness—and though no word is spoken, from that moment her respect is lessened, her confidence diminished, pride wounded, and a thousand, perhaps unjust, suspicions created. From that moment is your domestic comfort on the wane. There can be no oneness where there is no full confidence.—*E. C.*

What Shall Girls Do?

Please pardon my intrusion on your time and space. I should like to answer "What Shall the Girls Do?" but know that I am not capable of doing it justice. To the girls I would say do not be dependent and helpless. Fit yourselves for some honorable, noble employment. Strive to be the best of your kind. But should God call you to be a wife and mother, then think if you can leave your child to the care of an ignorant woman, even if she be kind and strong. Who can fill the place of a mother to her child? Surely not an ignorant hireling who has no interest in it beyond the money she gets for her labor.

Leave a child to the care of an ignorant person, and just stop and think in how many ways said ignorance will effect the child. It is by some said, intelligent women are fitted to do something above babytending. I ask, what is more exalted than the training of an immortal mind? Children are taught to appear to be many things that are supposed to be desirable. But alas! how few are trained to make true, noble, Christian men and women! Put the next generation under the care and influence of none but true, noble, intelligent mothers, and what think you would be the consequence? We cannot have the faintest conception. From a mother who is striving to train her children to be true Christian men and women. *E. M.*

LOVE, FORTUNE OR POSITION.—Who marries for love, takes a wife; who marries for fortune, takes a mistress; who marries for position takes a lady. You are loved by your wife, regarded by your mistress, tolerated by your lady. You have a wife for yourself, a mistress for your house and friends, a lady for the world and society. Your wife will agree with you, your mistress will rule you, your lady will manage you. Your wife will take care of your household, your mistress of your house, your lady of appearances. If you are sick your wife will nurse you, your mistress will visit you, your lady will inquire after your health. You take a walk with your wife, a ride with your mistress, and go to a party with your lady. Your wife will share your grief, your mistress your money, and your lady your debts. If you die your wife will weep, your mistress lament, and your lady wear mourning. Which will you have?—*Christian Union.*

MOTHERS.—Some one has said that a young mother is the most beautiful thing in nature. Why qualify it? Why young? Are not all mothers beautiful? The sentimental outside beholder may prefer youth in the pretty picture, but I am inclined to think that sons and daughters, who are most intimately concerned in the matter, love and admire their mothers most when they are old. How suggestive of something holy and venerable it is when a person talks of his "dear mother." Away with your mincing "mamas," suggestive only of a fine lady, who deposes her duty to nurse, a drawing-room maternal parent, who is afraid to handle her offspring for fear of spoiling her new gown. Give me the homely mother, the arms of whose love all-embracing, who is beautiful always, whether old or young, whether arrayed in satin, or modestly habited by bombazine.

Pillow Prayers.

He who knows nothing of pillow prayers is ignorant of one of the sweetest modes of prayer practical to man on earth. The day with its engrossments being gone, it is a most favorable time for the gathering in of our thoughts upon ourselves—our sins, our wants, fears, and hopes, and then the turning of them up toward heaven. This is what the Psalmist is apparently referring to in his words, "when I remember Thee upon my bed, and meditate upon Thee in the nightwatches." That he uttered many a pillow prayer is a thousand fold more than probable. "I have remembered Thy name, O Lord, in the night." "I prevented the dawning of the morning and cried." Those cries were prayers before the dawn of day. If these prayers of the pillow, however, be begotten only of sheer evening sloth, we may say of them that they are "bastards and not sons." But if they are the legitimate children of weakness, excessive weariness, sickness or other similar circumstances, then are they of the true house and lineage of heaven, coming down in kinship all the way from Bethel, where the overjaded Jacob had his angelic vision on his pillow of stones.

Many a timid boy at boarding school, with boisterous room-mates about him, has kept alive his prized communion with his Father on High, and so, perhaps, saved his soul by means of his silent prayers. Boys, try them! Girls, don't neglect them! Invalids with your eyes so often held long waking in the night-season, distrust not the pillow prayers. Hundreds are continually climbing to heaven by them as on a ladder. If you, perchance, fall asleep in the act, do not fret about it. For what opiate from the apothecary is so harmless, as such an out-breathing of your holiest desires upward? What is sweeter than to lose yourself in such a prayer? For prayer is simply a form of thought toward God, and nothing can be more fitting to the very last moments of daily consciousness than such thoughts.

EARLY MORNING.—Somebody who has taken the trouble to rise early in the morning imparts to the *Independent* some very interesting facts in regard to that portion of the day. He says: "From four o'clock to seven there is a period as distant from day as is the time from six in the evening until ten. Most persons understand the meaning of evening; but morning means no more than a point—a mere time to get up and dress for the day. But decidedly the richest, most marked part of the day—the fullest of unique joys, songs and suggestions is the morning. Thomas Fuller (is it) says: 'Do not spill the morning (the quintessence of the day) in recreations.' That is it exactly—the quintessence. About four of an August morning the great wave of bird song reaches you. Where it starts I don't know. Probably on the shores of the Atlantic, with reed birds; but it always comes with the sun from the east. At first you hear just one inquiring note, away down in the valley; after a little, another sleepy twill, then another and another, keener, fuller, wide awake, joyful; until the valley is rocking and rolling with a tide of song. A robin shouts in the elm over the roof; the tide dashes and flows over you—on, to the Pacific. For half an hour every bird in all your world is half crazed with inspiration, pouring forth the exquisite rhythm of his being in a hallelujah chorus. And then the perfume and purity of the air. It has an odor neither of night nor of day; but the dew seems to hold in solution those peculiar honeysuckle odors that are never emitted till night."

THE HUSBAND.—Ladies sometimes do not value their husbands as they ought. They not infrequently learn the value of a good husband for the first time by the loss of him. Yet the husband is the very roof-tree of the house, the corner-stone of the edifice, the keystone of the arch called home. He is the bread-winner of the family, the defence, and its glory, the beginning and the ending of the golden chain of life which surrounds it, its counselor, its law-giver, and its king. And yet we see how frail that life is on which so much depends! How frail is the life of a husband and father! When he is taken away, who shall fill his place? When he is taken ill, what gloomy clouds hover over the house! When he is dead, what darkness, weeping, agony! Then poverty, like the murderous assassin, breaks in at the windows; starvation, like a famishing wolf, howls at the door. Widowhood is too often an associate of sackcloth and ashes. Orphanhood, too, means desolation and woe.

DRESSING CHILDREN.—I know thousands of parents who have received from God a child, and then they turn the young immortal into a dressmaker's doll! As if God had not made the little creature beautiful enough, they must overload it with silks and laces, and then torture its freedom into the thongs the screws of arbitrary fashion. This overdressing of the body strikes through into the heart. How can a stop be put to the crop of fops and fashionists if children are to be trained in a foppery and coxcombry from their cradles? How can our children be taught self-denial and spiritual-mindedness while under the artificial trappings of pride and extravagance?—*Theo. L. Cuyler.*

ONE of the novel features of the Vienna Exposition will be a very complete collection of American newspapers, arranged according to States, with a catalogue giving full particulars in regard to each one represented.

Young Folks' Column.

Don't Whip Them.

Mothers don't whip them! Treat God's lambs tenderly. Compel obedience, but not with the rod. The other evening, whilst taking my customary stroll, meditating on my next text for the following Sunday, the face maternal appeared at the door of a pleasant little home I had often noticed, and loudly ordered a little lad, three or so, to "come in, and see if she did not do as she said she would." The mother, in her wrath at being disobeyed re-entered the house, not hearing the little one's sobbing explanation that he had stepped outside to fetch the baby in. Directly the blows and pitious cries fell upon my ears.

Undoubtedly the little one had gone beyond the prescribed bounds; but it was to bring the wee toddling thing inside, who as yet heeded not the commands, however harshly given, and his full heart and meager use of words withheld the power of explanation. Poor little man, how my heart ached for him. Kissless and sad he went to his bed.

Mothers, do not whip them! Do not yourselves make shadows in the sunlight with which God always surrounds children. Do not let them be lulled to sleep by the falling of their own tears, or by their own sobs and sighs. Far pleasanter it is when you go to tuck them in at night, to find pink feet on the pillow, dimpled knees in air, toys yet in embrace, and smiles on their sweet mouths.

Yourselves bear in mind their last words, "If I should die before I wake." Treat them tenderly.

I took my little man a shot-gun to-night, and handing it over the gate, I said, "Now, will you mind your mamma, and stay inside when she calls you?" I am sure the "me will" was very sincere, but if they forget, bear with them. If childhood's days cannot be free from sorrow, surely none ever will.—*Household.*

Don't Kill Time.

"Spare a copper, sir, I am starving," were the words of a poor, half-starved, ragged man to a gentleman hastening home one bitter cold night. "Spare a copper, sir, and God will bless you."

Struck with the fellow's manner and appearance, the gentleman stopped and said:

"You look as if you had seen better days. If you will tell me candidly what has been your greatest failing through life, I'll give you enough to pay your lodging."

"I'm afraid I could hardly do that," the beggar answered with a mournful smile.

"Try, man, try. Here's a shilling to sharpen your memory; only be sure you speak the truth."

The man pressed the coin tightly in his hand, and after thinking for nearly a minute, said:

"To be honest with you, then, I believe my greatest fault has been in learning to 'kill time.' When I was a boy, I had kind, loving parents, who let me do pretty much as I liked; so I became idle and careless, and never once thought of the change in store for me. In hope that I should one day make my mark in the world, I was sent to college; but there I wasted my time in idle dreaming and expensive amusements. If I had been a poor boy, with necessity staring me in the face, I think I should have done better. But somehow I fell into the notion that life was to be one continued holiday. I gradually become fond of wine and company. In a few years my parents both died; you can guess the rest. I soon wasted what little they left me, and it is now too late to combat my old habits. Yes, sir; idleness has ruined me."

"I believe your story," said the gentleman, "and I will tell it to my boys as a warning. I am sorry for you, indeed I am. But it is never too late to reform. Come to my office to-morrow and let me try to inspire you with fresh courage."

And giving the man a piece of money, and indicating where he could be found, he hurried on.

"Never kill time" boys. He is your best friend. Don't let him slip through your fingers when you are young, as the beggar did. The days of your boyhood are the most precious you will ever see. The habits you form will stick to you like wax. If they are good ones, life will be a pleasure and a true success. You may not grow rich, but your life will be a real success, nevertheless.

If, on the contrary, you waste your early years, live for fun only, trifle with your opportunities, you will find after a while that your life is a failure—yes, even if you should be very rich.

"I DECLARE," said an old lady, reverting to the promise made on her marriage day by her liege lord, "I shall never forget when Ol' adiah put the nuptial ring on my finger, and said, 'with my worldly goods I thee endow.' He used to keep a dry-goods store then, and I thought he was going to give me the whole there was in it. I was young and simple then, and did not know till afterward that it meant one calico gown a year."

DOMESTIC ECONOMY.

Education of Girls in Domestic Economy.

Young girls do not realize the necessity of so much time being spent in the kitchen, doing such little bits of jobs as ever well-regulated house requires; and, indeed, some quite old girls do not. But let us see who is to be blamed. It is natural for most girls to like their own amusements better than the dull work of washing dishes, sweeping, etc., while their mothers and older sisters are enjoying themselves playing croquet. The time for girls to begin to do housework is as soon as they are large enough to do much of anything. Now if these girls are allowed to grow up as many of them are, without knowing how to do any housework whatever, it will be very hard for them then to learn so many things at once, should they be obliged to do such work.

But I ask, does the blame rest entirely on them? Any sensible person will say that the girls are not to blame for what parents neglect. If mothers would only take their daughters into the kitchen, learn them to do work as it should be done, and if they themselves do not know how to do some kinds of fancy cooking, they can teach their girls as far as they know themselves; and then, perhaps, they can learn something together. Now if they would do this—beginning while they are young—teach them that housework is not so degrading as some people think, and follow it until they are grown up, I think there would be no need of having schools for the purpose of teaching such duties to young ladies; and, perhaps, some of our readers might be more fortunate in getting help, and have less cause to complain about ignorant girls.

The correspondent writing on "Female Education," in the issue of Oct. 12th, I think must live in some city or village, for she seems to point directly to the country for poor meals and general ignorance. I know some of the readers of this piece will say "she is a grecu country girl, anyone might know." I am a farmer's daughter, and am not ashamed to own it; and I know a great many farmers' girls who would like to write, but are, like myself, aware that older ones can do better. I have never before written for this department; but I hope to hear from the girls once in a while. I know they might write something that would be of interest to a great many, if they would try.—*Cor. Maine Farmer.*

THERMOMETERS FOR STOVE OVENS.—A contributor to the *Pacific Farmer* makes the following sensible suggestions: We talk about hot, quick and slow ovens, but it takes a very long experience to enable one to tell by the feeling, or in any practical manner, just how hot an oven is until we see its effect on the articles cooked, and then it is too late; and it is impossible to communicate to any one else the precise temperature which is represented by our ideas of hot, quick, etc. It is a matter of guess-work. In fact our whole system of cooking is more or less a patched-up system of guess-work. We have rules and recipes for rich cakes and puddings, but bread of all varieties, pies, butter, etc., are made by guess. And even in those recipes which we have, the ingredients are measured in all manner of vessels, and no two persons understand alike the terms which designate the quantities. One of our friends has a stove with glass oven doors. Why could not a thermometer also be attached to them? I hope to see the time when cooking shall become an exact science; when we shall not only measure the heat of our ovens with thermometers, and know the precise temperature of which they should be for each variety baked therein, but shall also know the temperature at which our yeast and bread-sponge and cream should be kept; when we shall prepare all articles of food by correct recipes, and measure all ingredients in exact and standard measures, which shall be all over the country, so that mistakes can only occur when we fail to follow the rules.

SEPARATING OSAGE SEED.—Last autumn I had a few Osage oranges—I mean the fruit of oranges, and not the seed only—and not knowing how to get the seed separated from the pulp, I buried the oranges in the garden in a trench, covering them to the depth of about four or five inches, where they were suffered to remain until spring, when the pulp was found to be almost entirely wasted away, and the seeds in a fine state of germination, fully one-half being sprouted. They were immediately sown in drills, and covered about two inches in depth, and in a few days the ground was completely cracked with the young plants making their appearance; but being entirely too thickly sown, they did not make a growth of more than six to eight or ten inches in height. They appear, however, to be fine and hardy.

PRESERVING FISH.—The *Scientific American* in alluding to the use of sugar in preserving fish, gives the following as the *modus operandi*: After cleaning, sprinkle the fish on the inside with sugar—say a tablespoonful for a five-pound fish, which suffices. Turn it over occasionally to give the sugar a chance to penetrate evenly. It is said that sugar preserves better than salt; and there is this advantage, viz., the fish is tender and tasteful as when fresh.

A Gigantic Pie Bakery.

Pie baking may be called a new industry and, at the same time, one essentially American. For the benefit of our foreign readers, we explain that in the United States a "pie" is the synonymous term for the English "tart" or French "tourte," meaning a compound, generally suggestive of dire misery to dyspeptics, composed of fruit and two crusts of paste. The thick deep pastry of the venison or beef of England and *foie gras* of France have their counterparts among us as pot pies, of which the principal contents are chicken. Their *habitat*, if we may be allowed to use a scientific term in the connection, is New England, where, with the traditional pork and beans, they form a staple exercise for the ostrich-like digestive organs of our Yankee brethren.

Four great firms have united their forces and have formed the New York Pie Baking Company. Fifty thousand pies are daily manufactured, and in event of a strong demand, as many as 65,000 can be supplied. The capital stock of the company is \$300,000. The buildings are admirably arranged for the purpose intended, three stories high, with basement, occupying four full lots twenty-five by one hundred feet, making a total of one hundred and fifty feet either way. The office is located on the second floor of No. 82 Sullivan street. The first or ground floor is used as a retail department. In the rear are located the bakery, store-rooms, sheds, etc. In the basement are affixed the ovens, ten in number.

The weekly consumption of material is 140 barrels of flour, 42,000 pounds of sugar, 5,000 pounds of lard, 500 barrels apples, 60,000 pounds pumpkins, and squashes, 60,000 eggs, 500 bushels berries in their season, 800 pounds beef for mince, 1,500 pounds cocoanut, 100 boxes lemons, and spices accordingly. They also have in constant use about 150,000 pie plates, and give employment to 100 workmen, running 35 wagons.—*Scientific Amer.*

CUCUMBER SALAD.—A lady correspondent of *Hearth and Home* says:—"We have just prepared our winter's supply of cucumber salad, and this is how we made it:—There were about a dozen ripe "White Spine" cucumbers lying on their vines, and these we picked, washed, pared, cut into strips, taking out the seeds, and then to each dozen cucumbers—which we cut up into pieces like small dice—we put twelve large white onions, chopped, six large green peppers, also chopped, one quarter pound each of black and white mustard seed, and a gill of celery seed. These were all mixed together, a teaspoon of salt added, and they were then hung up in a cotton bag to drain for twenty-four hours. Then the salad, with enough clear cold vinegar added to cover it, was put into stone jars and fastened nearly airtight. In six weeks it will be fit for use. It looks as well as it tastes, so white and crisp, and makes an elegant salad for a joint of cold meat.

BRILLIANT AND ECONOMICAL STARCH.—It is said that a brilliant and economical starch finish is made by taking one pound of wheat starch, and stirring it up carefully in six pounds of cold water until it is reduced to a homogeneous paste. One ounce of aqua-ammonia is then to be added by constant stirring, after which the paste becomes slightly yellow and swells considerably. It is next to be diluted with five pounds of cold water, and then brought nearly to a boiling point, stirring continually. After a quarter of an hour at this temperature, all the surplus ammonia will have become volatilized, and the mixture will be found to furnish an economical size, useful for a great many purposes. Linen starched with this not only becomes stiffer, but much more lustrous. It may also be used for coating wood to be polished, as it completely closes the pores.

THICKENED MILK.—There is no better dish when diarrhea is common among old folks and children than good thickened milk. This is how I make it, very nice way: Take half a gallon of morning's milk, not skimmed, and put on to boil, stirring occasionally. Break a fresh egg into flour well salted, stir it and rub it between the hands until all the flour that can has been worked into it, then just as the milk reaches the boiling point scatter it in, stirring all the time—one minute will have cooked all the lumps; pour into a tureen, and then add a good lump of butter. This is a good and safe food at any time of the year. Always let there be a half cupful of water in the kettle before the milling is put in, that will prevent it from burning.

If you do not wish to have white flannel shrink when washed, make a good suds of hard soap, and wash the flannel in it, without rubbing any soap on them; rub them out in another suds, then wring them out of it, and put them in a clean tub and turn on sufficient boiling water to cover them. A little indigo in the boiling water makes them look nicer. If you wish to have your flannels shrink, so as to have them thick, wash them in soft soapsuds, and rinse them in cold water. Colored woollens that incline to fade should be washed in beef's gall and warm water before they are put into the soap-suds. Colored pantaloons look very well washed with beef's gall and fair warm water, and pressed on the wrong side while damp.

SOAP ADULTERATIONS.—It is stated by Jean that our ordinary soaps are so adulterated, under pretence of cheapness, that little of soap remains but the name. The chief adulterant is resin, which combines with the potash or soda in place of the 50 or 60 per cent. of fatty acid that should be present. These alkaline resins impart to the soap the power of lathering copiously, and they even saponify in water containing gypsum. These good properties are, however, counterbalanced by serious disadvantages. If resinous soaps are used in fulling cloth, they produce blemishes. They also impart to worsted stuffs a peculiar greasy lustre, and wool scoured with these takes the mordants and dyes unequally.

CHICKEN JELLY.—For chicken jelly, take a large chicken, cut it up into small pieces, bruise the bones, and put the whole into a stone jar with a cover that will make it water tight. Set the jar in a large kettle of boiling water, and keep it boiling for three hours. Then strain off the liquid, and season it slightly with salt, pepper and mace, or with loaf sugar and lemon juice, according to the taste of the person for whom it is intended. Return the fragments of the chicken to the jar, and set it again in a kettle of boiling water. You will find that you can collect nearly as much jelly from the second boiling. This jelly may be made of an old fowl.

POTATO SNOW.—This requires very white, smooth and mealy potatoes. Boil them very carefully, peel them, and set them on a plate in the oven till they become very dry and mealy. Then rub them through a coarse wire sieve into the dish into which they are to be served. Do not disturb the heap of potatoes before it is served up, or the flakes will fall and it will flatten. It is very pretty in its appearance.

A Phase of Miner's Life and Death.

In October of 1871, there came to Bannack for supplies, a miner riding a mare followed by a colt. He purchased his goods, paid for them in dust, exhibited a well-stored purse, told some parties he had a "good thing" on one of the tributaries of the Big Hole, and got out of town. The same season a half-breed living in Bitter Root, while hunting on a tributary of the Big Hole toward Salmon, discovered this miner at work, and was paid several hundred dollars not to reveal his whereabouts. It is said the half-breed keeps his compact faithfully. It appears also that the miner told parties that in good time he would make public the locality of the diggings, that he wished first to get two or three old friends here. This much of life.

During the present season the surveying party running the railroad line across the Big Hole and Salmon country, found on one of the tributaries of the Upper Big Hole the skeleton of a man, evidently dead some months, a saddle and canteen, the latter said to have contained a considerable amount of gold. Recently Thos. Lavatta and Thos. Pambrum, who have, with "Dominee," been hunting for the diggings of the mysterious miner in that region found the mare and colt with which he was seen in Bannack in '71, but no trace of the miner or diggings. About a month ago there came to Deer Lodge a party of three men from the States who had a letter of instructions from a miner to out fit at French Gulch, and take a certain trail which would lead them in a direction by which they could reach the mines, which he told them was very rich. They also had a rough draft of the country in which the mines were situated, said to be in a rough country covered with thick heavy timber. These men, and also Lavatta's party, are now searching in that immense belt of unknown country for the mines found by the solitary prospector, from which he had taken a good supply of gold to which he had invited his old friends, and in preserving the secret of which he had yielded up the companionship of his fellows, his comfort and his life. These are the links of circumstantial fact. It is fair to infer that the skeleton was that of the mysterious miner of Bannack, and that in the mountain fastnesses he died, of accident or illness, famished of food or perished of cold will likely never be known until Time shall end and Death yield its archives to the Great Ruler. We have not learned the name of the man, but the story, which is true, commended itself as one of those incidents, not remarkable to our Territorial readers, but showing to those of the older communities a phase of frontier life, and the perils that are sometimes encountered in the endless search for gold.

It is proposed to tap the waters of Tulare Lake at its lowest level by a navigable canal, drawing ten feet in depth of water, with a width of 60 feet on the bottom and 120 feet on the top, and to run this canal to tide water, on a grade of three inches to the mile; and as Tulare Lake is about 250 feet above the level of the sea, it would leave an elevation at Antioch of 200 feet to be utilized as a means of discharging grain into the holds of ships. It is English capital seeking investment in this enterprise.

The Resources of Japan.

A writer in *Blackwood's Magazine*, speaking from personal knowledge of the natural resources of Japan, says: "In minerals the country is very rich. The precious and useful metals are found there in large quantities, as well as coal, and a few mines are already worked on an important scale. Rock crystal is abundant, pearls and corals are fished along the coast, but no diamonds, or indeed any other stones of value, have yet been found. We all know how able the Japanese are in metal working, especially in cutlery and gold and copper; we have but a general idea of the matchless finish and subtle delicacy of the handling, and of the talent which that handling reveals. With the skill which they have so long possessed, and with the capacity of imitation (let it be remembered that they built their first steamboat and its engine solely from a description in a Dutch book), it may be expected that they will soon produce all the hardware with which we now supply them. In manufactures generally there has not, so far, been much development, though several European articles, such as window glass, grape wine, and beer are beginning to be made on a small scale. In the staple products of Japan, in lacquer, porcelain, and silk crape, no change can possibly be wished for; they are so perfect as they are that foreigners have not learned to equal them. Indeed, the secret of good lacquer and of weaving silk with the same pattern on both sides has never been discovered outside Japan.

CLOTHING.—The destruction in Boston of 5,000,000 suits of clothing, including the entire supply of woolen clothing for Canada, and the North Western States has caused a large advance in the price of wool in New York, and will have the effect of increasing the price of all clothing now being manufactured. But no change need be expected in the Cal. market, at least no upward tendency, as the stocks imported for the Fall trade were heavier than ever before, and as the demand from Oregon and the Territories did not come up to the expectations of the importers. In fact we have at present stocks on hand which are certainly not less in value than four million dollars. The only effect that may be expected will be an increased demand for the flannel goods produced by the Woolen Mills all over the coast.

DUCKS AS INSECT DESTROYERS.—When at St. Louis last we fell in with our worthy friend Charles Aenker, of Waterloo, Ill., and as he is an enthusiastic cultivator of the grape, the conversation turned, of course, upon that topic. We talked of insect depredations, and the best means of preventing them, when he stated that they troubled him but little, and said he raised over one hundred ducks in his vineyard last season. He says that it is truly wonderful with what diligence they dart after all kinds of bugs, thrips, flies, and small snails, and he considers them among the best of insect exterminators. As they are also a very useful bird, lay a good many eggs, and are not "hard to take," when roasted, we made a note of this for the benefit of our readers, whom we would advise to try it.—*The Grape Culturist.*

AMERICAN COAL.—The exportation of American coal to England has already begun, and several hundred thousand tons have been purchased on English orders. The purchases are of soft or bituminous coal, which is more commonly used in Europe than the anthracite. Several vessels have left Georgetown, D. C., with cargoes of coal for foreign countries, and others are expected to clear before the close of navigation. English manufacturers will not be able to compete very long with American industry if they have to use American coal. The manufacturers must come where the coal is cheap.

COAL IN TURKISTAN.—In Turkistan, Central Asia, near the Yusaf Pass, splendid coal deposits have been discovered. There are foundries at Kabul, and it is considered a most opportune event for their prosperity. Three hundred camel loads of the valuable article were transported from the coal fields to these works; and it is considered that the discovery will in many other ways add to the development of the material resources of the East. If the Turkistanese were a progressive people, which they are not, we might soon hear of some enterprising Yankee undertaking to build a narrow-gauge railroad from the coal-beds to the Kabul foundries.

THE LARGEST STEAM HAMMER.—Preparations are being made at the Woolwich Arsenal for the erection of the 30 ton Nasmyth steam hammer, the largest ever constructed. It will be able to strike a blow equal to the weight of about 800 tons, and the bed for the anvil has therefore to be of enormous strength. An excavation 45 feet square and 20 feet deep has been made, then piles, about 100 in number, driven into the solid gravel about 20 feet and the interstices filled up with concrete; on these was placed a block of iron 30 feet broad and 11 inches thick, weighing 160 tons.

A new rifle, the invention of a Wurtemberg gunsmith, is attracting the attention of the Prussian Government. It is said to be capable of firing twenty-six shots per minute, and to have a range of over 1,300 yards.

ADDRESS

To the Farmers of the State
BY THE COMMITTEE OF THE
California Farmers' Union.

During the late State Fair there met in Sacramento, a Convention composed of delegates elected by Farmers' Clubs, representing eleven of the best agricultural counties in the State. The objects of that Convention were, to consult on the propriety of organizing a State Association, as a medium of communication between the local Clubs, to canvass the condition of the agricultural interests and their relation to the other industries of the State, and if possible to devise some means for the better promotion and protection of those interests in the future.

After a thorough interchange of views, and a careful and candid survey of the whole field, it was unanimously resolved by that Convention, that, not only the agricultural interests but all other dependent industries, especially the mechanical and manufacturing, might be materially benefitted by such an Association conducted upon broad and enlightened business principles.

Hence the organization of the
California Farmers' Union—Officers.

As a permanent Association, the members of which are to consist of delegates from all permanently organized Farmer's Clubs, horticultural, vinicultural, wool and stock growing societies in the State, organized for self protection.

The following are the officers of the Union, who form the Board of Directors and have the general management of its affairs for the first year. John Bidwell, of Butte, President; J. K. Snyder, of Sonoma; E. S. Holden, of San Joaquin; T. Hart Hyatt, of Alameda; W. S. Manlove, of Sacramento; D. C. Feely of Santa Cruz; and W. H. Ware, of Santa Clara, Vice-Presidents. I. N. Hoag, of Yolo, Secretary; and A. T. Dewey, of Alameda, Treasurer.

The Association found it impractical during the excitement and bustle of the Fair, to determine upon any properly considered and matured plan adequate to the magnitude and difficulties of the questions with which, from interest and duty, they felt called upon to deal. Consequently, that work has been left to the Board of Directors, composed of gentlemen elected with due regard to their intelligence and fidelity to the cause they are expected not only to honorably but reasonably represent. For similar reasons, the Convention put forth no resolutions, but appointed the undersigned on a Committee of five, to prepare and publish an address to the farmers of the State, setting forth the disadvantages under which the agriculturists as a class are laboring, the grievances which they are suffering and showing the importance of strong and permanent organizations and early and united action.

In Ancient and Modern Times.

In the early history of man, before he had learned the advantages of associations and combinations, his progress towards civilization and power were slow; but the benefits of Society were more equally divided. Property and its accompanying advantages were more uniformly distributed. The great difference now existing, between the most civilized and powerful nations of the earth, and the less civilized and weaker nations and tribes, is owing more than to any other one cause, to the fact that the former have learned the advantages of associations and combinations, and have formed themselves into well and strongly organized Governments, through which they act as a unit for the mental and physical improvement of their individual citizens, for the promotion of their interests, and for the assertion and enforcement of their wishes and rights as against other nations of the earth.

The very occupation of the farmers leads to an isolated life, to primitive and circumscribed rather than modern and cosmopolitan views and modes of action, to individual reliance and single-handed, and consequently often to weak and ineffectual effort. On the contrary the occupation of the manufacturer, of the merchant, of the banker and the general business men of the towns and cities, lead to frequent intercourse and interchange of thought, to associations and organizations, and consequently to collective, powerful and successful effort. The tiller of the soil was formerly considered the most independent and happy man in the world, and before modern civilization had brought men together in the towns and cities, and taught them the virtue and power there is in associations and combinations, he undoubtedly was so.

By his labor and skill in the cultivation of the soil, he not only produced all the necessities of his own livelihood, but furnished those necessities to all other classes, and while they had no advantage over him in other respects, he held within his own hands the means by which he could determine his own pecuniary standing and social position. However, taking his lessons from Nature, which dispenses her bounties with an equal hand to all, he never thought or practiced oppression, but conceded to all an equitable division of the benefits of society, and a just distribution of the comforts of life. It is as true now, as then, that the success and prosperity of towns and cities, and the power and influence of States

and nations, and indeed the advancement of civilization itself is based upon agriculture, and yet it is equally true, that through the influence and power of associations and combinations which have been brought to bear by other classes against the farmer, isolated and single handed as he has allowed himself to remain, his standing and position both financially and socially are entirely the reverse of what they formerly were.

The Want of Associations.

In place of the master, he has by his own neglect, by failing to keep up with the spirit of the age, by want of association for mutual, individual and general improvement and for the promotion and ennobling of his own calling, by want of combinations for the protection of his own interests against the association of other classes, he has become practically the slave of modern society. To a great extent the lands he cultivates are mortgaged to the banks and monied men of the towns and cities for the loan of the very money which they have accumulated by his oppression, and he is compelled to pay such rates of interest as his greed may dictate. Even worse than this, by the political influence of these money loaners and their associates in interest, our laws are so made that the borrower is required to pay the government taxes, both on the land and money borrowed, as well as on the growing crops, planted with that borrowed money.

Costly Effects of Combinations Against Producers.

Again, when the farmer is so fortunate as to produce a surplus, and desires to send that surplus to the best markets, whether at home or abroad, he finds that not only the carrying facilities within his own country, but even those of the high seas of the world are as effectually united and combined against him as if owned and controlled by one man. And notwithstanding the article he has for sale bears a high and remunerative price in those markets, the exorbitant freight demanded and forced from him for moving it leaves no profits.

It is a mortifying and humiliating fact to the farmers of this State, who have this year produced 20,000,000 bushels of wheat for export, that one man by his combinations with capitalists, railroad, steamboat and vessel owners, has almost as complete control over them and their wheat as though that wheat was their own property and they his slaves. That that one man has the power to enforce his will or wish in regard to the disposition and price of that wheat with the same absoluteness as though he had the whole force of the government at his command.

This is not only a very mortifying and humiliating fact to these farmers, but a very expensive one, costing them in the aggregate from \$15,000,000 to \$20,000,000.

Another reason of complaint may be mentioned, the habitual extortion, by many of the thousand and one middle men, that in this State stand between the producer and the consumer, and demand and receive the lion's share of each article they get their hands on, for the performance, to a large extent, of an unnecessary labor. The customs of these men have grown to be so burdensome and exacting and so oppressive both to the producer and consumer, that in many portions of the State, large quantities of perishable products, such as fruit and vegetables are annually allowed to go to waste rather than to send them to market, and the producers are unwilling losers of millions.

By the combinations of the distillers of whisky in the Atlantic States and the manufacturers and sellers of poisonous concoctions in our own State, the introduction and use of our own pure products of the vine, both there and here is not only prevented, but our manufacturers are forced to pay an exacting and unjust tax upon every gallon produced, thus discouraging and crippling an industry which with a fair show would soon become one of the most profitable in the State, and yield an annual income of millions to our farmers.

We could go on naming the causes of complaint, and the disadvantages under which we, as a class, are laboring, but farmers need not be told of their grievances. Their bitter experience this year should be sufficient to arouse them to a sense of their position and to impel them to think and act for themselves before the power to do so is entirely wrested from them.

We Must be Up and Doing.

The remedy lies in our own hands. We must assert, recover and maintain our original and rightful position in the body politic. Being the nurseries and supporters, we must resolve no longer, voluntarily to remain the slaves of non-producing classes. Let us learn and understand our real position. Let us enter this struggle, for a struggle it really will be, not for ourselves alone, but for our posterity—for the good of the State and nation—for the perpetuity of the reality of republican institutions. For, rest assured that when the agriculture of our country shall be permanently subjected to any other interest and shall cease to prosper, then her hand-maids, manufactures and commerce and all the other industries will linger, and in time die for want of food. History repeats itself and the fate of ancient Carthage, Troy and Babylon, Greece and Rome, may serve as warnings to us.

Then let us be up and doing. We must meet our oppressors with the same means they have invented to use against us. We must form associations with which to meet associations. We must make combinations with which to oppose combinations. And first of all we must have a good understanding among ourselves.

Organize and Increase in Strength.

We must establish mutual confidence, become acquainted with each other, compare notes and exchange ideas, frequently associate and talk together. And out of this social intercourse and mutual interest will grow plans for the attainment of our just and honorable aims.

A good beginning has already been made in the organization of Farmers' Clubs, and in the formation through these of the "California Farmers' Union." To this extent we have already the means of communication one with another. But the organization embraces comparatively but few of the farmers of the State. It should embrace all. It is now weak and unable to cope with the power that is arrayed against it. Let the farmers of this State all organize themselves into clubs and put themselves into communication with each other and the Farmers' Union, and send representatives to its meetings for the direction and assistance of its executive officers, and we guarantee that no one man or set of men in 1873, or at any time hereafter will dictate the price of grain or other agricultural products, so as to rob honest labor of millions of its hard earned money. We will also guarantee that the money loaners of this State, will be glad to loan their money to the farmers at greatly reduced rates of interest—rates as fair as those offered on less secure city property—or that foreign capital will supersede them in their business and leave them minus their monthly per cent.

Let the farmers of this State all thus organize and act in concert for the promotion and protection of their own calling and interests, and no common carriers or combination of common carriers will hereafter be able to exact of them double price for moving their produce to market, or dictate to them when or how it shall be moved and sent forward.

Plans are Yet to be Formed.

There are many other impositions now practiced upon the farmer, which the committee deem it unnecessary to enumerate, but which by organization and concert of action may be abated and removed, and the committee might enter into an explanation of the plans by which it is possible to remove them, but they do not deem it in the line of their duty, if it were even prudent to do so, in an address to the public before such plans shall have been thoroughly canvassed by the Board of Directors, and endorsed by the power that appointed them.

We trust that this address will meet with a hearty response from the farmers everywhere, and call forth from old and newly formed clubs, many valuable suggestions and recommendations to the Board of Directors. We also believe that the Board will not be long in forming the plans of action to be carried out by the endorsement of the Clubs, and the co-operative aid of the great body of farmers, who, seeing plainly the time of their advantage will embrace it.

In addition to the above considerations many others may be used as inducements for the organization of Clubs in every agricultural district where a sufficient number of farmers can assemble together to keep up the interest in their meetings.

Other Benefits of Meetings.

The intellectual and social culture of the members, is, of itself, no small consideration. The frequent meetings of the farmers and their families for physical rest, and mental and social improvement, especially in the discussion of subjects affecting their dearest interests, and every day welfare will tend to make farming itself more profitable, honorable and attractive. Such meetings will give us, not only better tilled and better improved farms, but more highly cultivated and more intelligent, and hence, more useful men and women. They will thus be prepared the better to comprehend and overcome the many difficult questions which are constantly presented for solution. With from one to two hundred clubs organized, and embracing the larger part of the farmers of this State, each holding fifty-two meetings and discussions a year, who can foretell the benefits that would result?

Farmers: We earnestly urge you to organize, and to assist you in so doing and to inform you more definitely of the nature and objects of the California Farmers' Union, we will furnish you, on application, free of cost, blank copies of Constitutions for clubs, and copies of the Constitution of the "Union."

Address I. N. Hoag, Secretary California Farmers' Union, Sacramento.

Respectfully,
I. N. HOAG,
G. G. BLANCHARD,
A. T. DEWEY,
Committee.

HUMBUG ADVERTISING.—We have received an order to publish an advertisement containing the following:

DIVORCES.—Absolute divorces legally obtained in different states. Legal everywhere—desertion—general misconduct, etc., sufficient cause—no publicity required—no charge until divorce granted—advice free, etc.

We look upon the advertiser as one of the "frauds" who practice upon both publishers and readers too frequently in this country.

SCIENTIFIC LECTURES.—Dr. Payne will deliver another free lecture to the ladies and gentlemen of San Francisco, at Platt's Hall, on Monday night, Nov. 25th. Subject: Heart, Lungs and Appendages, etc. The last lecture was listened to by a full house.

San Luis Obispo County.

EDITORS RURAL PRESS:—Cambria, in this county, is a hamlet of quite modern origin, dating an existence hardly five years since; and is not at all pretentious, being composed of half a dozen stores, two hotels, two blacksmith-shops, and a saw-mill, with a score of dwellings—more or less comfortable—and with "Sam Sing" to renovate. That labor question is a vexed one. Bridget and Patrick are worked upon by the demagogues to believe that many of their hardships are attributable to the presence of "Sam Sings" and other intruders; but the labor question is as far from a satisfactory solution as ever. I hear frequent complaints among the rising shepherds of the impossibility of obtaining reliable and permanent "help."

We are evidently living in an age of unrest—when the approaching problem to be solved between labor and capital is affecting everybody with the menacing shadow which is cast before all great coming events. Those persons who, like the inhabitants of some of our rural districts, are remote from the great commercial centers, of course are effected less sensibly by these vexed questions. The mind and body of the remote agriculturist or stock-raiser are more free to deal with and give a natural answer to the labor question, from the fact that they are in some measure all laborers, and in an atmosphere that admits of clearer insight to nature. Here, within a circle of thirty miles, is one of the happiest combinations of soil and climate for agricultural purposes it has ever been our fortune to meet with. There is on the San Simeone Creek a patch of two measured acres of ground that produced this season 214 bushels of good barley at one crop, and although there is more available land to the acre in the circle above mentioned, and nearly every acre is in use, not one-half its productive capacity has been developed.

The amount produced by this county will eventually occupy no mean position as a means of employment and real wealth to thousands more than now inhabit the county.

I have another corroborative witness to the value of the bald or pearl barley as wholesome for both man and beast, in the person of a pioneer who has been in the State since 1846, and in this county five years. Mr. J. Van Gordon owns a league of the Pajol or San Simeone ranch, 200 acres of which he has in thorough cultivation. This gentleman also gives in his testimony in favor of dry sowing or summer fallowing and alternate pasturing or resting the lands—giving as a firm conviction that the lands that are worked after the rain falls are injured immeasurably by such workings; and that the only true policy of the farmer is to rest the land in some way; that even the volunteer is a rest, and on two pieces of ground, side and side, the third (the second being volunteer) is always better than where the ground has received three successive seasons of thorough cultivation. I found one man on my way down who has kept his land in a fair productive condition by sowing one year and volunteering the second, and pasturing with sheep or cattle the third and fourth. The location is a mile west of Mountain View, Santa Clara county; the amount of land thus located is from eight hundred to fifteen hundred acres. This gentleman, (Mr. Emmerson) has also demonstrated the success of the growing of the finer grades of long staple or combed wools by the use of the "Morton Flanderin" cross with the Merino, shearing a fleece at six months of nearly or quite two inches in length, and of fine quality.

I find that all down the Salinas and until the Coast Range is crossed, there is nothing like burrs if we except the seed of the Alfalfa, to prevent the growing of the long fine combed wools.

It appears, however, that some people will not make an effort to improve their stock for any consideration; not even the all-swaying influence of gold tempts them to leave old beaten trails.

There is an instance of this in the difference of price between two herds of cattle taken to San Francisco from adjoining ranches in this county this past season—cattle of same age—bringing a difference of five to ten dollars per head, through the whole herd. One was the long horn—Mexican—and the other graded American cattle.

F. M. SHAW.
San Simeone, Nov. 12th, 1872.

TEA GROWING.—"The tea supply says the *Alta*, so long monopolized by China and Japan, is destined to receive very considerable competitive reinforcement from the Indians. Think of a stretch of tea-gardens, a thousand miles in length lying along the base of the Himalayas, and covered with snow at least two months in every year, yet yielding largely, and a vigorous crop."

This is suggestive of the reason why our experiments in tea growing have proved failures. Instead of making our experiments among the foot-hills where the snow lies two months in the year, we tried to convert the tea plant of a temperate zone, into a tropical one; by making our plantations in the low hot valleys. Even in El Dorado county where they came the nearest to success, snow never falls more than three inches in depth, or remains longer than a few hours.

Salem.

[By our Traveling Correspondent.]

The Capital of Oregon is a beautiful town between the Willamette River and the Oregon & California Railroad, 78 miles south from Portland. The streets are regularly laid out, 99 feet wide, and many of them planted with trees in such a way as to make the place very attractive. Many people come here to educate their families, attracted both by the pleasant surroundings of the city and the excellent educational advantages. The place may be said to have been founded about 1840, and from the first foundation has been noted for the religious and educational spirit of its people.

The State Capital

Has been permanently located here by an appropriation of \$100,000 by the last Legislature for the erection of a Capitol building. A new Penitentiary has lately been erected at a cost of \$50,000 aside from the labor of the convicts. They have a farm of 150 acres connected with their institution, and can be commended as a very industrious body of men, for we see that they have made in one season 2,500,000 brick, and raised potatoes, oats, barley, hay and vegetables by the quantity, besides doing a large amount of carpenter, blacksmith and harness work. They are building a large tannery. In this line of business we learn that they are prepared to do "Anything to beat Grant."

The Industries of Salem

Are naturally very promising, situated as it is in the very heart of the Willamette Valley, a valley of beautiful prairie and woodland, and famed as the best of Oregon, if not of the whole West. There are the woolen mills running 90 hands, turning out 30,000 to 40,000 yards of cloth per month, and using up 400,000 pounds of wool per year. The two saw-mills use nearly 3,000,000 feet of logs, and the flouring mills can grind 450,000 bushels of wheat each year.

Agricultural Works

Costing \$100,000 are nearly completed and they will soon begin the manufacture of mowing machines and water wheels on a large scale. Then there are the oil works, the chair factory, the sash and blind factory, etc., all driven by water power from the Santiam river.

A very unfair advantage was taken of the proximity of this stream to Mill Creek, and a canal dug for a short distance from the Santiam to Mill Creek, so as to raise the gates and keep the creek at high water mark the year round.

Now Mill Creek empties into the Willamette at Salem, with a fall of fifty feet in a short distance, and this gives the water power. There have been two large races dug, one on either side of the town, and they have all the water power needed for a long time in the future. With the present races 1,000 horse-power is available; but this amount can be increased by more digging. Good water privileges are generally in a hilly country, but here is one surrounded by as nice and level a country as you would care to see, with room for the creation of ever so many mills.

Farming Lands

In the vicinity of Salem are the black loam of the prairies, the black sandy soil of the river, and the red and black loams of the hills. These vary in price from \$5 to \$25 per acre, according to improvements, locality, quality of soil, etc. There are of course extremes beyond these figures, and very fine land in the immediate vicinity of the city is held as high as \$100 per acre. There are not many sales of land this season, as the immigration has been very light. Last year many came from California, driven out by the drouth, but when they have such a season as the past, people seem to think it a good enough place to stay in. There is a movement all the time going on from this valley to the country east of the mountains, by those who want very cheap lands on which they can raise stock on a large scale. No less than 30,000 head of Texas cattle are being driven to this country this year, and many Darhams and high grades are going from this valley to improve the stock.

Mr. Fisk

Is a very large breeder of cattle, having a herd of 35 thoroughbred Darhams, and a very large number of grades. He took several premiums at the State Fair. It was no small honor to take a premium at Salem on Darhams this year.

J. L. Parish

Has a large variety of pure bred fancy fowls. The eggs cost him \$2 each for those that reached him safe. He has 25 coops of all the fashionable varieties, and his fowls show the marks of pure breeding. Some Harney Games with two spurs on each foot were new to us. He asks only \$3 per dozen for pure bred eggs. He has some fine specimens of Essex hogs, and is just going into Angora goats. He was one of the first settlers, who came out as missionaries in 1840.

John L. Minto

Is breeding to establish Spanish Merino sheep as good as the best and without horns. He has some very fine animals, and is making careful experiments to compare them with the best of the horned sheep. He is thoroughly versed in the current agricultural literature, and promises to contribute to the Press.

[Further notes of our correspondent from this section will appear next week.—Ed.]

SUCH READERS as feel obliged to stop some other paper in order to subscribe for ours, may send their name along at once with one year's subscription, and we will give them credit for at least three months extra time.

SUBSCRIBERS may deduct the cost of a registered letter or postoffice order when they remit us their subscriptions that way, but we will not pay the extra expense of sending by express.

PIANO PURCHASERS.—M. GRAY, Esq., San Francisco: I take great pleasure in certifying to the entire satisfaction the Haines Piano has given since I purchased it of you, almost five years ago. It has been moved three times, the last time from your city to this place, and it still has been tuned four or (at the most) five times since in my possession. It has fully come up to all expectation. Respectfully yours, ED. CARLSON. Treasury Dept., Sacramento, Sept. 19, 1872.

Notice to Farmers and Others.—Skilled plowmen, general farmers, teamsters, laborers, mechanics, servant girls, etc., can be obtained by applying by letter or personally, at CALIFORNIA LABOR AND EMPLOYMENT EXCHANGE, 637 Clay street, extending to 630 Commercial street, San Francisco. 20v4-3m

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Farmers, everywhere, write for your paper.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Nov. 21.

FLOUR—The interior and local demand is fair, with a light inquiry for export. We quote prices as follows:

Superfine, \$3.87 1/2 @ 4.00; Extra, in sacks, of 196 lbs. \$5.12 1/2 @ 5.25; Oregon brands, \$4.75 @ 5.00 in sacks of 196 lbs.

WHEAT—The market is steady at unchanged rates during the week. Sales aggregate 60,000 sacks fair to choice, at \$1.50 @ 1.62 1/2. The range for shipping grades is \$1.57 1/2 @ \$1.60; Dark Coast, \$1.40 @ 1.45, and Bright Coast \$1.50 @ 1.55, choice milling, \$1.62 1/2 per 100 pounds.

The latest Liverpool market quotations to Associated Press, dated Nov. 20th, are: average California wheat, 12s 4d @ 12s 6d; California Club wheat, 13s @ 13d. 3d.

BARLEY—The market is active. Bay, \$1.30 @ 1.40; Coast, \$1.25 @ 1.30 per 100 pounds.

OATS—Market is firm. Ordinary to choice, \$1.65 to \$1.85 per 100 lbs.

CORN—New crop, \$1.25 @ 1.35 per 100 lbs. CORNMEAL—Is quotable at \$1.75 @ \$2.00 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$2.00 @ 2.25 per 100 lbs.

RYE—Is quiet at \$2.00 @ 2.25 per 100 lbs.

STRAW—Quotable at \$7.25 @ 8.50 per ton for cargo lots.

BRAN—Price has advanced to \$27.50 per ton from the mill.

MIDDLINGS—For feed, are selling at \$32.50 per ton from mill.

OIL CAKE MEAL—Is steady at \$30 per ton from the mill.

HAY—Receipts have been free during the week. Wild Oat, \$14 @ 15, and choice wheat, \$18 @ 20.00 per ton. Quotable at close at \$13 @ 20.00 ordinary to choice.

HONEY—Best Los Angeles and San Diego sells at 20 @ 22 1/2; other kinds 10 @ 15 in comb; strained, 10c @ 15c, per lb.

BEESWAX—Quiet at 33 @ 35c per lb.

POTATOES—Receipts have been very heavy. Pigeon Point, \$1.50 @ 1.55; Cuffey's Cove, \$1.25; Petaluma, \$1.20. Sales of different kinds at from \$1.25 to \$1.50. Carolina, 75c. per 100 lbs.

ONIONS—Quotable at \$3.00 @ 4.50 per 100 lbs.

WOOL—The market has been quite active this week, and we note sales of 300,000 lbs at current rates. Full, 13c @ 14c. for burry, and 17 @ 18c. for clean; 20c @ 21 for choice.

TALLOW—Good quality of Cal. 8 @ 8 1/2 c. SEEDS—Flax 3c.; Canary, 3 1/2 @ 4c. Mustard, 1 1/2 @ 2c. for white, and 2c @ 3c per lb. for brown.

PROVISIONS—Following are jobbing quotations: California Bacon 13 @ 14 1/2 c per lb.; Eastern do. 12 @ 13 for heavy and 14 1/2 @ 15 for sugar-cured Breakfast; California Hams 15; Eastern do. 19 @ 20c; California Smoked Beef, 13 @ 13 1/2 c. per lb.

BEANS—The following are jobbing rates: Pea \$3.25 Small White \$3.25; Small Butter, \$3; large \$3.50; Bayo, \$3.12 1/2 @ \$3.25; Pink, \$3.25 per ctl.

NUTS—California Almonds, 8 @ 10c. for hard and 18 @ 25 for soft shell; Peanuts, 5 @ 8c Pecan, 20c @ 25c; Hickory, 12c; Brazil, 16c. Chili Walnuts, 12 1/2 c.; French Almonds, 25 @ 30c.; Princess Almonds, 35 @ 40c.; Filberts, 18c; Cocoanuts, \$10.00 @ 12.00 per 100.

HOPS—California are dull and nominal at 30 @ 35c. per lb.

FRESH MEAT—We quote slaughterer's rates as follows:—

5 1/2 @ 6c.; dressed, grain-fed, 8 @ 8 1/2 c. per lb. POULTRY—Live Turkeys, 18 @ 20c. @ 25c. Hens \$7.50 @ 8.00; Roosters, \$6.50 @ 7.00 per dozen; Spring Chickens, \$4.00 @ 4.50; Ducks, tame, \$9.00 @ 10.00 per doz.; Geese, tame, \$15 @ 18 per dozen.

WILD GAME.—Quail, \$2.00; Hare, \$3.00 @ 4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, \$75c.; Mallard Ducks, \$4.00; Teal, \$2.00 @ 3.00; Geese, \$3 @ 4 per doz.; English Snipe, \$2.00; small, 75c @ \$1; Venison, 9c. @ 10c.

DAIRY PRODUCTS—Fresh California Butter is quotable at 60 @ 65c. for choice, and 30 @ 45c. for common kinds. New firkin is quotable at 25 @ 35c.; pickled, 35 @ 40; New York, 32 @ 35c; Western, 15 @ 25c.

CHEESE—New California, 12 @ 15c; Eastern at 15 @ 16c. @ 17c.

Eggs—California fresh, are sold at 55 @ 57 1/2 c.; Oregon, 40 @ 45c.; Eastern, 30 @ 35 per doz.

LARD—California 12 @ 13. Eastern in cases 13 @ 13 1/2 c.; do in tcs. 11 1/2 @ 12c.; in kegs, 12 @ 12 1/2 c. per lb.

HIDES—Sales for the week embrace 1,670 Cal. dry at 17 @ 18c., and 1,530 salted at 8 @ 9.

FRUIT MARKET.

Tabiti Or. per 100 @ 50 00
Limes, Cal. M. 10 @ 12 50
Lemon, M. 5 @ 6 00
Maltosa, do. 10 @ 12 00
Bananas, Cal. bunch 3 @ 00
Pineapples, Cal. doz. @ 00
Apples, Rus. b. 1 @ 00
Rellflower, do. 1 @ 25
B. I. Greening 1 @ 25
Northern Spy 1 @ 00
Baldwin 1 @ 00
Saratoga 1 @ 00
Spitzenberg 1 @ 50
Pears, Pound, b. 1 @ 00
Winter Nellis 1 @ 50

Glout Morceaux 75 @ 100
East. Beurre 1 25 @ 50
Quinces, Cal. 2 @ 50
Pomegran. 1 @ 00
Plums, Cal. 10 @ 12 1/2
Figs. 6 @ 8
Strawb. 15 @ 18
Grapes, Mission 2 1/2 @ 3
Rose of Peru 4 @ 6
B. K. Hamburg 4 @ 6
Black Prince 4 @ 6
Muscad. of Al. 4 @ 6
Flame Tokay 5 @ 8
Black Morocco 8 @ 12 1/2
White Grapes 14 @ 1 1/2

DRYED FRUIT.

Pitted, do 18 @ 20
Raisin, do 6 @ 12 1/2
Black Figs, do 7 @ 12 1/2
White, do 15 @ 20

VEGETABLES.

Cucumbers, Cal. box 1.50 @ 2.00
Summer Squash, do box @ 00
Tomatoes river, Cal. 1/2 @ 1.50
Syring Beans, do 4 @ 5
Lima Beans, do 3 @ 3 1/2
Egg Plant, do 2 @ 00
Peppers, do @ 00
Okra, do 8 @ 7

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING—There is very little demand for Grain sacks. English Standard Wheat bags, hand sewed, 15 1/2 @ 15 1/2 c.; Flour sacks 8 1/2 @ 9 1/2 c. for qrs. and 13 1/2 @ 13 1/2 c. for hfs. Standard Gunnies 17 1/2 c.; Wool 70 @ 75c.; Barley sacks 16c @ 18c.; Hessians, 40-inch goods, 12 @ 12 1/2 c. per yard.

BUILDING AND FENCING MATERIALS.—The demand from the interior and city is fair. Export trade is still light owing to scarcity of tonnage and high freights. Dealers pay for cargoes of Oregon as follows: Rough \$19 @ 20; do. surfaced at \$28 @ 30; Spruce \$17 @ 18.

Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35 @ 40; Cedar \$22.50 @ 32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, Cal. M. 20.00
Rough refuse, Cal. M. 16.00
Rough clear, Cal. M. 32.50
Rough clear refuse, Cal. M. 22.50
Rustic, Cal. M. 35.00
Rustic refuse, Cal. M. 24.00
Surfaced, Cal. M. 32.50
Surfaced refuse, Cal. M. 22.50
Flooring, Cal. M. 30.00
Flooring refuse, Cal. M. 32.50
Beaded flooring, Cal. M. 22.50
Beaded flooring refuse, Cal. M. 22.50
Half-inch Siding, Cal. M. 16.00
Half-inch Surfaced, Cal. M. 25.00
Half-inch Surfaced refuse, Cal. M. 18.00
Half-inch Batens, Cal. M. 22.50
Pickets, rough, Cal. M. 14.00
Pickets, rough, pointed, Cal. M. 16.00
Pickets, fancy, pointed, Cal. M. 25.00
Shingles, Cal. M. 3.00

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Puget Sound Pine—
Rough, Cal. M. 25.00
Flooring and Stepping, Cal. M. 37.50
Flooring, narrow, Cal. M. 40.00
Flooring, second quality, Cal. M. 30.00
Laths, Cal. M. 3.50
Furring, Cal. M. 1c
Redwood—
Rough, Cal. M. 25.00
Rough refuse, Cal. M. 20.00
Rough Pickets, Cal. M. 18.00
Rough Pickets, pointed, Cal. M. 20.00
Fancy Pickets, Cal. M. 30.00
Siding, Cal. M. 27.50
Tongued and Grooved, surfaced, Cal. M. 40.00
do do refuse Cal. M. 27.50
Half-inch surfaced, Cal. M. 40.00
Rustic, Cal. M. 42.50
Batens Cal. M. 1c
Shingles Cal. M. 3.50
Sugar Pine is jobbing at \$50 @ 60 for clear, \$35 @ 45 for second quality, and \$28 @ 30 for third quality.

COFFEE—Costa Rica 19 @ 19 1/2 c.; Guatemala, 18c. Java, 23c; Manilla, 18 1/2 c.; Rio 19 1/2 @ 20; Ground Coffee in cases 30c.; Chicory, 10c.

SPICES—Allspice 14 @ 15c. Cloves, 23c. Cassia 35 @ 36c. Nutmegs \$1.00 @ \$1.10. Whole Pepper 19 @ 20c. Ground Spices—Allspice \$1.00 @ 1.10; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00 @ 1.12 1/2; Mace \$1.50 @ 1.75; Ginger 15c @ 16c.

FISH—We quote Pacific Dry Cod new, in bundles at 6 1/2 c.; Salmon in bbls. \$5.00 @ 6.00, hf do, \$3.50 @ 4.50; Case Salmon, \$3.00 for 2 1/2-lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60 @ 85c per box; Mackerel, No. 1 hf bbls, \$7.50 @ 8.00;

extra, \$9.00 @ 10.00; in kits No. 1 \$2.00 @ 2.25, Mess, \$2.50; Extra mess, \$3.00.

NAILS—Quotable at \$6.00 @ 9.00 for assorted sizes.

PAINTS—Standard White Lead 10 @ 12 1/2 c; Whitening, 2c.; Chalk 2 1/2 c.; Paris White 3c.; Ochre, 3 1/2 c.; Venetian Red, 3c.; Red lead, 11 1/2 c.; Litharge, 11c. @ 12c.

RICE—Sales of China No. 1 at 5 1/2 @ 6 1/2 c. and No. 2 at 5 @ 5 1/2 c. @ 5 1/2 c. Japan, 5 1/2 c.; Patna, 5 1/2 @ 7c.; Table, 9 @ 10c. per lb. for choice.

SOAP—The prices for local brands are 5 @ 10c. and Castile, 10 @ 12c. @ 13c.

SUGAR—We quote Cal. Cnbe at 12c; Circle A Crnshd, 12c. and Granulated 11 1/2 c; Golden C. 10c; Extra Golden C. 10 1/2 c.; Hawaiian 7 1/2 @ 9 1/2 c. as extremes 7 1/2 @ 11c.

SYRUP—Prices may be given as follows: 32 1/2 c in bbls, 35c in hf bbls, and 40c in kegs.

SALT—California Bay sells at \$5 @ \$14; Carmen Island, in bulk, \$14 @ 15; Fine Liverpool, \$23.50 @ 24 ton; coarse, \$18 @ 19.

TEA—We quote as follows for bulk descriptions: Oolong—Canton, 19 @ 25c; Amoy, 28 @ 50c; Formosa, 40 @ 90c; Imperial—Canton, 25 @ 35c; Pingsney, 50 @ 75c; Moyune, 60c @ \$1. Gunpowder—Canton, 30 @ 42 1/2; Pingsney, 50 @ 90c; Moyune, 60c @ 1.30. Young Hyson—Canton, 30 @ 40c; Pingsney, 40 @ 70c; Moyune, 65 @ \$1. Japan—Half chests, bulk, 30 @ 75c; lacquered bxs, 4 1/2 and 5 lbs each, 45 @ 67c; same 3-lbs, 45 @ 90c; plain 4 1/2-lb bxs, 35 @ 65c; 1-lb and 1/2-lb papers, 30 @ 55c @ 1b.

San Francisco Retail Market Rates.

THURSDAY NOON, Nov. 21, 1872.

MISCELLANEOUS.
Butter, Cal. fr. 60 @ 75
do Oregon, 60 @ 75
Honey, Cal. 20 @ 25
do Oregon, 20 @ 25
Swiss Cheese, 60 @ 70
Eggs, Cal. doz. 65 @ 70
do Oregon, doz 45 @ 55
Lard, Cal. 18 @ 20
Sugar, cr. 10 @ 11
Brown, 8 to 10 lbs. 100 @ 00
Beet, do 12 @ 00
Sugar, Map. 30 @ 00
Plums, dried, 15 @ 30
Peaches, dried, 12 @ 00
Wool Sacks, new 70 @ 75

PRODUCE, ETC.
Flour, ex. 30 bbls. 5.25 @ 5.50
Superfine, do. 4.00 @ 4.12 1/2
Corn Meal, 100 lbs. 2.50 @ 2.60
Wheat, 100 lbs. 1.60 @ 1.62 1/2
Oats, 100 lbs. 1.50 @ 1.55

FRUITS, VEGETABLES, ETC.
Apricots, Cal. 10 @ 00
Pine Apples, each 10 @ 00
Bananas, Cal. doz. 75 @ 00
Cantaloupes 10 @ 00
Watermelons 10 @ 00
Cal. Walnuts, 25 @ 00
Cranberries, 75 @ 00
Strawberries, 10 @ 00
Raspberries, 10 @ 00
Gooseberries 10 @ 00
Cherries, 10 @ 00
Oranges, Cal. doz. 75 @ 00
Limes, per doz. 25 @ 00
Figs, fresh, 10 @ 00
Asparagus, wb. 75 @ 00
Artichokes, 75 @ 00
Brussels sprs. 5 @ 00
Beets, Cal. doz. 25 @ 00
Potatoes, New 2 @ 00
Potatoes, sweet, 4 @ 00
Broccoli, Cal. doz. 1.50 @ 2.00
Cauliflower, 100 @ 00
Cabbage, Cal. doz. 1.00 @ 1.50
Carrots, Cal. doz. 15 @ 25
Celery, Cal. doz. 75 @ 100

POULTRY, GAME, FISH, MEATS, ETC.
Chickens, apiece 75 @ 100
Turkeys, Cal. 25 @ 30
Ducks, wild, p. 50 @ 1.25
Tame, do. 1.00 @ 1.25
Teal, Cal. doz. 2.50 @ 00
Geese, wild, pair 10 @ 00
Tame, pair 3.00 @ 4.00
Hens, each 75 @ 1.00
Snipe, Cal. doz. 15 @ 20
English, do 15 @ 20
Quail, Cal. doz. 2.50 @ 3.00
Pigeons, dom. doz 3.00 @ 00
Wild, do 1.00 @ 00
Hares, each 37 @ 50
Rabbits, tame, 25 @ 75
California, 25 @ 00
Beef, tend. 10 @ 20
Corned, Cal. 8 @ 10
Smoked, Cal. 15 @ 00
Pork, rib, etc. 10 @ 15
Chops, do 15 @ 20
Veal, Cal. 15 @ 20
Cutlet, do 20 @ 00
Mutton chops, 12 @ 15
Leg, Cal. 12 @ 15
Lamb, Cal. 12 @ 20
Lamb, beef, ea 75 @ 00
Tongues, pig, 15 @ 12 1/2
Bacon, Cal. 18 @ 00
Oregon, do 18 @ 20
Hams, Cal. 16 @ 18
Hams, Cross's 0 @ 25

Per lb. Per dozen. Per gallon.

Leather Market Report.

SAN FRANCISCO, Thursday, Nov. 21, 1872.
City Tanned Leather, Cal. 25 @ 29
Santa Cruz Leather, Cal. 25 @ 29
Country Leather, Cal. 25 @ 28
Stockton Leather, Cal. 25 @ 29
French skins continue firm. All California skins are source and bring full prices.
Jodot, 8 Kil. per doz. 60.00 @ 85.00
Jodot, 11 to 15 Kil. per doz. 56.00 @ 75.00
Lemoine, 16 to 18 Kil. per doz. 75.00 @ 77.50
Levin, 12 and 13 Kil. per doz. 68.00 @ 70.00
Cornellian, 16 to 18 Kil. per doz. 68.00 @ 70.00
Oregonian, 12 to 14 Kil. per doz. 54.00 @ 60.00
Oregonian, 18 Kil. per doz. 60.00
Simon, 20 Kil. per doz. 65.00
Simon, 24 Kil. per doz. 72.00
Robert, 7 and 8 Kil. 1.00 @ 1.30
California Kip, per doz. 55.00 @ 70.00
French Sheep, all colors, per doz. 8.00 @ 15.00
Eastern Calf for Buckles, per doz. 1.00 @ 2.25
Sheep Roans for Topping, all colors, per doz. 5.00 @ 15.00
Sheep Roans for Linings, per doz. 5.00 @ 10.50
California Russett Sheep Linings 1.75 @ 5.50
Best Jodot Calf Boot Legs, per pair 5.25
Good French Calf Boot Legs, per pair 4.50 @ 5.00
French Calf Boot Legs, per pair 4.00
Harness Leather, Cal. 30 @ 37 1/2
Fair Bridle Leather, per doz. 48.00 @ 72.00
Skirting Leather, Cal. 34 @ 37 1/2
Welt Leather, do 30.00 @ 50.00
Buff Leather, do 20.00 @ 22
Wax Sided Leather, do 20.00 @ 22
Eastern Wax Leather 28

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well-constructed model is generally first needed, if the invention can well be thus illustrated. It must not exceed 12 inches in length or height. When practicable, a smaller model is even more desirable. Paint or engrave the name of the article, and the name of the inventor, and his address upon it.

Send the model (by express or other reliable conveyance), plainly addressed, to "DEWEY & CO., MINING AND SCIENTIFIC PRESS OFFICE, SAN FRANCISCO." At the same time, send a full description, embodying all the ideas and claims of the inventor respecting the improvement describing the various parts and their operations.

Also send \$15 currency, amount of first fee of the Government. The case will be placed on our regular file, the drawings executed, and the documents made up, and soon sent to the inventor for signing.

As soon as signed and returned to us with the fees then due us, it will be sent straightway to the Patent Office at Washington.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separated ingredients, sufficient to make the experiment (unless they are of a common and well-known character), and also of the manufactured article itself, must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case, the applicant has only to send us an exact description, and what is desirable to claim.

For designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances for design patents two photographs, with the negative, answer well instead of drawings.

We do not require the personal attendance of the inventor, unless the invention is one of great complication. Usually the business can be well done by correspondence.

For filing a caveat, which affords the inventor protection for one year, we only require a rough sketch, and a clear description of the invention.

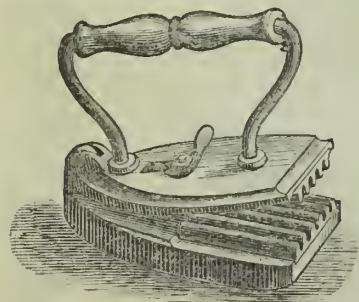
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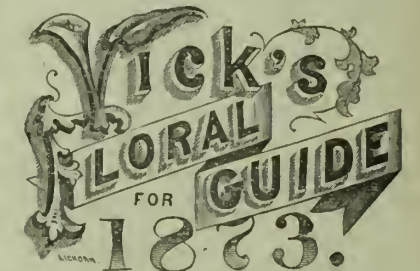
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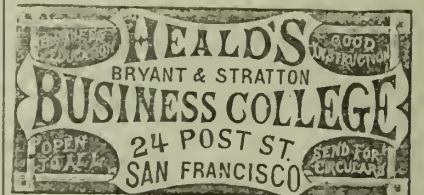
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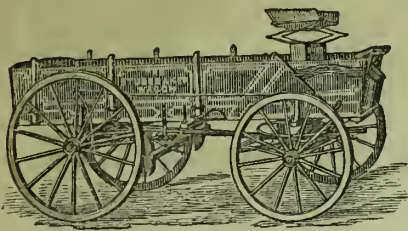
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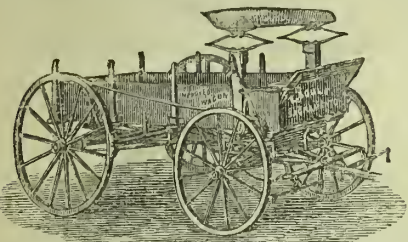
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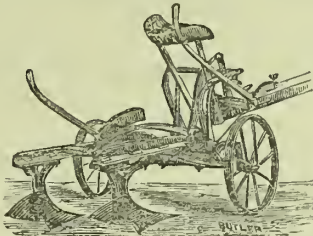
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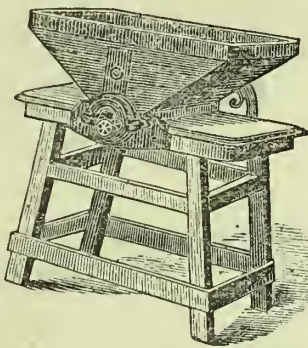
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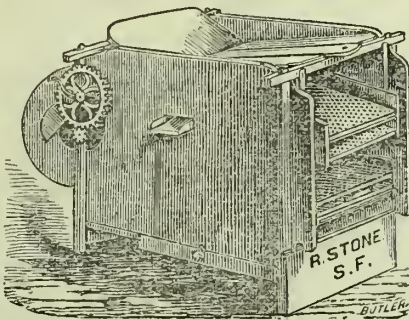
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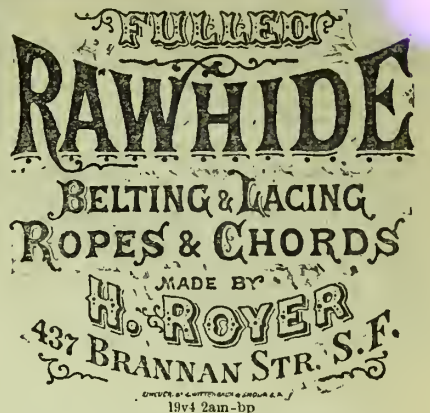
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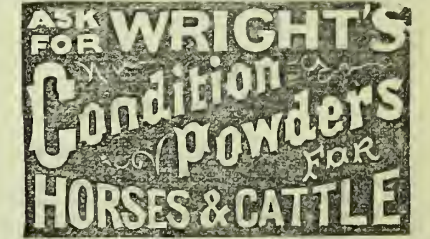
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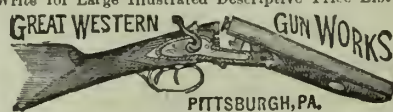
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PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, NOVEMBER 30, 1872.

[Number 22.]

Goat Island.

The accompanying illustration represents Goat Island, the famous bone of contention between the Railroad Company and San Francisco. The view shows only the eastern and lower end of the island, with the military post located there, and was taken from the high southerly point looking northerly. The proper name for the island is Yerba Buena, a Spanish

around the point seen near the right of the picture, embracing some two or three hundred acres of shallow water. The Central Pacific Railroad Co's wharf, whence the overland passengers are ferried across to San Francisco, lies just in range of and beyond the heavy foliage shown on the extreme right.

The island is a prominent land mark in the bay. Its shores were formerly a favorite resort for fishing parties, but since its occupation by the Government, and people are not allowed

California Chestnuts.

An occasional correspondent who has been, as he says, pretty nearly all over California, has had his curiosity excited by a notice in a recent number of the RURAL, to the effect that, Dr. Kellogg reported to the Academy of Natural Sciences, the existence of the real chestnut tree as indigenous to California, some of the trees being 100 to 200 feet high, etc., and wants to know if there is not some mistake about it;

trunk of 50 to 70 feet to the first limbs. They can be found on the road from Ukiah north to Humboldt, in the northern part of Little Lake Valley, on the stage road to Blue Rock Station, near Mr. Bectyl's place. We are thus particular in giving the locality, that our esteemed friend may commence his "pilgrimage" with a certainty of satisfactory results.

The Sierra Nevada chestnut, we are informed by Mr. Pryal of Oakland, is found also growing as a shrub, in Redwood Cañon, 6 miles east



YERBA BUENA OR GOAT ISLAND, IN SAN FRANCISCO BAY.

name meaning "good herb," a plant which grows in abundance upon it and which was supposed by the Mexicans to contain medicinal virtues. The place is now used as a military post, being a Government reservation. It lies between Oakland and San Francisco, to the left of the ferry route between those places about half way between both shores; it is, however, in reality nearer to Oakland, since the shoal water on that side permits the building of wharves very close to it.

The famous "flats," where it was supposed the Railroad Company contemplated building a new city to rival San Francisco, lie just off and

the freedom of the place, this has been discontinued.

IRRIGATION OF VINEYARDS.—In many parts of what used to be the placer mining districts, both high and low, along the valleys and ravines and upon the hillsides, wherever irrigation can impart its life-giving incentive to the newly planted vine, there we see vineyards which, though but the nucleus of what the future will present, have already established by their abundant produce and unequalled perfection of berry and quality of juice, the fact, that the finest wines of California will be those of her more elevated districts, within the range of altitude adapted to the vine.

that if such trees do really exist he is ready to make a pilgrimage to see them.

He is aware, he says, that a nut very much resembling the chestnut in form, and in taste hardly to be distinguished, is found among the Sierras; but the nuts grow upon bushes from 8 to 12 feet high, never assuming the dimensions of trees. But he never before heard of the true chestnut, as belonging to the indigenous flora of California.

We can assure our correspondent that the chestnut trees as mentioned by Dr Kellogg do really exist. That they are from 100 to 200 feet high, 4 to 6 feet in diameter with a clean

of Oakland, near where Brown's mill was located in former days, before the Redwood timber was all used up.

POINT OF TIMBER.—The Farmers' Club of this improving District of Contra Costa Co., were addressed last Saturday evening by Dr. E. S. Carr, of the State University. Being without any regular religious services for the Sabbath, the Dr. was prevailed upon to give them a lecture appropriate to Sabbath morning. We learn that the "Club" is made of some good timber. If the Secretary of the Club will furnish us with the regular reports of proceedings, we will cheerfully publish them.

CORRESPONDENCE.

Oats vs. Wheat.

Written for the Press.

"Who will grow oats enough next year to bring the price down to a dollar a bushel?" (vide RURAL of Nov. 1st). A queer text for a farmer's paper, a farmer's friend. Who will so glut our market with oats next year that they will only bring a dollar a bushel?

So you enter the Crusade against the farmer making any more than enough to keep barely even with the rings and monopolies of the city of San Francisco. You take the credit of calling attention to the extraordinary price of oats, and sally forth with all the ardor and simplicity of Don Quixote in his attack upon the windmills, and cry aloud upon the farmer to rush to the rescue and next year trail the price of oats down to a dollar per bushel. The spirit of your article makes a farmer feel as though he had no real friend in your paper. Why do you wish to see any article a farmer produces, sold another year for any less than it sold for this year?

Is the real meaning of all this hue and cry about a diversity of crops, only that you in San Francisco may purchase in a glutted market and so get it cheap? This humbug of a home market is what is driving every interest to something that has a world's market. An extra thousand sacks of any produce on the San Francisco market bears the price down below actual cost, and there

Every Thing is Lovely

But who ever thought to see the RURAL make up a face at good prices for the farmer? your article aside from the unfriendly spirit manifested, betrays a sarcastic humor that would do Mark Twain credit. "Bring the prices down to a dollar a bushel." Maybe you are like many folks that write of what they know not, mistake up for down and don't know one from another. Who will give us a dollar a bushel next year? Who will give us a dollar a bushel this year? Who ever gave us a dollar a bushel for oats since 1864? What are oats, average lots, worth in San Francisco this month? forty-eight cents per bushel.

This year oats are light and do not average over 30 pounds to the bushel, which at \$1.60 is 48 cents. When oats weigh well up to the State Weight, 35 pounds, their value is fifty-six cents per bushel, which is above the average price since 1864, the dry year. What is wheat worth in San Francisco per bushel to-day? average lots sell at ninety-three cents per bushel—nearly double the price of oats? my experience this year puts oats in Half Moon Bay at not more than 1,500 pounds per acre—while my observations while threshing in the interior valleys this year puts wheat at 1,800 pounds per acre. So much for bringing the price of oats down to a dollar per bushel, and the value of oats per acre being near double that of wheat. Maybe you will say it was a slip and that you meant one dollar per cental; you surely don't ask us to raise oats at 30 cents per bushel to keep your horses fat and ours lean. How do you know that it pays the Eastern farmer to put oats down in New York City for 43 cents per bushel?

Refreshing Advice.

Your advice for all hands to go to work and raise oats is quite refreshing. Oats can only be raised to a profit in a damp, moist atmosphere, as they take a great part of their sustenance from the atmosphere and do not tax the soil so heavily as other grain—all experiments of raising oats in the dry atmosphere of the interior have proved so unprofitable that their production is now almost exclusively confined to the Coast counties—the land of the fog—and a few places around the Bay where the fog creeps in occasionally. Along the Coast, after experimenting time and again with cereals that properly do not belong here, they have settled down to the fact that there is no profit in farming for what is not adapted to the climate. Oats and potatoes are to be the staple articles from the Coast, and there will not be wheat enough raised here to give us flour two months.

As we have decided against wheat, corn, etc., so has the interior after years of experiments decided against oats and potatoes, as a profitable market crop one year with another. Oats being raised in a hilly country along the Coast Range, cost double per acre that wheat does in the valley.

Each portion of our State has its specialty, a peculiarity of which we are

proud and boast of, and which will make her the richest in the world, when properly developed. We can produce nearly everything that is grown, but no one portion will do this as we all know, as the saying goes, "what is one man's food is another's poison," so what is prolific and profitable in one place is starvation and bankruptcy elsewhere.

Simply Absurd.

Why tell the farmers of Tomales, Humboldt, and Half Moon Bay to go into the culture of oranges, lemons, cotton and grape, etc.? As well say to Santa Clara, Napa, San Joaquin and Sacramento shut down on your wheat, corn, cotton, and all your semi-tropical products and go to raising oats, beans, and potatoes; one is as absurd as the other, and the result would be the same. To discover the specialty of each portion of our glorious State is the great secret of California agriculture; the philosopher's stone we are seeking. As experiment alone proved that California was an agricultural State, so will the same place each product just where it belongs, and then we will show such a wealth of variety and productiveness as will astonish the world, as we have already done in the wheat business. G. W. T. C.

San Gregorio, Nov. 18th, 1872.

In the few lines of the RURAL of Nov. 16th, on which the above article is predicated, we gave the price of wheat in New York Oct. 30th, at \$1.75 to \$2 and oats at 41 to 43 cents, or one-fourth the value of wheat; and stated that here, oats were worth the same as wheat; and we offer in proof the daily quotations in all the papers. We said nothing about "48 cents," or "56 cents," or any other number of cents per bushel for oats or wheat in California.

We did ask this—Who will grow oats enough next year to bring the price down to a dollar a bushel? And now we ask another question—If oats are worth now but 48 cents a bushel in San Francisco, as our correspondent asserts, what particular harm can be done the farmer next year—call it up or down—so that he gets \$1 per bushel as we suggested?

We fail to find where where we "advised all hands to go to work and raise oats," as intimated by our correspondent; and his application of the old "saw," of Don Quixote and the windmill, is rather hackneyed; think we have heard it before.

The Fruits of the Willamette Valley.

[Written for the Press.]

Oregon has been distinguished for a number years for raising good apples and pears. The latter for the home market, and the former for shipping. The first fruit trees planted in Oregon were brought from Iowa by Mr. Henderson Luelling in the fall of 1847, and planted by him in the Spring of 1848; that formed the nucleus of the first, and to this day, one of the best orchards in the Willamette Valley. He is the pioneer fruit man of this State; he sold out to his brother, Mr. Seth Luelling in 1854, after making a considerable fortune at the business. The early settlers soon discovered that the climate and soil of this valley were admirably adapted for raising fruit.

Orchards were rapidly planted and apples in particular, extensively cultivated. The discovery of gold in California in 1848-9 caused great demand for fruit, and gave an immense impulse to raising them in Oregon to great advantage to producers and shippers. From 1849 to 1854 apples sold from twenty to twenty-five cents a pound, and from \$20 to \$25 a barrel.

During those years the Willamette Valley supplied the San Francisco market, the California gold mines, and the mines and markets on the coast, yielding the farmers large profits, and the shippers, fortunes. California fruit men soon came in as successful competitors with Oregon in the fruit trade. In a short time the supply exceeded the demand; prices fell rapidly, until apples were a drug in the market. Orchards in Oregon became unprofitable for raising apples for the home market, and still more so for shipping.

Three-fourths of the farmers neglected their orchards and allowed the trees to run down to mere "scrubs," a discredit to themselves and disreputable to the State; whereas, a moderate attention to pruning, and proper cultivation, would have kept the trees in good condition, reflected favorably on the taste and industry of the owners, added to the appearance and value of the farm when a sale was desirable, and would have paid well to have been so cultivated if for nothing else than to feed hogs. For it is

an established fact, that hogs are fond of and will fatten well on sweet apples and pears, in connection with other feed.

While this is the painful position of the great majority of the farmers' orchards to this day in this State, there are quite a number of honorable exceptions.

The beautiful climate, the rich and varied soil, the mildness and evenness of the temperature of Oregon in general, and the Willamette Valley in particular, are all eminently favorable for raising choice fruits to the greatest perfection, and to the best advantage.

The Coast Range of mountains shield the valley from storms and hurricanes; the Cascade range protects it from severe frost and snow; the warm currents of the Pacific Ocean moderate the cold of winter; the Snow range cools the heat of summer; the forests and numerous belts of timber that intersect the valley protect it on every side and from every quarter, and there is not a single disease or insect in the trees or fruit of the cultivated orchards.

This statement of facts will satisfy your readers that there is no part of the Pacific Coast better adapted for raising fruit to advantage than the Willamette Valley, by those who have the experience, adaptation, energy and enterprise for that kind of industry.

Mr. Seth Luelling of Milwaukie, on the banks of the Willamette is one of such men. He has a natural and cultivated taste for raising fruits, and has spent much time and means in cultivating them to great perfection. His Pippins, Winesap, Ontley, Gravenstein, Red Astrachan, and many other sorts of apples are very fine. His orchard of pears of which the Bartlett, Tyson, Flemish Beauty, Fall Butler, Beurre d'Anjou, Winter Nellies and Burre Easter are his favorites, and could not be easily excelled. His peaches, plums and prunes are equally good.

The department that he excels in, and for which he is particularly distinguished, is in raising cherries. His Black Republican and Royal Ann cherries are the finest on this coast, and are not excelled on this continent. The former ripen in June, and the latter in July. The Royal Ann is the best shipping cherry known; it will keep ten days with ordinary care, by steamer or railroad. He ships extensively to San Francisco, and will do so to Chicago and New York as soon as the railroad connections are made. He sows his apple orchard in clover every fourth year, cuts it once a year, and puts the clover to the roots of the trees for manure; by this means he has increased the production of his apple crop four fold. He cultivates the soil in the Spring for his small fruits thoroughly, by spreading and by pulverizing, and a top dressing of manure during the fruiting, which he finds very beneficial.

Mr. Luelling does not neglect the cultivation of strawberries, raspberries, blackberries, gooseberries, currants and grapes, with which he supplies the Portland market. His annual sales of fruit amount to about \$2,000.

Messrs George W. Walling & Co., of the Willamette Nursery, Oswego, are fruit men that Oregon may well be proud of. They have a thousand trees in each of their plum, prune, peach, cherry and pear orchards. They intend planting two thousand more the coming Spring, of plum and prune trees. They have sixty acres under orchards and nursery. They do not give much attention to apples in their orchards. While all the large and small fruits get a fair share of attention, they pre-eminently excel in the raising and cultivation of plums, prunes and pears. Their peaches plums and German prunes are the finest fruits of the kind in the United States. The plums, green or dried, are the greatest luxury known for table use, for jams and pies. The German prune is fifty per cent better than the best ever imported to this coast. There is no limit to the demand in the markets of the Eastern and Western States for these fruits when dried.

The Willamette Valley with its 4,000,000 acres, if planted with fruit trees, would not do more than supply the demand in New York alone. Messrs Walling, in addition to raising the Royal Ann and Black Republican cherries, have lately cultivated a cherry of their own, that they call the Major Francis, that they think is equal, if not superior to the two former.

These and others of our best fruit raisers are anticipating the furnishing of the Oregon and California Railroad, and the Northern Pacific Railroad, that will afford them direct, rapid and cheap means of shipping their choice green and dried fruits to Chicago, St. Louis, Philadelphia, New York and Boston markets, by increasing their orchards and cultivating their choice fruits to the greatest perfection possible.

Mr. A. R. Shipley, near Oswego, in the Willamette Valley, is another of the intelligent, enterprising and successful fruit raisers of this beautiful valley. He is a gentleman of cultivated mind and refined taste, and gives great attention to his orchards and nursery. His small fruits are well and extensively cultivated, for which he gets a ready and profitable market in Portland. For a number of years he has given special attention to the cultivation of grapes. He has sixty of the best American and foreign varieties under successful cultivation; he will shortly plant the balance of a large bote of thirty or forty acres, with such vines as he finds by experience best adapted to the soil and climate.

It is safe to say that in ten years, if not in a shorter period, the cherries, plums and prunes of the Willamette Valley alone, will control the markets of the Pacific and Atlantic States, and in the same space of time the peaches and grapes will be equal to the best raised on this continent and in quantity equal to the wants of

the home market and a large surplus to cure and ship. In the time specified Oregon will be as much distinguished in the Eastern and Western States of the Union for her choice fruits as she is now in the former markets and Europe for her unsurpassed wheat and flour and the cleanest and best of wool.

Mr. Luelling, Messrs. Walling and Shipley have all the modern improvements for drying apples, peaches, plums, prunes and other fruits by artificial heat. The refining influences and pecuniary advantages of the cultivation of fruit are seen in the comfortable dwellings, well trained households, good libraries, beautiful grounds, generous hospitality and worldly prosperity of these gentlemen and their families. These are a few samples of the best fruit men of the Willamette Valley; they will give your readers some idea of the present position and future prospects of the fruit business of the "Garden Valley" of Oregon.

Mr. Holladay's railroad enterprises in this State have given a powerful impulse to all the material interests of Oregon, enhanced the value of land in the Willamette Valley from fifty to a hundred per cent, since 1869, and in more remote parts of the State, from ten to twenty-five per cent. The cultivators of fruit, such as are referred to above, have all participated largely on these enhanced values. The present is only a foretaste of further advances in desirable property, and profits in the cultivation of choice fruits. PACIFIC.

Oregon Correspondence.

[Continued.]

T. L. Davidson

Has a flock of 90 merinos which is pronounced by Mr. A. J. Dufur (who is looked upon as authority here), as good as any in the United States. His original animals were from the Hammond flock, and he has introduced new blood from the importations of Rockwell and J. D. Patterson. He has been breeding fine wool sheep for ten years, and thinks he has improved the quality of the fleece 100 per cent. He sold all his huck lumps to one party at \$20 each, to go east of the Cascades. That man started four years since with a common flock, to breed up Merinos. His neighbor then had a better flock. This year the neighbor had 6,000 sheep, and he 5,000. From his 5,000 he clipped 1,000 lbs more wool than his neighbor did from his 6,000 sheep.

Lel us Put the Story in Figures.

The man who keeps the old stock gets 6,000 fleeces, of four pounds each, at 50 cents per pound, \$12,000; an average wool clip of \$2 each. The man who had been for four years improving a little gets 5,000 fleeces, of five pounds each, at 55 cents per pound, \$13,750; an average of \$2.75 each.

On 6,000 sheep this would make a difference of \$1,500 in wool. We don't think we would be saying too much if we put the difference in the value of the lambs at another \$4,500.

A gain of \$9,000 per year from his improved stock would pay interest on an investment of \$90,000 for fine bucks. We do not think that he has paid over \$1,000 for the animals that have brought about this improvement. Yet it would be strange if his neighbors have not made his extravagant investment a subject of gossip. It may not pay every man to buy the highest priced animals, but it does look as though it paid well to breed to good stock.

A Printer's Banquet

Was given at Salem to the craft of that place by Mr. Eugene Semple, State Printer. He has labored under great difficulties, many prejudices, and at one time under three of his political opponents. The excellent character of his printing has given as good satisfaction to the State as did his supper to the printers. We find that politicians here indulge very freely in the knock-down argument. Mr. Semple is a good fat man and has had a good fat job. We are glad that at least one thing has paid the printer.

Ten Cents a Barrel for Flouring

Seemed to us rather too good to be true, and we took pains to see and learn of the wonderful mill. It is situated at Salem on the water-power from the Santiam on a fall of 22 feet, with a wheel of 150 horse power. They grind 275 barrels of flour every twenty-four hours. Ten cents per barrel pays for all cost of labor and some to spare. Mr. Kinney thinks that 12½ cents will pay interest on mill, insurance, repairs and everything. If any one can grind to better advantage let us hear from him. C.

SEMI-TROPICAL TREES.—If a "New Comer from Missouri" will call upon the undersigned at his nurseries on San Pedro St., in Los Angeles city, he will be furnished gratis with all the information that may be necessary for the successful cultivation of semi-tropical fruit trees. Or if he or any other person is in need of the very best quality of orange, lemon or lime trees, I am prepared to fill all orders. See my advertisement in RURAL PRESS.

THOS. A. GAREY.

CEMENT FOR AQUARIA.—The trouble with red lead and oil is, that it is apt not always to adhere to the glass. Probably the best cement is that which consists of three parts of powdered pipe-clay, one part oxide of iron, and as much linseed varnish as is sufficient to make a stiff paste; or the so-called stone cement—nine parts of pipe-clay, one of litharge, and so much linseed oil as to be of proper consistency. This becomes as hard as iron, and adheres with great tenacity to glass or almost any other substance.—Journal Applied Chemistry.

POULTRY NOTES.

Indigestion in Fowls.

The cock birds seem more frequently to be victims than hens. Our pens have suffered occasionally from this same cause, and we have never been able to combat the disease successfully, except when the case was taken in hand at the first appearance of the trouble. The symptoms as we have observed them, were first, a loss of appetite and moping, speedily followed by a weakness of the legs and a disinclination to stand. The crop is usually rather full, and, in addition to the mass of food, contains a yellowish colored, very offensive watery substance, which will run out of the mouth if the bird is held with head downwards, and the crop pressed by the fingers.

We believe the primary cause of this trouble to be indigestion, to which fowls are very subject, and that if the fowl is taken in hand at the first commencement of the attack, and a dose of castor oil poured down its throat, after purging it well, feeding it on soft and slightly stimulating food, a cure may be effected. If the fowl is neglected too long, it becomes feverish and weak, and a purging would result in death. If the bird has been troubled for any length of time, we would advise feeding with soft stimulating food.

The following is highly recommended as a tonic for debilitated fowls: Cinnamon bark in fine powder, three parts; ginger, ten parts; gentian, one part; anise seed, one part; carbonate of iron, five parts. Mix thoroughly. A teaspoonful to a pint of food is all that should be given. Avoid giving raw meal dough to a sick fowl. We find a great want of knowledge concerning this very complaint.—*National Live Stock Journal*.

POULTRY KEEPING.—Within the last twenty years the improvement in the breeds of poultry has been on the increase. Foreign importations have contributed largely to this, and every importer of superior stock for breeding purposes, deserves the thanks of the country. With this improvement has increased the demand for both poultry and eggs; and small farmers cannot do better than turn their attention in this direction. There is just as good a range for poultry on a farm of twenty or thirty acres as on one of five hundred acres. In the neighborhood of a market, town, or city, or within reach of such by railroad, the growing of poultry and eggs is very profitable and the demand increases with the supply, so that there is no danger of overstocking the market. The time spent in attending to this is so small that it is not missed from other employments, but is rather a recreation.—*Am. Stock Journal*.

EGG-BOUND FOWLS.—A writer in *Moore's Rural* gives the following remedy for this difficulty: "Take a feather and strip it until near the tip, and then dip it in sweet oil, and let it remain until it becomes thoroughly saturated, then pass the feather up the egg-passage till it meets the egg, which you will find will relieve the hen at once, and enable her to proceed with her duties; if she experiences any further difficulty, repeat the operation, getting the feather well filled with oil whenever you make an application. Do not attempt to help nature, in the way of pressure, for in that case the egg may become broken and prove fatal to the hen. After you have made the application, as directed, let Nature take her course, and all will be right."

STOPPING A HEN FROM SETTING.—J. E. Smith, of Durham, New Hampshire, writes: "I was much amused some days since by an old setting hen. Having tried all the usual ways to induce her to leave her nest, I concluded to use 'moral suasion.' I placed two lumps of ice in the nest after taking her off. The 'old critter,' as usual in such cases, soon returned and took a seat, which seemed to disagree with her; after a few hours Mrs. Hen concluded to associate with her fellows."

CATS EATING POULTRY.—When a cat is seen to catch chickens, tie one round her neck and make her wear it for two or three days. Fasten it securely, for she will make incredible efforts to get rid of it. Be firm for that time, and the cat is cured; she will never again desire to touch a bird.

LEGAL HOLIDAYS.—By the Civil Code, section 3,574, it is provided that "Holidays, within the meaning of this Code, are, every Sunday, the 1st day of January, the 22d day of February, the 4th day of July, the 25th of December, every day on which an election is held throughout the State, and every day appointed by the President of the United States or by the Governor of this State, for a public feast, thanksgiving or holiday." Section 3,574 (same page) provides, that, "if the 1st of January, 22d of February, the 4th of July, or the 25th of December falls on Sunday, the Monday following is a holiday."

SCIENTIFIC VALUE OF BEAUTY.—Mr. F. T. Mott, of the British Scientific Association recently read before that body an elaborate paper on the "Scientific Value of Beauty" in relation to the doctrines of selection as held by Mr. Darwin.

MISCELLANEOUS.

The November Atmospheric Wave—An Interesting Discovery.

From time immemorial a succession of great atmospheric waves has been known to commence their flow, usually, in October, upon and over the coasts of England and Western Europe, and to mark the commencement of the winter season in that latitude. The phenomena connected therewith, have been a speculative theme with scientists for the last century or more. Sir John Herschel and others have supposed it was peculiar, and confined to England and Western Europe, which it reaches from the South Atlantic, over which it rolls in long, continued undulations, from October to January, constituting an important element in the phenomenal character of the European winter.

This wave seemed to have reached its culminating violence, this season, in the great gale which burst upon the European coast last week, the disastrous results of which, in the destruction of shipping and human lives, has been reaching us daily by telegraph, during the past week.

A Similar Wave Discovered on the Pacific Coast.

The facts connected with this meteorological phenomenon have been closely studied during the past and the present season, under the peculiarly favorable circumstances presented by the various signal offices of this country and Europe, and the interesting and important fact has recently been announced by the Signal Bureau at Washington that on the 12th of November, almost simultaneous with the advent of the great gale in Europe, a similar atmospheric wave began to break over the shores of Oregon and British Columbia, as shown by the weather telegrams. By the evening of the 13th ult. it had spread over nearly all the Pacific States and Territories, Utah and Nevada. At midnight it was pouring through the passes of the Rocky Mountains. On Thursday, the 14th, it descended upon Colorado, Nebraska and the Indian Territories. On Friday morning it extended in unbroken magnitude from Oregon and Washington Territory eastward through the Great Trough or depression in the Rocky Mountains, the Backbone in Idaho and Montana, and stretched thence to the lower Missouri and Mississippi valleys, and over the western shores of the Mexican Gulf.

This discovery will enable meteorologists to anticipate by many days the approach of winter as it advances from the Pacific Coast eastward, in the great current of westerly winds. It serves to clear up the old mystery of the American winter storms, showing that they originated in the Rocky Mountains, upon whose cold and lofty summits in Utah, Colorado, and Southern Wyoming, the vapors of this wave coming from the warm Pacific are now seen to be condensed in overwhelming snows on the forty-first parallel.

As this vast aerial wave is probably like the English wave, continued in successive undulations for two or three months, it may assist in explaining the comparatively high temperature and light precipitation in the winter along Puget Sound and eastward.

WOVEN FABRICS FROM RABBITS' HAIR.—The *Austrian Exhibition Gazette* calls attention to a new and important industry, viz., the incorporation of rabbits' hair with wool and cotton in weaving textile fabrics. The shorter hairs which are incapable of being woven, are readily purchased by felt hat manufacturers at \$3 a pound. When properly prepared, the hair affords a good strong yarn, which is said to be in no way inferior to wool. If all that the Austrian journal says on the subject be true, the raising of rabbits will soon become an important business. No animal is better adapted to raising on a large scale than the rabbit; they multiply almost as rapidly as white mice, and are not confined to any particular climate. It is rather remarkable that this use of the hair has not been thought of before, particularly when we consider how many hundred million rabbits are annually destroyed. The meat of the rabbit is agreeable and nourishing, and the skins have long been prized. The *Austrian Gazette* anticipates that an important industry will grow out of the successful introduction of rabbit hair weaving in all countries.

LUMINOUS FUNGI.—The Rev. M. J. Berkley describes in the *Gardener's Chronicle*, a very remarkable instance of luminosity in fungi. It occurred in the mycelium of an unknown species growing on a trunk of spruce or larch, and vividly illuminating everything in contact with it. It gave almost light enough to read the time on the face of a watch, and continued for three days.

EFFECT OF THE PERFUME OF FLOWERS.—The presence of the perfume of lavender in the air increases the power of absorption of heat sixty times, and anise-seed 371 times; hence the perfume arising from a bed of flowers increases the temperature of the air around them.

NARROW GAUGE IN RUSSIA.—The Fairlie narrow-gauge system in Russia has met with complete success. The Emperor has forwarded to the inventor a bronze medal, in recognition of the value of his engines, which have been placed on the Livny Railroad.

Metal Paper Hangings.

Paper hangings for walls are known to everybody. It is now proposed to use hangings made of metal, and an account of this new invention, which comes to us from Paris, has been read before the Society of Arts. The metal employed is tinfoil, in sheets about 16 feet long, and from 30 to 40 inches wide. The sheets are painted and dried at a high temperature, and are then decorated with many different patterns, such as foliage, flowers, geometrical figures, imitation of wood, or landscapes. When decorated the sheets are varnished, and again dried, and are then ready for sale. Tinfoil is in itself naturally tough, and the coats laid upon it in preparing it for the market increase the toughness. The hanging of these metallic sheets is similar to paper hanging, except that the wall is varnished with a weak kind of varnish, and the sheet applied thereto. Thus, in this way, a room or a house may be newly painted, without any smell of paint to annoy or harm the inmates. Moreover, tinfoil keeps out damp, and as the varnish is a damp-resister, the protection to the room is two-fold.

Experience has shown also that cornices, moldings and irregular surfaces may be covered with the tinfoil as readily as the flat surface; hence, there is no part of a dwelling house or public building which may not be decorated with these new sheets; and, as regards style and finish, all who saw the specimens exhibited at the reading of the paper were made aware that the highest artistic effects could be achieved at pleasure. The decoration of small tin plates for ornamental purposes has, we hear, been introduced into Cornwall—the county of tin. In this case, the color and pattern are printed on the plates by means of lithographic stones and rollers; but, to insure excellence and permanence, the plates must be heated. Difficulty was first experienced in keeping the plates at the required temperature, the upper part of the oven being always hotter than the lower; but it was overcome by fitting into the oven a vertical roundabout, which carried the plates from top to bottom of the oven during the whole process of heating. We think there are many purposes to which the plates could be applied beyond that of mere ornament.—*Chambers' Journal*.

The Diamond as a Cutting Instrument.

It is noticeable that the diamond as a cutting instrument makes but little headway outside of America. The diamond drill is hardly a subject of experiment in Europe. But here we have proved its value, while we are talking about its results being "still doubtful."

One of the most promising applications of this novel cutting instrument is its introduction for the sawing of stone. A machine for this purpose has been constructed as follows: A broad blade of steel has, at certain intervals, pieces of soft steel placed in its edge, and projecting say three-eighths of an inch. These contain black diamonds, usually three to each holder. As the saw is drawn over the surface of the stone the diamonds make a deep cut, but in the return stroke they are lifted clear of the stone. By this method the cuttings are all drawn gradually to one end, instead of being shoved back and fourth in the cut. The machine does beautiful work. It leaves the surfaces free from saw marks and ready for the polishing stone. The edges are unbroken, and the stone if for building purposes, is ready to set without further preparation. Specimens of its work in all kinds of stone are exhibited, with the time of sawing marked on them. They are indeed admirable pieces of work.

This new use of the diamond is one that appears to have a bright future before it, and its successful introduction in America promises to afford us facilities that may be of the greatest service in encouraging the increased employment of stone as a building material.

CUTTING UP WHALES BY STEAM.—The whaling bark *Java*, of New Bedford, is provided with an upright five horse power engine, to be used in cutting in whales and discharging cargo, hoisting topsails, if required, etc. This must prove a great saving of time and labor, as it usually requires 15 or 16 men to cut in a whale, while, with the help of the engine, six men can easily attend to it. The engine is stationed in the fore-castle, occupying a space ten feet by four feet. It will be the first ever carried to sea in a whaler for these purposes. The idea originated with the first officer of the *Java*, Mr. E. T. Fish, of Falmouth, Mass.

MACHINERY FOR CORN-CUTTING.—It is remarkable that, with all the inventions of an agricultural nature, there should be nothing in relation to cutting corn. The millions of acres in the United States have still to be cut down by the old corn-knife made out of a piece of old scythe, just as it was cut a hundred years ago; and it all has to be gathered and shocked by hand in the same manner it was in the olden time. Yet it seems as if something might easily be devised. Certainly a machine can be readily adapted to cutting it; but the shocking by machinery could not perhaps be as well done. Still, American genius ought to be equal to the accomplishment of such a machine to perfection; and, only that it has not yet been done, we might hazard a guess that at some future time some one will succeed in doing so.—*Am. Artisan*.

Agassiz Institute of Sacramento, Cal.

We have been favored by Dr. T. M. Logan, President of the above Institute, with its organic proceedings, Constitution and By-Laws, names of the officers and members, and with the following

Circular:

The Institute issues this Circular with the hope of gaining the attention and assistance of every intelligent person on the Pacific Coast.

Individuals have obtained much information concerning the States and Territories of this Coast; but this knowledge exists in a perishable form, and is beyond the reach of many who are capable of putting it to profitable uses.

The Institute proposes to gather, preserve, increase, and disseminate this knowledge.

This will be a labor of love, without any hope or desire of any remunerative result other than that which will accrue to all alike.

We submit the following general statement of the wants of the Museum:

First—We desire specimens of every object that may assist the mind in forming an estimate of the nature of the Pacific Coast.

To understand the country we need specimens of soil, sand, gravel, boulders, rocks, minerals, and fossil remains, including that which is common and fairly representative of a particular locality, as well as that which is unusual and peculiar.

The sand, soil and gravel should be put in separate bottles.

Accompanying the specimens should be an account of the locality from whence taken, a description of the locality and surroundings—whether valley, plain, gorge, mountain, hills, rivers, or lakes.

If the specimens are from stratified rocks, then the observer should state not only the locality, but the character and direction of the dip, and the altitude or depth of the spot from which taken.

We also desire specimens of plants, grasses, flowers, shrubs, wood, and petrifications, with an account of the nature of the soil and surroundings in which they may be found.

Plants, flowers and grasses may be pressed and dried or placed in alcohol. The season in which they are grown and gathered should also be stated.

Also fish, serpents, insects, birds, animals, etc., with or without observations upon their habits. These should be put in alcohol. A statement of the precise locality from which the object has been obtained is a matter of great importance.

All specimens of articles manufactured upon the Pacific Coast, with the name of maker and date of manufacture.

NOTE.—Each article must have, firmly attached, a label containing the name of the locality, the name and address of the finder or sender, and also a statement that the article is either common, or fairly representative, or peculiar and exceptional. All articles without labels will be rejected.

Second—We wish to place upon record all facts whatever relating to the history and general character of the Pacific Coast; everything that will give an idea of the country and people and their development.

We will be glad to receive accurate descriptions of soils, general and exceptional formations, mountains, valleys, rivers and lakes, springs, climate, temperature storms, water-spouts, cloud-bursts, the fall of snow and rain, etc., etc.

Competent persons, desiring to keep meteorological data, will be furnished with instructions, if desired. We desire exact accounts of fisheries, mines, vineyards, orchards, etc., including the results of various practical experiments; also accounts of the industries of each section.

Miners will do the cause of science a service by giving us accurate accounts of their mines, depths, dip and direction of strata, ventilation, etc., etc.

We also ask for some account of the indications of glaciers, volcanoes and earthquakes.

We will receive and place upon record any well-authenticated statement bearing upon the history of California, the settlement and improvement of localities, the formation of institutes of learning, agricultural, medical, or educational societies.

Each paper must contain the name of the author, and cite clearly the authority upon which statements may be founded.

Having a limited income, which must be expended upon the preservation of specimens and the dissemination of the knowledge obtained, we must be relieved of all expense incurred in the preparation and transfer of articles. Wells, Fargo & Co. will pass over R. R. lines all articles for the Museum of the Institute free of cost, and over all stage lines at the actual cost of transportation.

All articles sent over stage lines must, therefore, be prepaid.

As the railroads and express company have agreed to pass all articles free, the stage lines may be induced to imitate their example.

Send all articles, carefully packed and distinctly marked: THE AGASSIZ INSTITUTE, SACRAMENTO, CAL.

All communications must be addressed: REV. J. H. C. BONTE, Cor. Sec'y, Sacramento, Cal.

A FRENCHMAN has discovered that the perfume of a magnificent species of lily, botanically called *Lilium Auratum*, is so obnoxious to flies that they will not remain in a room where one of the flowers is placed. What an infinite improvement on fly-paper.

FARMERS IN COUNCIL.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

Meeting of November 23d, President Casey presiding.

Mr. Neuman proposed to address the club on "Silk and Cotton Culture," and on "What he knows about the State Farmers' Union." On motion he was requested to participate in the proceedings of next Saturday.

By request of Mr. Ware the Secretary read the address of the California Farmers' Union which was placed on file to come up as the regular order for next Saturday.

Mr. Holloway rose to protest against the wine and brandy idea in the address; he would not give it an implied sanction.

The Committee appointed to confer with the proprietors of the New City Market, reported that the proprietors of the market would furnish the members of the Club what stalls they needed free, or for a mere nominal rent, and would be happy to accommodate the Club.

Mr. O. Cottle had a horse affected with scurvy or some other cutaneous disease, which the horse doctors have failed to cure. He desired to know some remedy.

Mr. Haskill desired to know if lime after being used to purify gas, was good for manure. Mr. Herring thought not as it was used to kill vegetation on walks.

Irrigating Our Valley.

Mr. J. E. Brown presented his plans for irrigating the lands of this valley. He would have built two or three basins or reservoirs on each side of the valley to catch the surplus water of the winter, to be distributed during the summer. He thinks that two basins could be built for \$1,000,000 which would be enough at first. The amount could easily be raised by county bonds and taxation. With the adoption of a proper system of irrigation some of us might live to see this valley contain a million of inhabitants.

He hopes that after a time a Committee will be appointed to mature plans and bring this important subject properly before the public.

The Best Machinery for Putting in Grain.

Mr. Cottle thought there would be as many opinions as members present, for it also included the question of the depth to cultivate. He believed in the present manner of using the gang plow; different soils might require different cultivation; but where he had farmed the gang plow cultivated deep enough. He believes in a seed planter that will leave the seed regularly; one will soon save seed enough to pay for itself. From actual experiments he had found shallow plowing the best on his lands.

Mr. Chipman puts in with a Chicago seed sower and cultivator. It scatters the seed evenly and covers it. He harrows once cross-ways afterwards. He can put in fifteen acres per day. He plowed a piece very deep and the crop was not so good on it that year, but it was better the following seasons, and in the end he thinks it paid for the loss on the first crop.

Mr. Cadwell thinks deep plowing good if done early, so that the rains will afterwards have an opportunity to settle the soil, but an injury if done after all the heavy rains of the season.

Mr. Haskill thinks that, with the usual amount of rain, plowing two inches deep will answer every purpose full as well as deeper. He has tried it thoroughly. He don't believe the soil is worn out, but thinks our dry seasons have the effect of renewing the land.

Mr. Settle says nearly every one has a pet, and he too has one. His is a pet machine for putting in grain. It is a gang plow that sows and harrows at the same time. The grain is always planted in moist ground, just behind the plow, so it is sure to come up regularly; less seed answers the purpose and the work can be done as cheaply.

Gang-plow and Cultivator.

Mr. Dubois considers the plow the main tool. The only kind of a cultivator that is any account is one made on the same principle as a gang-plow. The old V shaped cultivator is a nuisance, it is first dragged along, one side pointing straight back, then the other, and all the tough weeds have a peculiar way of slipping by unhurt.

Mr. Settle rose to a point of order. On being asked to state it, he said the subject for discussion was the best, not the worst, kind of tool. Mr. Dubois said then, to keep to the subject, it was impossible to tell what kind of a plow is the best without first having a knowledge of the soil to be plowed. For most of the land in this valley the gang-plow is the best, and have it run shallow; but if the soil is soft and mellow, a cultivator made in the style of a gang-plow will do equally well and be much cheaper.

Mr. Holloway don't expect to find any infallible machine. They are all good in their proper places. He rather likes to see such a diversity of opinions; it shows that the farmers are thinking and that each judges for himself. Gang-plows are good but who would think of using one on a side-hill. Then again the machine described is too expensive for small farmers. The difference of opinion is based on

facts connected with different soils and different localities. He does not believe in encouraging big and costly machinery; it encourages farming on a big scale; what we want is small and cheap machinery to encourage farming on a small scale.

Big farming is delusive; it keeps out a thrifty laboring class that make the wealth and power of a country; it operates like the big cotton plantations of the South, builds up an aristocracy and keeps the laboring classes down; it prevents schools and social intercourse. Big machinery won't do unless we can get several small farmers to unite and buy and use in partnership.

Nearly all concur in recommending the use of the roller.

Mr. Holloway thinks harrowing better than rolling.

Mr. Cottle says the moisture is supplied by capillary attraction from below, and rolling is favorable; if left too loose on top the particles are too far apart to act freely. Mr. Haskill never saw land rolled that it did not help it, but it is better not to be too wet. It was suggested that harrowing would improve a piece of grain that had come up to thick, but not when thin.

Oakland Farming, Horticultural and Industrial Club.

At the regular meeting, Friday evening, Nov. 23d, Professor Carr presided.

Quite a number of ladies were present and the meeting proved social and interesting. Mr. Harlow of the Oakland daily News was present and rendered a fair report from which we extract freely.

The address of the California Farmers' Union was received and a committee consisting of Messrs. Webster, Bagge and Dwinelle appointed to draw up resolutions for discussion concerning the same.

A communication from Christian M. Peterson was read relating to some specimens of vegetables which had been sent into the Club. Two specimens of Silician sugar beet were examined. They were both from the same kind of seed, but one is white and grew in adobe soil, while the other is yellow and grew in different soil. The difference in the color was thought to be on account of the quality of the soil.

A letter from Mayor Spaulding to Mr. Pryal, relative to shade trees for public streets, was read.

Mrs. Carr suggested that if the rules of the Club permit, the subject of shade trees be taken up and discussed.

Prof. Carr presented a large piece of amber of very fine color, which had been used as a button by some Japanese officer. The piece showed a well defined insect and numerous fragments inside. Dr. Carr explained the nature, uses, etc., of amber.

The following, offered by Mr. Dewey, was adopted:

Resolved, That when not concluded at an earlier hour, the meetings of this Club shall hereafter be closed promptly at 9 1/2 o'clock.

Mr. Pryal here read a paper on forest tree culture which we intend to report at another time.

Mr. Bagge said, of 180 blue gum trees he had transplanted, but 28 lived. The squirrels (his neighbors' squirrels) had killed them.

Mr. Peterson agreed with Mr. Pryal that the safest way was to set out the trees as young as possible. One year ago last spring, he set out a large number of eucalyptus trees and had to prop them up, they grew so fast. He had also suffered from his neighbors' squirrels.

Mrs. Carr requested that Dr. Gibbons give some illustration on the blackboard, of the principle of trimming trees.

Dr. Gibbons said the commencement of a tree consists in the development of the bud. The germ, exposed to favorable condition, the starch portion gradually swells; other changes take place by the chemical action of the atmosphere, moisture and heat. In the development of the root, the first thing seen is side cellulose descending from the radical of the germ into the earth. Roots require room to spread in. The tree grown in a pot is like an animal that has not sufficient lime in its bones. The tree has subsisted mainly upon the water poured into the pot, and lacks the mineral elements necessary to its healthy growth. The fibres of the root spread out after nourishment required by the tree. Where the roots are cramped in a pot, they cannot find nourishment.

The Doctor here entered into a clear and highly interesting explanation of his theory of the proper culture of shade trees, showing the folly which some amateurs practice, of cutting the entire top of a tree off and leaving nothing but the naked stump, to save it, where the roots are not sufficiently developed to support and keep it in place—a practice which illustrates the principle of cutting off a man's head to make his legs grow stronger. Taking the eucalyptus for an example, the amateur chops off the top and then boxes up the remainder of the stump. The tree shoots up with an unnatural growth, leaving the lower portion bare and feeble. No light nor sunshine, nor air can get to it in this condition. The Doctor showed that the proper method to adopt was to increase the surface of the lungs of the tree, by trimming the ends of the branches. By cutting off the terminal bud of a branch, the sap is arrested and new branches form upon the one thus trimmed. Thus more foliage is created, the surface of the lungs of the tree increased, its

absorption of sustenance from the atmosphere enlarged, and its roots permitted to grow in length and strength.

The Doctor illustrated the germination of seeds, the form and growth of roots, the different shapes assumed by trees from good and bad trimming, by drawings on the blackboard, which aided much in rendering his ideas quite plain to others.

Mr. Pryal moved a vote of thanks to Dr. Gibbons, but the Doctor objected on the ground that such compliments were getting too common, and that such services should be performed as simple matters of duty requiring no acknowledgement.

Wm. H. Wood offered a resolution that a committee of five be appointed to report at the next meeting, the best kind of shade and fruit trees, for street and road side planting in this locality, the variety to be numbered in the order of their excellence. Adopted.

The chair appointed Messrs. W. H. Wood, A. D. Pryal, A. F. Montandon, John Kelsey, Christian Peterson, and upon the suggestion of members, Mrs. Carr also. Adjourned.

Next meeting, Friday evening, December 6th.

Napa County Farmers' Club.

The Club assembled at the Court House, as usual, on Saturday, Nov. 23d, but there was no general discussion. Some business was transacted of a private nature, and it was decided that the next meeting should not be held until the second Saturday in December; and thenceforth regularly on the second Saturday in each month. This change is made in the hope that a better attendance may be secured. Week after week a few earnest and faithful men have met to discuss questions that pertain to their business, and have derived much practical benefit; but the great body of farmers seem to be afraid, or indifferent. Whatever be the reason, they do not take hold, and hence the strength and influence of the Club are not what they should be. We are persuaded that if the farmers of this community realized the importance of a movement for self-protection and self-cultivation, and were satisfied as to its feasibility, this Club would be ten times as large as it is.

The Constitution and By-laws of the Club are now ready for distribution. The same little book contains the Constitution of the State organization, the Farmers' Union, and a great deal more matter that is useful to farmers. Call at this office and get one; it will cost you nothing.—Napa Register.

California Farmers' Union—Minority Report.

Mr. T. H. Hyatt, one of the committee appointed to frame an address to the farmers of the State, not agreeing in all points with a majority of the committee, has made a minority report, from which we clip the following:

And yet we now see combinations or "Rings," as they are significantly called, formed to "corner" and cripple the farming interests of our State by merchants and bankers who wish no doubt to be considered good members of society. To-day, when but for these combinations, to put up the price of freights and to put down the price of wheat, the farmer should, according to the Liverpool prices, receive \$2.50 per cental for his wheat, he only realizes \$1.50, or less than that, when his exorbitant inland freights and dock and ware-house charges and commissions, etc., are paid. Farmers do not need, merchants ought not to need to be told that this is not a living price, that farmers cannot and will not continue to raise grain and sell it at less than cost.

Again, farmers who send their fruits and vegetables and other products to the San Francisco market, do not get their share of the proceeds; they have been willing that the commission merchants and the middlemen and the common carrier should have a fair share for their labor and skill in transporting and selling; but they are not willing to give to these dealers and carriers the lion's share, leaving themselves not enough to pay them the cost of production and sending it to market.

And then, again, farmers, like other mortals, sometimes require to borrow money to enable them to put in their crops, to improve their farms, to move their crops to a market or to purchase stock, and why should they be required to pay from one to one and a half and two per cent. per month for the use of the money they borrow on the security of their crops or farms, while the speculator in the city who borrows money from the bank, frequently on squally city property, to buy and speculate and "corner" the farmer with, can get all he wants at the rate of 7 to 10 per cent. per annum?

The Remedy—Farmers' Banks.

The question then arises, "What is the remedy?" How are the farmers to find relief from these oppressive burdens, which must be relieved and remedied, or the farming interests of California will have to be abandoned? And this is a question that this Association, the Farmers' Union, has been organized to aid in solving. But what can we do, what can one Farmers' Club or one hundred do, without co-operation and concert of action? We have got to work together as one man to accomplish anything. We must either establish a bank, or arrange with one already established in our commercial emporium, to furnish to farmers funds for their legitimate business operations, on as

easy terms as are extended to other classes and interests, and where farmers may safely make their deposits, and then we can break up these grain rings and ship monopolies, and hold on to our crops until a fair, just price shall be paid for them. And farmers need a Produce Exchange in our chief cities, where they can establish living prices, and control their own products, so that the consumer shall be enabled to purchase these products at a greatly reduced price, while the producer will get a fair compensation for his toil and expenditures. And then, too, the farmers may have a Stock Exchange—cattle yards of their own, where their animals may be kept and sold, or exchanged, and at rates that will not, as now, nearly consume for expenses the entire value of such stock as it may be necessary to keep on hand for any great length of time. And farmers need agents or representatives in Liverpool with authority and credit to contract for the sale of our wheat there, and to charter ships, if need be; agents of integrity, who can neither be bought nor bribed, and who will not telegraph false reports of the market to swindle the grain raiser, as has been done by the agent of the wheat ring this year; and agents in New York and other Eastern cities to charter ships, and agents in China and Japan to market our grain in those countries; and then we can sell our products and transport them to foreign markets at less than half what it now costs the farmer to do it; and it is only by thus doing, we conceive, that farmers can keep themselves out of the destructive anaconda grasp of the grain rings that are now crushing out the vitality of the farmer's existence, paralyzing all his business energies.

And how is all this to be done? asks the reader. Let every farmer who reads this go to his neighbors, get them all to join in a local Farmers' Club or League, unite with the State Union Association just organized, contribute of your means or credit to the building or renting of warehouses, convenient to the nearest shipping point, where you can store your grain until it can be sold at a fair price; contribute of your means to establish a bank, where you can get advances, if need be, to enable you to anticipate the sale of your products, and raise funds to establish and support the agencies that will be needed to do your business for you. With such an agency in England, and with the credit of your secured crops, or of your farms, you may borrow capital or get advances in Europe at one-third or one-quarter the rates of interest you now have to pay, besides saving the necessity of selling your grain at forced sale, at whatever price the speculator may choose to pay. You will then be gainers, will save an hundred fold of your receipts that now go to the monopolist, the money lender and the speculator. You can get your grain carried to Liverpool or to China for \$10 to \$12 per ton, instead of paying as now \$25 to \$30; or can sell your wheat in San Francisco for \$2.50 to \$3 per cental, instead of \$1.50 as now. Co-operation and concentration of effort can do all this. These agencies and institutions that we suggest may soon be made self-sustaining and require no outlay of capital to keep them up. And shall not the trial be made? Mr. Hyatt also recommends the construction of narrow-gauge railroads to compete with those already in existence.

Farms Upon the Tule Lands.

For a long time the tule lands of our State attracted no attention, and even after they were thrown upon the market for a dollar per acre they remained untaken. Within the past few years they have attracted the attention of practical farmers, and when reclaimed from overflow by proper dykes it has been demonstrated that they are the most productive lands of the State—certain of crops, and not affected by either dry or wet seasons. Lands thus reclaimed and brought under cultivation are estimated at from \$50 to \$100 per acre. A large amount of these lands upon the San Joaquin have been taken by a colony from Kentucky, and information reaches us that fine improvements in the shape of fences, barns and houses are now going on. The stories told of the productiveness of these lands are truly marvelous, and crops may be produced in continuous rotation. The land is too rich for wheat, as it is liable to rust, but is well adapted to oats, barley and rye, all kinds of grasses and clover. Such roots as the sugar beet, rutabaga, carrots, etc., yield amazing crops. The land is especially calculated for dairies, hogs, etc., and for grazing and stock raising is said to be the best in the world. The soil is a pure alluvial of great depth, and can never be exhausted by cultivation. It is, in fact, pure garden land. We are glad to know that it is being divided into small farms, and that but a small portion is held by speculators. Lands fully reclaimed and ready for burning off the tule, surrounded by substantial dykes, can be purchased at from twenty to thirty dollars per acre, according to location. These lands are well adapted for all kinds of fruits. From all the information we can acquire the tule lands are the most desirable in the State for small farms. There is a vast area of these lands, and lying as they do in the very heart of the State and upon the navigable bays and rivers, the produce is marketable at the very lowest cost of transportation. An impression has existed that residence upon these low lands was unhealthy and disagreeable. This is found not to be the case. Chronicle.

Almonds, Nuts, Prunes and Raisins.

A sort of inquietude seems to rest upon the mind of a writer in this week's *RURAL* in regard to our views often expressed, of the importance of a diversity of crops and a home market. He says, "this humbug of a home market is what is driving every interest to something that has a world's market."

We may have been rather persistent in urging upon farmers the production of a diversity of crops as a means of lessening the loss too often incident to the over-production of a single product; and we may have urged upon capitalists the importance of fostering manufactures and the erection of factories in which large numbers of non-agricultural producers and their families might find employment, and thus produce a *home market*—that "humbug" of our correspondent—for our surplus of agricultural products.

But if we have done this, it was because our convictions were honest, and we still think we are right, as well as in urging a diversity of crops and the growing of more of those fruits of which it can be said that they have "a world's market." We believe it would have been better for the farmers of California had half the labor that has been spent upon "the over production of wheat since 1860, been applied to the production of almonds, nuts, prunes and raisins, for all of which there is a "world's market" outside our own State, that the land and the owners to-day would have been the richer for it.

Cost of Sacks.

Take any one of the fruits named—for they are all classed as fruits—and how many sacks would be required for a hundred dollars worth as compared with wheat? One sack will hold a hundred pounds of wheat, worth we will say \$2; whilst a hundred-pound sack of almonds is worth \$20; so that for the same value of product, almonds would require but about one-tenth the number of sacks.

Wheat may yield an average of forty bushels to the acre; worth—suppose it cost nothing to raise it—but \$80; whilst an acre of bearing almond trees, will yield \$500 worth annually, and no necessity of following the land or giving it rest as with wheat. It cost ten times as much to transport a hundred dollars worth of wheat to New York or Liverpool as it does a hundred dollars worth of almonds; and the same facts are as applicable to other fruits of the same value per pound and having what is termed "a world's market."

Storage Room.

It requires but little more than a tenth of the storage room for almonds, nuts or raisins that it does for the same value of wheat; and none of them are any more perishable or liable to damage than wheat. The almond crop requires no seeding from year to year as wheat does, and there is no waiting for rains to enable us to plow; no hurry in harvesting, no threshing machine with a great gang of men and horses to eat out the farmer's sustenance and profits, and only one tenth the weight of product to be delivered at railroad or other shipping place. We still recommend the culture of fruits that have "a world's market."

About Raising Oats.

EDS. PRESS:—What I know about raising oats is this: Last year I had sent to me from the Agricultural Seed Department three different kinds of oats. I prepared my ground in good order and sowed them as follows: 2 pounds of White Schohanan, on one-eighth of an acre of ground; 2 pounds of Excelsior oats, on one-eighth of an acre, and one pound of the Norway oats on one-tenth of an acre. The land was all the same quality with the exception that the land where the White Schohanan was sown was a little the dampest. The ground was plowed twice, harrowed well, and sown, harrowed and rolled. It was heavy valley soil, and the result was as follows: The White Schohanan, 402 pounds, threshed on the field with a flail; considerable was wasted by the blackbirds before harvesting; the Excelsior 140 pounds, also damaged by the birds; the Norway 108 pounds, also badly threshed by the birds. I think that one-eighth of the whole crop was destroyed by the birds. I intend to sow all of the oats this year and give them another trial; I will let you know how they yield next fall. That's all I know about raising oats. SUBSCRIBER.

Campo, San Diego Co.

We suggest to our correspondent that if it be possible, he conduct his experiments next year in such a way that no loss accrue from birds, otherwise it will be quite impossible for him to arrive at correct results. We admire his *grit*, however, as most men would have lost all faith

in oat raising with such an experience. We would also recommend to others like experiments with a view of testing the merits of different varieties of grains.

Bleaching Almonds.

EDS. PRESS:—An article on this subject appeared in your paper which conveyed erroneous directions.

He who subjects his almonds to sulphur smoke for two or three hours will both ruin their appearance and flavor.

How It Is Done.

Take a box or cask, cut a hole in the bottom large enough to admit the smoke from a stove of any size you have; insert the pipe, put a false bottom full of cracks or holes about six inches above the real bottom of the cask or box. Now put in a layer of almonds which are dried for market, one foot deep; take a small broom and sprinkle with water until they are quite wet, then another layer and sprinkle, until your box is nearly full. Cover the whole with a wet cloth and you are ready for the bleaching process.

This is accomplished in ten or fifteen minutes and requires close and constant attention. Put a quantity of burning coals into the stove, let it become quite warm so that steam appears at the top of the almonds. Now put into the stove a teaspoonful of sulphur at a time, every three minutes, so as to keep up the blue blaze. The smoke will go into the space between the two bottoms, and rise up among the almonds and bleach them.

Every few minutes remove the cover and examine the condition of the almonds. When they assume a bright straw color pour them out at once, and let them dry one or two days and they are ready for market.

If the almonds are to much heated they will be spoiled; if they have the smoke of sulphur two or three minutes too long they assume a dark orange color and will taste of it. Yours truly, W. W. BRIER.

Alvarado, Nov. 25th, 1872.

We are pleased to see our readers take an interest in each other's correspondence, and ready to correct any errors of theirs or ours, when it is evidently for the general good. Such we conceive to be the motive that governs, in the preceding article. ED. PRESS.

GLEN FLORA STOCK BREEDERS' ASSOCIATION. We have received the last annual catalogue of stock, the property of the Glen Flora Stock Breeding Association of Waukegan, Ill., copies of which can be had by addressing us. The association has a large herd of cattle, probably the largest and best in America, and took at the recent annual fairs \$2,100 in premiums.

In addition to fine cattle, Cotswold sheep, Berkshire swine and pure bred poultry are bred at the farm by the association and all are for sale. Parties desiring to communicate, can address Glen Flora Stock Raising Association or C. C. Parks, Pres., Waukegan, Illinois.

California Fresh Fruit Shipped to Ireland.

During the past two seasons nothing could have been more annoying and tantalizing to men who have good fruit gardens in this country than the falling off in the produce. In fact the seasons seem now to be altogether against the growing of fruit in this climate. We all can well remember the splendid fruit grown in and sent to market from the orchards of Down, Armagh, Fermanagh and other counties; but now, when one goes into the fruit shops and markets, the home fruit is a miserable specimen compared with what it was formerly, with the exception of what is grown under glass, such as grapes, peaches, etc. Were it not for the supply of fruit received from France and America this most useful dessert would hardly be known at the tables of the middle or respectable classes. It is well to know, however, that fruit of the finest and most delicious quality can be had from more congenial climates. A gentleman well known in Belfast has just supplied us with a sample of fruit from San Francisco, received by him from a friend in that city. Mr. W. C. Heron, of Albert Square, to whom we refer, last year visited California, and was greatly surprised and delighted with the luxuriance of the fruit crop.

The sample now before us reached Belfast, from San Francisco, in twenty days, and is in most perfect order, ready for the table. We would particularly notice a splendid specimen of what is called the Quince apple, of beautiful form and exquisite flavor. There is also a monstrous large green Newtown Pippin, which has many qualities to recommend it. The pears, particularly the Winter Nellis and the Duchess, are very large and palatable, the weight of the latter averaging 1 to 1½ lb. each. The flame-colored Tokay grapes are very fine, and the flavor more like what is grown in our vinehouses. There is no doubt that, although the freight is high—in fact extravagant, between California and Liverpool—yet we are sure fruit could be brought here at a price which would induce large purchases; and the grapes especially could be introduced at a fig-

ure much below what is paid for the home-grown grapes at a late season of the year. We believe a large trade is done in California in preserved pears, which could be forwarded at a very much reduced freight, and are considered a great luxury.

We would say the fruit received by Mr. Heron comes from Dr. John Strentzel, Alhambra Vineyard, Martinez. Mr. Heron found the vineyards in California to be the most extensive and enormously productive; and it gratified him to find among the people of that State many large comfortable farmers from the North of Ireland. Indeed, the commission agents from whom Mr. Heron received the fruit, bear well-known Irish names—Messrs. Lowry & Wightman, of San Francisco. We are sure they would be willing to give every information on the subject.—*Belfast News*.

The Place for Eastern Farmers.

[Written for the Press.]

To the enthusiastic admirers of California, the shyness of Eastern farmers, as manifested in the very limited emigration of that class to this State, is quite unaccountable. They cannot conceive how men can resist the attractions of this productive soil, and our lovely, healthful climate, and continue to endure the privations and discomforts of those ungenial regions. Even those who are disposed to give a more moderate estimate of the agricultural advantages of California, and are willing to acknowledge that reasonable objections to much emigration are to be found here, have apparently overlooked one of the, perhaps, most potent causes that have kept back an emigration which would be the greatest acquisition that California could possibly possess: namely, energetic, persevering, Eastern farmers.

It is the enormous scale on which agricultural operations are supposed to be conducted in our State, that has, to a great extent, deterred this proverbially cautious class from coming here, and embarking in enterprises in which their individual labors, and limited means, would be counted as naught. A true representative of this class would look upon such an undertaking as involving a risk of something dearer to him than even his closely reckoned savings. His reputation is at stake; and there is no portion of the American people who possess a greater pride in their calling, or, who feel more keenly the mortification attending failure, than this same class who are unjustly supposed to be actuated by no higher aspirations than to enjoy the simple comforts that their moderate earnings will procure.

The responsibilities of the farmer are greater and his cares are more numerous and of a more harassing character than is generally supposed; and the failures in this department of industry, although they are unrecorded in the business transactions of the day, and do not entail ruin upon others, are extremely disastrous to their victims; and are as keenly felt as any of the disappointments by which sensitive natures are surrounded. Being conscious of the credit awarded to successful agriculture, and having continually before their eyes the fear of the disgrace attending failure in this supposed safe calling, they become extremely anxious about their reputation for capacity; and the fear of getting beyond their depth, so characteristic of farmers as a class, arises to a great extent from this sensation.

Among the results obtained by progressive farming at the East, is a thorough conviction that the "land greed," which has become a national characteristic, has been disastrous to American farming. And now the old maxim—

"A little land well tilled,
And a little house well filled,"

Instead of being classed among the simple rules that were perhaps applicable to a more primitive state of agriculture, but are no longer available, have become the controlling element in Eastern farming; and, like many other simple rules, its practice is producing glorious results.

This saving principle will probably never again be lost sight of by those who have realized from it rich, substantial benefits; and although American farmers, as a class, are always ready to "sell out and move," they are not disposed to leave behind them, with their other trappings, the fundamental principles of their calling. But this is just what they are called upon to do when they embark in farming enterprises in localities where the area of their operations is estimated by miles instead of acres.

What are considered the agricultural districts proper of California (and of the other grain-producing States also, be it understood), present an aspect which, although it may justly excite our pride when the resources of the country are considered, is anything but inviting to the prudent Eastern farmer, or to that portion of foreign emigration which would be most available in our present needs. But there are portions of the State (the foothills) which would almost seem to have been created expressly for this prudent, energetic, persevering class of farmers. These reservations have been comparatively unnoticed either by tourists or home writers—at least as possessing any agricultural attractions; and the small portion of them at present occupied, are but temporary

stopping places for a discontented population.

Advantages in the Foothills.

But to those who are disposed to avoid the vast grain-producing districts, and wish to embark in mixed farming, these foothills offer many attractions. These attractions will bear comparison with those of the farming districts of the Atlantic States; while they present no obstacle that skilled industry cannot easily overcome. They are particularly adapted to the wants and habits of Eastern farmers, and in the aspect of the country they seem a repetition of what we may well fancy to have once been the condition of those now coveted rural homes on the East; but blessed with a climate with which nothing in the Atlantic States can compare.

For wheat growing these foothills of course offer but little inducement; but even for this crop they are as well adapted as a very large portion of New York, or the New England States. But for a varied system of farming, and for some specialties, they promise a good return for any amount of judicious labor bestowed upon them.

There are many of these wood-ranches, where scarcely any efforts has been made to obtain anything but the timber from the soil, that might within a few years be converted into good dairy farms. These are, within teaming distance of this city—Grass Valley. Sufficient natural advantages to warrant the anticipation of several cheese factories being established in this vicinity; and we hope to see the time when "Eastern Cheese" will be as great an anomaly in our market as Eastern flour would at present. California will yet fare sumptuously on its own bread and cheese, having enough and to spare of both.

The obstacles to be overcome in transforming these foothills into thrifty farming districts, are no more than sufficient to develop the habits essential to successful farming anywhere.

Whether the present unwieldy division of land, in what is now considered the agricultural districts, is to become permanent, or the future necessities of the country are to bring about such a division as will allow to each owner of the soil the amount of land that he can cultivate properly, time will determine; but in these foothills, to which we would call the attention of Eastern farmers, Nature seems to have effectually barricaded the worse land monopoly.

We do not expect, nor do we by any means wish, to see those agricultural nests occupied exclusively by Western farmers; for there are already indications among their present occupants of a spirit that will eventually produce the desired results. But it is to assure those who are deterred from coming to California by an unwillingness to adopt the "grand scale," on which all our farming operations are supposed to be conducted, and who are not disposed to undertake what they cannot do well and thoroughly, that there is an abundant supply here of just such places as would suit their favorite style of farming. H. BARNUM.

HORSES AND HONEY AT TAHITI.—At Market street we found the "Maggie Johnson" taking on cargo for Tahiti. She has already on board a pretty fair cargo of miscellaneous goods, among which we observed a racing wagon which is being carried out for the American Consul. Upon inquiry, we were informed that the horses in the Islands are but little larger than Shetland ponies, yet they manage to get over the ground at a rate of speed truly astonishing; and who can tell but we may be indebted to Tahiti for the horse that will beat "Goldsmith Maid"? We can imagine the sensation the representative of the United States will create, as, seated in his light racing-wagon of Kimball's Manufacture, he drives down the Broom road at the rate of 2:20. Won't the natives stare? Another feature of the "Maggie Johnson's" cargo is an invoice of five hundred redwood bee-hives. These hives have been manufactured in this city for a German resident of Tahiti, who has introduced bees into the Islands. He finds they thrive well, and believes he will be able to make a fortune. The climate of Tahiti is so equable that flowers are eternally in bloom, and the bees—industrious little fellows—just continue hoarding honey, waiting for the coming of winter so that they can take a rest and devour some of the sweet stores, until they die of old age. This enterprising German thinks that he will have a good thing on the bees, and proposes to furnish all the world with honey.—*Alta*.

SPARKLING RUBIES.—This is the title of a collection of new Sunday School Songs and Music, by Asa Hull and H. Sanders, Boston. As a compilation for the purposes intended, it seems to be faultless, and is certainly worthy the attention of those of maturer years, whose inclination leads them to the virtuous culture of the tiny tendrils of the mind in the children of the land, in their early reachings towards heaven. For sale by M. Gray, 623 Clay street, San Francisco.

GEMS OF STRAUSS.—By this title we have received from Oliver Ditson & Co., Boston, through M. Gray, of San Francisco, a sparkling volume, that all who wish to keep along with the choicest dance music of the times, should possess. It is a beautiful holiday present and in demand wherever known. Price, \$2.50.

HOME AND FARM.

Farm Life.

EDITORS PRESS:—Farming is considered a toilsome and tedious life to follow, and many a young man seeks the bustling of a city life in preference to tilling the soil and gathering the fruits thereof. Work without much exertion seems to be the key-note to many, which California has her share. A smart, intelligent and quick workman for farm labor, is a scarce article to find. Harvest is abundant but the laborers are few. There is labor and toil in farm life as well as in any other department. Are we not commanded to labor by the sweat of our brow? Still I hold that it is one of the happiest, nay, it is one of the greatest comforts that man can enjoy, if by his own will, a lending hand and cheerful heart, the cottage home is the paradise of earth; but how few appreciate it?

Who enjoys life better than a farmer? Is it the mechanic, merchant, tradesman? 'Tis to some extent; still there is some deficiency. The occupant of the soil is not confined to a small limit in business, but has full scope in business relations; he is not dependent on a few, but the world for a market. In his suburban retreat he is surrounded with everything that makes home happy; he is up by the break of day hearing the cheerful songsters echoing their notes of joy; he delights in his fine stock; looks over his broad fields; makes and marks his plans for daily life; delights to partake of his fruit, wine, nuts and raisins; he gazes with majestic awe to the tall and graceful forms of trees of ornamental shape; watches each flower that bursts forth in beauty, shape and magnificence; trains and shapes his shrubbery and vines to his taste; building and beautifying in the different portions of his estate looking to the comforts of all under his supervision, and at night raises his voice to his heavenly maker for all the blessings that is so lavishly given him to enjoy.

Farmers generally are preparing for

Fall Work.

We have had sufficient showers to set the harrow at work in volunteer and summer fallowed land. As you cast your eye over the plain you see the work goes bravely on—sowing and harrowing before the heavy rains set in—for no Californian can tell how the winter may terminate. The greater portion of farmers here consider that summer fallow produces heavier crops in their land than the common way. Our soil is but a few feet deep, of red texture, underneath lies a hard pan of stony nature which retains all the moisture on its surface. Our heavy rains of winter saturate the ground so thoroughly that it will bear no weight sufficiently to work for some time; such was the case last winter, though not the season, till it was too late to manure any grain. On such land the yield is double, say 30 bushels per acre; the common yield 15 to 18. Some of our farmers are adopting a plan by cutting their quarter sections in quarter lots, adopting the rotation system; summer fallow one part, volunteer the other, pasture the next, and sow the last, thereby not failing a good crop each year. All lands need rest. I know no better plan to follow.

Deep Plowing vs. Shallow.

I see this subject is agitated in your paper, and request the farmers to give their reason why one is better than the other. Majority of land here is worked with single plows, making better work than with gangs. The land is subject to bake, which requires more depth than many others, and kept in loose condition, the moisture from below gradually ascends to the surface and moistening the roots as they descend; growth of stock in summer fallow, long; new ground the same year, short; shallow work dries out more during our hot summers, and the growth extends along the river and bottom lands is deeper, requiring less depth to plow. Our lands are not rich, thereby not suitable for bearing yields in comparison to others, thereby no criterion to go by. Hay, grain and small fruit more adapted. Oat hay is principally raised, bringing a fair price. Barley yield heavier than wheat per acre; very little has been raised as there was no chance to plant it in last winter. Straw is very scarce; what there is is baled, and sells for \$8 per ton. Hay \$13; was \$10 a short time ago; but little oats raised, principally for seed. Seed oats two months ago could be bought for \$1.60 per bushel, now three cents is asked. Farmers do not feel like paying so much, and are sowing wheat for hay; makes better hay and brings \$2 per ton more than any other.

Alfalfa

Is not raised here to any extent; it will not do so well without irrigation; it has not been thoroughly tried; parties intend to sow this winter, if the seed is not too high. I see it is scarce and will command a high price. Along the rivers it is raised to a greater extent, cutting four to five crops per acre. Many of our farmers are buying

Sugar Beets

At the low price of \$2.50 per ton for feeding stock during the cold winter. The Sacramento Sugar Beet Manufactory have raised a large quantity. Outside parties have also raised them, but find there is an over supply, more

than can be converted into sugar this winter, thereby disposing of them for feeding purposes.

O. R.

Upper Stockton Road, Sacramento Co.

Wool Raising.

The immense destruction of wool and woolen goods by the Boston fire will, of course, operate advantageously with temporary effect on the wool interest of this State. This interest, which has for several years been regarded as the most certainly remunerative of any branch of agriculture on the coast, seems destined to rapidly expand, and to liberally reward all who give it their attention. There were in 1871 about 32,000,000 sheep in the United States, yielding an average of four pounds of wool each, or 128,000,000 in the aggregate. In addition to this product, the annual importation of wool amounts to about 68,000,000 pounds, at a cost of nearly \$10,000,000. In addition to this importation, we import woolen goods to the amount of about \$44,000,000 per annum. There is room therefore for an increase of 17,000,000 more sheep in the country to supply the home demand for wool and for about 12,000,000 to displace the importation of woolen goods, Landrum & Rogers, in their late pamphlet on this subject, show by incontestable figures the extremely flattering prospects of wool raisers, not only in this State, but all over the world. While the demand for wool is constantly and steadily increasing the facilities for the production are gradually decreasing. As new territory is occupied by permanent settlers the natural pastures are of course contracted and diminished. There is, however, a large area of territory in this State, Nevada, Utah, Arizona, Colorado and Mexico, which is well adapted to sheep raising, and presents a tempting field to those who incline to embark in this branch of business. In connection with sheep raising our herdsmen are giving a great deal of attention to the raising of Angora goats. Landrum says: "There is no grease or gum in goat's fleece, consequently when a goat shears three pounds, it shears as much material as the Merino sheep that shears eleven; and the goods made of mohair sell for double the price in the market." The price of Angora wool would command \$2 per pound in the market instead of \$1 were it not that there are but eleven mohair factories in the world, and they combine to keep down the prices. With greater competition in manufacturing the market value of the Angora fleece must materially advance. In 1843 there were 570,523 pounds of this wool exported from Turkey, the market value being 30 cents per pound. In 1853 the export amounted to 3,335,319 pounds, and the price had advanced to from 55 to 60 cents. In 1863 the export was 5,000,000 pounds, and the price 66 cents. In 1871 the export amounted to 7,000,000 lbs, and the price had advanced to 88 and 90 cents. The demand for this fleece increases more rapidly than its production, and the price in consequence is steadily advancing. Angora wool is now extensively used with silk in the manufacture of ladies' apparel. The wool production of the world at the present is 1,783,915,000 pounds, and that of mohair about 7,000,000 lbs. The authority above quoted, in speaking of the increase of sheep, says: "All sheep breed more lambs on the Pacific coast than on the Atlantic by 25 per cent. They should be put in small bands to save their lambs. Texan sheep will average a yearly increase of over 260 per cent; Mexican and Chinese, 150 per cent; Cotswolds, 150 per cent; Southdowns, 140 per cent; grade Merino, 125 per cent; pure Merino, 180 per cent. All, except the Merino, have lambs at one year old."

—Sacramento Union.

Mauna Loa.

This grand volcano is again in eruption. There are few volcanic mountains that present a more thrilling spectacle. It is situated in the island of Hawaii, in the Sandwich group. Viewed from the sea it is most majestic, rising to the height of nearly 14,000 feet in one huge mass. The summit is visible for an immense distance. There is upon the top a crater of enormous size, said to be not less than six miles in circumference, and more than eight hundred feet deep in its shallowest part vast abysses sinking down from that into unfathomable depths below. Other craters more active, but of smaller extent, exist upon the sides of the mountain, and frequently become the cause of alarm to the inhabitants of the island. The chief of them is on the eastern side, known as Kilauea, and has an elevation of a little more than four thousand feet. From these cratera eruptions are of frequent occurrence. As many as eleven have been recorded during the last eighty years. The crater of Kilauea was accurately described by Count Strzelecki, who visited it in 1838. He remarks in reference to it:

"Nowhere does the solution of the great problem of volcanic fires by Sir Humphrey Davy receive a more palpable illustration than here. The access of water to the ignited mass of minerals, of alkaline and earthy bases, by which that great philosopher explained the convulsions of volcanic fires, is displayed here in most portentous, most awful effects. It is only to those millions of vents all around the crater through which the superabundance of steam escapes—to the millions of fissures through which the sulphurous and sulphuric acids liberate themselves that the preservation of Hawaii from utter destruction by the expansive force of steam and gases is ascribed.

THE DAIRY.

How Deep to Set Milk.

At the last meeting of the Western New York Butter Makers' Association, the question of the proper depth at which to set milk, being under discussion. Mr. D. A. A. Nichols read an essay in which he maintained that in the absence of full and satisfactory experiments, the most profitable depth seemed to be from two and a half to four inches.

O. C. Blodgett held that milk should be cooled whatever the depth of setting, and that water is the most available agent. The question is, how shall we cool and keep cool our milk so that all the cream can rise before the milk sours? Mr. Thomas J. Dye has a dry cellar back of his dairy-house, and all the air admitted into this room is passed through this cellar, so that it is cooled down to 60 deg. or below before it is admitted. He can keep his milk two days before it sours. Mr. Blodgett thought that a system of pipes, or tiles, could be arranged under ground outside of the milk room, with an upright pipe or funnel through which the wind could be forced down into the underground pipes, cooled, and then admitted into the milk room.

Mr. A. M. Blanchard gave the results of a series of experiments on cooling and setting milk. He has a dairy-house of concrete, with another wall inside, eight inches from the outside and perfectly tight, so that when cooled down to 50 or 55 deg. it will remain so. He can keep his milk two days before skimming, even in the hottest weather, and it will be sweet when skimmed. He admits air into this room only at night. Had tied water two or three inches deep on the floor, and although it would keep the milk cool, the cream was rendered so soft and thin that it had to be dipped off with a dipper instead of skimming.

He has found the great essentials in butter-making to be coolness and dryness. He has a copious spring near his yard, and when milking he had to set his pails as fast as filled into the water of this spring, which is always at the temperature of 50 to 52 deg., and could thus cool his milk quickly and thoroughly. He now uses a patent cooler, cheap, simple and durable, which gives him complete control of the temperature of the milk and cream at all times. He gets an average of 250 pounds of butter to each cow, by cooling his milk.

He has tried all depths, from fifteen inches down to two, and finds eight inches the best depth to set milk, when a cooler is used. A long series of experiments is necessary to get at an average result. No one can tell how much milk it will take to make a pound of butter, judging from the previous day's yield. He had found that it would take 28 pound of milk for a pound of butter one day, and the very next day, perhaps, with the same cows, weather and feed, 23 or 24 pounds of milk will make a pound. His cows are Grade Short-Horns, which he prefers to any other breed.

Prof. Miller spoke on the philosophical fact connected with the statement of Mr. Blanchard that coldness and dryness are essential. The Professor said that cool air is always drier than warm air, and that is why the night air only admitted to Mr. Blanchard's dairy-room is better for his cream. Night air is drier than that of the day, as is shown by the fact that as the air cools the water is deposited in the form of dew.

The Corresponding Secretary read a communication from Avery Putnam, Esq., of Sicularville, who is a well-known dairyman and shipper, to the effect that only Ashton salt should be used for butter. Onondago salt, he says, is unfit to use in good butter.

Mr. Parmelee said that he was lately in New York, and in conversation with several dealers in first-class butter, they all agreed that only Ashton salt should be used. Any other makes the butter "sour," in two or three weeks. Mr. Blodgett said that Saginaw salt is not any better for butter than is Onondago.

MAKE GOOD BUTTER.—It is just as easy to make good, sweet, clean butter, as to make poor butter. The best of butter is made from sweet cream, gathered as free from milk as possible. To make good butter requires more than ordinary care and attention. Everything should move on with the regularity of the sun. To make butter profitable, great care must be exercised in milking the cows. To milk clean is important. It not only adds to the quantity of the butter, but saves the cow from positive injury. Let a farmer or his dairy get the name of keeping a good article of butter in every respect, and he will find it not only to pay, but pay well, too.

LOSS IN CHURNING.—M. Bonssingault (most eminent authority) finds as the result of a series of experiments on churning milk that only three-fourths of the butter is obtained by this method. He also states that it is not difficult to detect by the microscope the difference between this milk and the buttermilk that remains after churning cream. The mixture of buttermilk with skim-milk may also be detected and distinguished from fresh milk, which it closely resembles.

The dairywoman declares that one cause of white specks in butter is allowing a current of air to blow across the milk while cream is rising.

August Cheese of 1872.

An unusual state of things exists in the cheese market at this time, and has obtained for several weeks, which is worthy the thoughtful attention of all interested in the manufacture, sale and consumption of cheese. About as soon as the cheese made during the month of August began to reach the market, dealers and shippers found its flavor much impaired. As time went on the trouble increased, until matters arrived at such a pass that dealers in New York city declined to buy August cheese, except at a much reduced price. So decided, indeed, are they, that with their own hands they turn the cheeses out of the boxes, and if "August" is stencilled or written on the side, the cheeses are condemned. This state of things continues, and is likely to prevail until the August cheese is gradually worked off.

Such being the fact, it were well to inquire into the cause of the trouble. Without pretending to go into the matter elaborately I desire to call attention to one fact which should not be overlooked. The weather during the greater part of August was very warm; the air very oppressive, lifeless, muggy. As a consequence, the cows were affected by the heat, and their milk was feverish, tainted, unwholesome. Especially would this be the case in localities where the pastures are low and wet, and the water which the cows were obliged to drink, stagnant and slimy.

Had this milk been thoroughly stirred, cooled, and aired, before being made into cheese, the result would have been a much finer product, and much more money would have been realized from its sale. Dairywomen are slow to learn the necessity of cooling and airing their milk before it goes to the factory, or before it is made into cheese at home (and the appliances for doing this are many, simple and not expensive,) and never before has this necessity been made so apparent as during the present autumn. Shippers and dealers having taken the stand they have in relation to the August cheese, it comes home to the dairymen as a matter of profit and loss, and the pocket being touched, it is the most convincing argument that can be brought to bear upon them; and yet, as a purchaser of cheese, I find it difficult to convince the dairymen of the truth in this matter, or of the cause and remedy for the trouble which exists. With the August, September and October cheese on the tables at the factories, it is hard to make the salesmen believe that the first named—being the oldest and best cured—is not worth as much or more money than the others.

In buying, it is rarely necessary to taste of the cheese, but in examining about 400 August and September cheeses at a factory in Cayuga County, about ten days since, I tasted of some six or eight different ones of the August make, as a matter of curiosity, and by way of verifying the opinion I had formed of them. In taste they were all sharp, biting, acid, and though a bit only about as large as a bean was taken of each, yet the result was a dizziness which lasted for hours, and a derangement of the stomach which was noticeable for thirty-six hours, thus convincing me that they were of a mildly poisonous nature. On relating this circumstance to an Oswego County cheese-maker, he confirmed my opinion by stating that he had recently been similarly affected from the same cause. Doubtless these same cheeses, when cut and exposed to the air, would lose this deleterious property, in a great measure, but in its best estate such cheese is neither desirable nor wholesome. It should be stated, in this connection, that the weather during the latter part of August was cooler and more favorable, and as a consequence, the cheese made then is generally mild, rich and pure in flavor, equal to the September cheese, which in my judgment is ordinarily the best made in the entire season.

In the case of many factories, the September and October cheese is being sold, and the August cheese retained, in hopes, probably, that "something will turn up." This appears to me an unwise course.—Gardner B. Weeks, in Country Gentleman.

FOREIGN FRUITS.—The free arrivals of foreign dried and the dullness of the market incident to a general election has somewhat weakened prices and though no actual decline has been made below the closing prices of Friday last, neither has the business done since Wednesday been sufficiently large to make prices fairly strong at the present range. Layer raisins are selling at \$2.25; Loose Muscatel at \$2.70@2.75; Seedless at \$5 per 50 lb. frail; Valencia 9 1/2 @ 10c; Sultanias at 13 1/2 @ 14c. Currants are steady at 7 1/2 @ 7 3/4 c, and good old at 6 1/2 c. Citrus has been arriving freely, as will be seen by the imports this week and last and is lower, sales making of Leghorn at 46 1/2 @ 47c. Turkish prunes are rather dull at 8 1/2 @ 8 3/4 c for new and 5 @ 6 1/2 c for old; 100 kegs French prunes have sold at 12 1/2 @ 14 1/2 c, and to arrive some 1,000 have been sold this week. Almonds are unchanged in price, but move slowly. Other kinds are unchanged.—American Grocer.

WHY SOME HAIR CURLS.—If we examine with a microscope the hair of a person which curls naturally it will generally be found flattened and irregular in form, while the straight hair is more uniform in its cylindrical shape.

USEFUL INFORMATION.

INDIAN VS. CHINESE TEA.—Indian tea is said, on the authority of a correspondent of the *London Grocer*, to possess nearly double the strength of the Chinese article, and it is principally used by tea merchants and grocers for mixing with China tea to give strength and flavor to the latter. Most of the China tea sold in the London market, brings from 25 to 37½ cts. per lb. exclusive of 12½ cts. duty, while scarcely a chest of Indian Congou sells as low as 37½ cts. Indian teas in the London market generally retail about 50 per cent. higher than similar grades of China teas. Moreover while adulterations are not uncommon in China, they are never known in India. Green teas are almost exclusively the product of China, and are never known in India, with the exception of a limited quantity manufactured at some of the tea plantations on the Himalayas, mostly sold to the traders from Turkestan and Thibet, and only the surplus is sent to Europe. It pays the tea planter to make his tea leaf into black tea rather than green. Tea drinkers who prefer green tea must therefore be content with the product of Chinese ingenuity, and be satisfied to drink the compound of tea, turnure, Prussian blue, China clay, etc., prepared for the British "barbarians."

BLOOD AND LIME VARNISH.—The Chinese are said to make a varnish by heating together fresh blood with quick lime, which is extensively used as a coating for wooden articles which they wish to make completely water-tight. Von Scherzer, who first introduced this substance to the notice of Europeans, says he has seen in Pekin wooden chests that had been varnished with it, which after a journey over Siberia to St. Petersburg and back, were still sound and perfectly water-tight. Even baskets of straw, used for the transportation of oil, are made fit for the purpose by means of this varnish. Pasteboard coated with it becomes, both in appearance and firmness, like wood. Articles requiring to be absolutely impervious are varnished twice, or at most three times, by the Chinese. The preparation has been tested in various ways, both in Europe and Australia, and although it gives to vessels covered with it a rough, ugly red appearance, its use is recommended as a sure means of making wood impervious to water.—*Cabinet Maker.*

FOOD FROM THE SEA.—Richard D. Cutts, Esq., in his elaborate report to Congress showing the catch, consumption, and value of food from the sea, estimates its yearly worth at \$120,000,000 in Europe and the United States, including Japan. Valuing the fish at three cents per pound, it gives an amount of four billion pounds as the yearly yield of the sea of food for man. If we estimate the weight of neat cattle at 700 pounds each, and a pound of fish to be equal to a pound of meat, we have here as much food, all the uncultivated growth of the ocean, as is equal to five and three-fourths millions of cattle. The smallest consumers of fish per head are Japan and Russia; the largest Newfoundland, Prince Edward Island, and Nova Scotia. The last named places are surrounded by water, and the fish are abundant at their doors and always in a condition for a meal. Norway takes the lead, and France and the United States follow in production.

VINEGAR FROM RHUBARB.—Good vinegar cannot be made of rhubarb (pie-plant) juice. Acetic acid, which is the sour principle of vinegar, is formed from alcohol, which is made from sugar, which in its turn may be made from starch. The juice extracted from the stocks of rhubarb is almost, if not entirely, destitute of sugar or starch, and accordingly contains little or nothing from which vinegar can be made. It contains, however, several vegetable acids, that are healthful and have agreeable flavors, and on this account some people add the requisite amount of alcohol, sugar or molasses to do it, and ferment the mixture in one of the ways we lately described for making vinegar from cider. It is rather an expensive way of making vinegar, and the product is not on the whole superior.

A PERPETUAL PASTE.—Dissolve a teaspoonful of alum in a quart of warm water. When cold, stir in as much flour as will give it the consistency of thick cream, being particular to heat up all the lumps; stir in as much powdered resin as will lay on a dime, and throw in half a dozen cloves to give a pleasant odor. Have on the fire a tea-cup of boiling water, pour the flour mixture into it, stirring well at the time. In a very few minutes it will be of the consistency of mush. Pour it into an earthen or China vessel; let it cool; lay a cover on, and put in a cool place. When needed for use, take out a portion and soften it with warm water. Paste thus made will last twelve months. It is better than gum, as it does not gloss the paper, and can be written on.—*Journal Applied Chemistry.*

PRESERVING FUNGI.—It sometimes becomes desirable to preserve specimens of fungi for future or more convenient examination. For such purpose the following mixture has been recommended: Sulphuric acid; 2 pints, water, 8 pints; mix and add creosote, 1 pint. Bottle the fungi in this and cork tightly. It is said to preserve them perfectly, without change of color. Fungi may be preserved by drying by bedding them in silver sand, gills upwards, in tin boxes, and placing them in a slow oven, even for two or three hours.

INDUSTRIAL PROGRESS IN RUSSIA.—Next to our own country, there is no nation in the world that gives evidence of such rapid progress in industrial matters as Russia. Her mechanical and metallurgical interests are almost daily developing, and new means of utilizing her great resources are constantly coming into existence. A gigantic establishment has been recently founded by MM. Sturve, Brothers, near the city of Kolom, which it is stated, rivals in magnitude the finest workshops of England or Belgium. It has been in operation but five years, and is at present engaged in the manufacture of iron bridges and railroad freight cars, though recently locomotives and passenger coaches have also been produced. At times, during the year just past, the works employed 4,000 hands. To give an idea of the importance of the establishment, we may add that since its foundation it has completed 3,000 cars; and since it has begun the manufacture, 79 locomotives have left its shops.

LOSS OF WEIGHT IN FREEZING WOOD.—A century ago Datiband showed that when wood is submitted to a degree of cold sufficient to freeze the water contained in its texture, the wood, on being thawed, had diminished considerably in weight. This he explained it on the hypothesis that the wood, in the contraction produced by the cold, had expelled a portion of the water contained in its tissues.

Hofmeister proved the loss of weight, but explained it on the theory that, in freezing, the fluids of the plant had surrendered their dissolved gases and thus diminished its weight.

Studying the phenomena of freezing under these conditions, M. Ed. Prillieux thinks that since the ice forms around the cells, the fluids contained in these organisms must pass outside of them, and consequently he more favorably exposed to the influence of evaporation, and the diminution of the weight be thus produced.

ARTIFICIAL MAGNETS.—Tempered steel is used for the most part in making artificial magnets, and the harder the temper of the steel the greater is the strength or "coercive force" of the magnet. The horse-shoe form is very common on account of its convenience in experiments. The steel bar to be magnetized is laid on a table, and the pole of a powerful magnet is rubbed a few times upon the bar in the direction of its length, and always in the same direction. To magnetize steel in the form of a horse-shoe, a magnet of the same shape and nearly the same size should be used. This should be placed vertically on the magnet to be formed, and moved from the ends toward the head, or in the opposite way, and brought round again on an arch to the starting point. A piece of soft iron as the armature should be provided and placed at the poles of the new magnet to act as the conservator of its magnetism.

ZINC LABELS FOR TREES.—Buy a foot of sheet zinc, cut it in strips one inch by two, or whatever size is desired, and if the name of the tree or plant is written on with ink made of the following ingredients, it will be indelible:

"Take of verdigris and sal ammoniac each two drachms, lampblack one drachm, water four ounces, to be well mixed in a mortar, adding the water gradually. It must be kept in a glass stoppered vial. Write on the zinc with the ink, after shaking it well, with a quill pen; and after it is dry you may expose it to the weather or bury it in the ground for years, and it will be as legible as when first written."

STRENGTH OF GUNPOWDER.—Would one grain of gun or blasting powder, in the middle of a cubic yard of copper, crack this mass of metal from its center if it could be fired so as to get all its force?

Ans.—Gunpowder, in burning, changes form, becomes gas, and requires many times the space it occupied while in the solid state. If it were possible to inclose a small quantity of powder in a large mass of solid metal and so ignite it that there would be no escape of gas, its explosive energy would either split open the metal or make room for the generated gas by enlarging the powder chamber. The experiment, however is an impracticable one.—*Ec.*

If a tallow candle be placed in a gun, and shot at the door, it will go through without sustaining any injury; and if a musket-ball be fired into water, it will not only rebound, but be flattened as if fired against a solid substance. A musket-ball may be fired through a pane of glass, making the hole the size of the ball, without cracking the glass; if the glass be suspended by a thread, it will make no difference, and the thread will not even vibrate.

"DEER TONGUE," a little plant that grows abundantly in the pine forests throughout the lower Southern States, is now attracting considerable attention as an article for scenting tobacco and wrappers for cigars, the leaves having a strong vanilla odor. A Southern paper is confident that the day is not far distant when the "deer tongue" will become one of the most important productions of the South. This is probably an extravagant estimate of the value of "deer tongue."

How is It?—It is stated that the artesian well at St. Louis developed a temperature at the depth of 3,800 feet too cold to be determined by any instrument of science at the time in use for such purpose, and that the opponents of the theory of high central heat in the earth refer to this fact as an important argument in favor of their assumption.

GOOD HEALTH.

The Way to Treat Consumption.

Dr. Goodwin W. Tims, of the North London Hospital, furnishes to the *Dublin Medical Press and Circular* the following results of his experience in managing this fatal disease:

We may sum up shortly our treatment of consumption: Light, simple, and nourishing diet, in quantity always in proportion to the appetite of the individual (the palate is an excellent guide, which we should be always afraid to offend), all wholesome fruits and vegetables, a moderate amount of thoroughly cooked meat, and dilutents, tea, milk, whey, etc., according to the patient's experience, avoiding all stimulants and forcing of the appetite. Regimen: excitement of the skin by constant cleanliness, friction, and woolen clothing; fresh air, sea air if possible; exercise of every kind, gymnastic exercises, singing, reading; the avoidance of every restriction by dress upon the chest-walls, and of indolence, and self-indulgence of every kind; the exclusion of gas from all apartments inhabited by the invalid; early hours, and as short a sojourn as possible in the same atmosphere; hence it is better to take a short sleep in the day than to remain more than six or seven hours in the bedroom, the windows of which should never be shut except upon particular occasions, or under peculiar circumstances.

Drug treatment. An obstinate cough with expectoration in the member of a consumptive family, unaccompanied by much general disturbance, is most successfully treated by twelve or fifteen drops of dilute hydrochloric acid in one ounce of water every two hours. Patients often declare that they taste the chlorine in the expectoration.

An obstinate dry cough accompanied by emaciation, debility and fever, is very successfully treated by half an ounce of cod-liver oil three times a day after meals, in a draught containing one fifteenth of a grain of chlorhydrate of mercury. Either of these remedies is good in all stages of the disease, with or without oil.

In children cod-liver oil alone is very successful; as age advances, the remedial power of cod-liver oil is diminished.

Steel is only to be given for a few days at a time. All astringents, except for special objects, are injurious. The citrate or tartrate of soda or potash should be given occasionally, and these salines are quite as generally useful as steel.

Mild laxatives occasionally are very beneficial: pills of gray powder and rhubarb for the young and a mild aloetic pill for the middle-aged will tempt the practitioner who tries them to very frequent use. Trying to help towards the successful treatment of a few varieties of consumption, it would not become me to condemn any drugs recommended by other practitioners. So intractable is the disease, that every new remedy ought to have a fair trial. Familiar with the idea of patients being induced to swallow the urine of the boar constrictor, and the pancreatic fluid of a pig, if a patient were to tell me that he had found benefit from imbibing the saliva of a goat, I should not hesitate to recommend him to persevere in its use.

The Feet in Winter.

Through the feet comes every year to multitudes—death! Especially in winter ought pains to be taken to keep the feet warm, to be healthful; the warmth comes from within. Stockings keep the feet warm because they keep about the feet the warmth which comes from them; hence those materials are the best for the feet that are non-conductors; thus it is that woolen stockings are considered warmer than cotton or silk; there is less warmth in cotton than in woolen, because they convey the heat with very great rapidity from the feet. Yet some people's feet are more comfortable in winter with cotton or silk, than woolen, because persons with a vigorous circulation give out so much heat, that if kept about the feet, perspiration is induced. This becomes condensed by the cold from through the hoot or shoe, thus keeping the feet cold and clammy and damp, and most disagreeably cold, but if such persons wear cotton or silk, the extra heat is conveyed away, leaving enough to keep the feet warm.

If the pores of the skin are closed in any part of the body, that part is either unnaturally hot or cold. If the circulation is vigorous, it overheats because it cannot escape through these escape pipes of the system. If the circulation is sluggish, if there is but little vitality, the blood of the veins stagnates and the blood of the arteries, which carries heat and life, cannot get there; hence the first step in keeping the feet warm is to keep the pores open. That can only be done in one way—keep the feet clean; clean away the concretions of perspiration, oil and dust, which are always accumulating, and which seal the tops of these pores—the chimneys of the system—hermetically.

The Function of Breathing.

Considered in all its relations, the function of breathing is a wonder of wonders. Because we are familiar with the process of inhaling and expelling air from the chest, it excites neither admiration, nor even thought. By watching the play of the respiratory apparatus, however, some perplexing phenomena are presented well worth studying.

The lungs are two membranous sacks, one on each side, of unequal dimensions in men, separated by a vertical partition, but united at the bottom of the neck in a single tube—the windpipe.

When one lung is diseased, life is maintained by the other. If both are severely inflamed, ulcerated, or in any way incapacitated for vital service, death inevitably ensues.

By taking a breath of air about six millions of minute cells, which make up the body of the lungs, are distended, and at that instant of inflation oxygen is separated from it, and taken into the system. Life therefore is solely and exclusively sustained by that element.

Every living thing, from animals to the whole vegetable kingdom, is just as dependent for life on atmospheric air as man. Trees breathe through their leaves. If torn away the trunk would languish and die. Were all the leaves of a full-grown apple tree placed side by side, were it possible to have their edges exactly touch, so as to appear like a carpet, it is calculated they would cover more than an acre of ground. Some of the gigantic forest trees yield leaves enough to cover an area of nearly two acres.

Our own lungs afford an absorbent on which air infringes equal to almost one hundred square feet, it is assumed by some physiologists.

In transplanting young trees it is an unphilosophical process to trim the limbs so closely that only a few twigs are left. In that mutilated condition the effort to live is a hard struggle.

More die than survive the violence, because they are deprived of their breathing organs. One side of each leaf imbibes carbon from the air for making wood, while the other throws off oxygen for keeping the atmosphere supplied with a material that supports life, without which death would reign triumphantly.

Nearly all leaves of trees contain a large amount of astringent property called tannin. When quite dry and driven about by the wind, if boiled, they yield just what is necessary for tanning leather. Barks, now extremely expensive, might be given up almost entirely if this economy were pursued. Maple, willow, chestnut, and indeed almost all those of familiar growth here at the North might be utilized in that important art, to the saving of millions of dollars in this country annually.

After the tannin is dissolved in the leaf cells the strong decoction is ready for the vats. The pulp thus deprived of the matter which prevents leaves from decomposing for a very long while, becomes an excellent fertilizer. Farmers make a mistake in gathering leaves into piles or mixing them with other manure, because it is a loss of time and labor, it is so long before they decompose and become food for living plants.—*Ec.*

Absinthe a Poison.

A French commission, consisting of experts, has just made a report, reviewing all of the methods employed in the manufacture of absinthe, and the great loss of life entailed by its use in France. They recommend that this article be included under the list of poisons, and that its sale be interdicted, excepting on prescription of a physician. They think its sale should be visited with heavy penalties, and that every effort be made to break up the indulgence in an article possessing such poisonous properties. It is not the absinthe alone that proves so dangerous, but the inordinate consumption of alcohol that accompanies it. Some have been known to take 30 glasses of absinthe every day, the greater part of which is absolute alcohol, and thus the danger is largely increased.

It is thus practically shown that the pleasant flavor of the absinthe induces persons to consume twenty times as much alcohol as they would be likely to do if their drinking was confined to brandy or eau de vie. Absinthe was almost unknown, except as a medicinal agent, before the Algerian expedition, under the reign of Louis Philippe. Fever made sad havoc in the ranks of the army, and the doctors recommended the soldiers to mix absinthe, which is the bitter extract of wormwood, with their wine, as a preservative against miasmata, in lieu of quinine, which was too costly to be generally distributed. During the whole of the campaign the army drank this mixture, and also mixed absinthe with their brandy. The habit was retained by the troops after their return to France, and the liquor now known as absinthe thus became a popular drink throughout France. As a means of sure and speedy suicide, absinthe is scarcely excelled by strychnine.

CARE OF THE HAIR.—To keep the hair healthy, keep the head clean. Brush the scalp well with a stiff brush, while dry. Then wash with Castile soap, and rub into the roots, hay rum, brandy or camphor water. This done twice a month will prove beneficial. Brush the scalp thoroughly twice a week. Dampen hair with soft water at the toilet, and do not use oil.



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SAN FRANCISCO:

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SEMI-TROPICAL NURSERIES.—We have re-
ceived the catalogue and price list of tropical
and other trees of Thos. A. Garsy, of Los An-
geles, California. It is a catalogue well worthy
the attention of fruit growers.

WEDNESDAY evening, Nov. 27th, after four
frosty nights, the sky is now overcast, and with
every indication of rain.

ON FILE.—Talk about Seeds, by C. M. P.;
Notes on Oregon.

Experiments in Fuel—Cheap Irrigation.

Mr. Wilcox has recently been experimenting
at his works on Fremont street, with his large
pump or "lifter," to ascertain the relative value
of coal and wood for making steam, and also
the actual cost of raising given quantities of
water for irrigating purposes. The boiler used
was one of his style of upright tubular boilers
encased with brick, the shell being 8 feet in
length and 36 inches in diameter, with 36 tubes
2½ in diameter amounting to 365 feet of heat-
ing surface. The pump in each of the follow-
ing trials was gauged to run at 8 strokes per
minute raising 150 gallons per stroke. The
water was raised 35 feet; 14 feet of which was
done by the exhaust steam alone.

The first trial was with ¼ ton of first-class
quality of Mt. Diablo screenings, which ran 90
minutes, raising 108,000 gallons.

The 2d trial was with ¼ ton of ordinary Mt.
Diablo coal, which ran 85 minutes, raising 102,-
000 gallons.

The 3d trial was with ¼ cord of dry Oregon
pine wood, which ran 95 minutes, raising 114,-
000 gallons.

At the above rates 1 ton of good screenings,
costing \$7.00 per ton, will raise 432,000 gallons
35 feet, equal to 1½ cents for each 1,000 gallons.
From the trial of wood we may reckon that
one cord, at say \$8.00 per cord, will raise 456,-
000 gallons 35 feet high, at the rate of 1½ cents
for each 1,000 gallons. Reckoning wood at \$5
per cord, each 1,000 gallons will cost 1 cent and
1 mill.

Twenty-seven thousand gallons of water will
cover one acre of land one inch deep, which at
the rate of \$5 per cord for wood will cost:

1 acre, 1 in. deep...	\$ 0.29½	1 acre, 2 in. deep...	\$ 0.59½
5 " " " "	1.48½	5 " " " "	2.98
10 " " " "	2.97	10 " " " "	5.94
100 " " " "	29.70	100 " " " "	59.40

These lifters are made of some twenty differ-
ent sizes—five of which, with their capacities
and cost are given as follows:

A lifter with boiler, pipes and everything
complete, with a capacity for raising 10,000 gal-
lons per hour, will cost \$628. This machine,
according to the above experiments, can be run
6 days of 10 hours each with 1½ cords of wood,
which at \$5 per cord will cost \$7.50. During
those six days the machine will raise 600,000
gallons of water 35 feet above its natural level,
or sufficient to flood 11 acres of land 2 inches
deep.

A machine of 20,000 gallons per hour capac-
ity, costing \$980 will in the same time raise to
the same height water enough to flood 22 acres
2 in. deep, at a cost for fuel of \$15.

One of 40,000 gallons capacity will cost \$1,-
720, and will flood under the same conditions
as above, 44 acres, at a cost of \$30. One cost-
ing \$3,230 will flood 83 acres at a cost of \$55.
One costing \$4,000 will flood 111 acres at a cost
of \$75. In the trials made, as above noted, ¼
cord of wood was found to raise 114,000 gal-
lons. But in the calculations here introduced
that amount of wood is made to raise only 100,-
000 gallons—a deduction from the actual trial
of 14,000 gallons on every 100,000.

It will be seen from the above that the cost
of fuel, at \$5 per cord, for irrigating to the ex-
tent of two inches in depth will amount to
only about 75 or 80 cents per acre, aside from
the original cost of the steam apparatus, which,
reckoning a fair interest upon the same, will not
make the total cost to exceed \$4.50 per acre.

An excess of 2 inches of water, applied just
at the time when it is most needed, will ensure
a good crop of wheat in our driest seasons;
while, if necessary for that or other crops, the
amount of water could be doubled at an extra
cost not to exceed 75 cents per acre.

By having this device always on hand, to be
used in case of need, the farmer is made inde-
pendent of the weather—a crop being always
assured to him, even in the driest season. A
large number of these machines have been sold
for irrigating purposes in various parts of the
State, to which persons who may think of buy-
ing are confidently referred, for their practical
value as above set forth. As much interest is
now manifested in obtaining economical means
for raising water for irrigating purposes, we can
mention this lifter as one of great utility and
promise; and, in fact, a matter of absolute ne-
cessity when irrigation is required on large
tracts, in the absence of ditches. The machine
is perfectly simple, and but little liable to dis-
arrangement. Its management can be entrusted
to even a common laborer, as there is no en-
gine connected with its operation. This device
was fully described and illustrated in the RURAL
PRESS of May 6th, 1871.

Planting Out Orchards.

We are asked what kinds of summer crops
can be grown in a young orchard of apple and
pear trees without injury to the trees; and also
how we would grow an orchard taking it from
the seed, if we could have just our own way
about it; and how we would prepare the ground
for the introduction of the trees and when is
the proper time to begin.

We would fit all kinds of soils intended for
orchards, by deep and thorough pulverization,
not only where the trees are to stand, but
the soil between the trees. It is usual
to keep young orchards in crop for the first
two or three years; the constant stirring of
soil, incident to such cropping, proving highly
advantageous in the destruction of weeds, and
keeping the soil loose and porous; but the
crops should be of the proper kind or great in-
jury is done the trees.

The cereals, as wheat, oats or barley, are ex-
ceedingly injurious to young orchard trees
and should never be cultivated among them.
They not only exhaust the soil of mors nutri-
ment as well as moisture than most hood crops,
as corn, potatoes or other vegetables, but the
heat reflected from the bright straw and stub-
ble will destroy many of the young trees.

How to Plant an Orchard.

We are giving our views on orchard planting,
as applicable to the peculiar conditions of the
seasons and climates of California. Any hood
crop, such as potatoes, beets or carrots can be
grown to advantage, and without injury to the
young trees. Prepare the ground and plant
with any one of these products, and plant apple
or pear seeds in the same rows at suitable
distances, devoting three feet square to the
tree seeds; and let no vegetation come nearer
than this.

Be sure that your seeds will vegetate, by
testing their vitality before hand; plant these,
three seeds in a place, two inches apart, an
inch and a half deep, depending somewhat up-
on the nature of the soil; and as they grow,
cultivate them as so many pets you thought a
great deal of, till they begin to put out their
rough leaves and are growing vigorously; then
if more than one of the three planted are grow-
ing in a place, draw out all but the strongest,
and cultivate carefully, keeping down all weeds,
and keep the soil mellow and friable, but not
to exceed an inch or two in depth.

After Management.

Early the ensuing spring graft every tree at
or near the surface of the ground, or wherever
the stalk is of proper size, by the process
known as whip-grafting, and cultivate there-
after precisely the same as though rooted trees
had been used from the nurseries.

There may be soils on which it is impracti-
cable to raise an orchard on this plan or any
other, soils wholly unsuited to such a purpose,
and it may be that the "hard dry plains," of
our correspondent are of this character. All
that we claim for planting the trees where they
are to remain is, that where a tree will grow—
climate and soil being at all favorable—there
the tree will be better, equally fruitful after the
first year or two of their bearing, healthier and
longer lived, and less likely to suffer from pro-
tracted drouth, high winds or sudden atmos-
pheric changes, if allowed to strike its roots
from the first, wholly un mutilated, deep below
the surface of the soil.

The above is our plan for the growing of an
orchard; but one or two years may be gained
by using trees from the nursery; and in pro-
curing them there, you save the time of two
years of cultivation and the trouble of grafting
with the desired varieties, which trees can al-
ways be obtained of responsible nurserymen.

A RETROGRADE AGRICULTURE.—We wish to
"keep it before the people," that too many of
our farmers are practising a retrograde agricul-
ture, following too closely in the footsteps of
their predecessors of the Atlantic side. Our
grand breadth of acres, devoted annually to the
production of wheat, with perhaps the exception
of a few of our richest alluviums, are rapidly
becoming less and less productive, and in a
ratio altogether greater than is presented in
any other clime or country. It may seem a
startling assertion, but it is true; and when we
carefully scan the causes that tend to this con-
dition, we are not surprised that it should at-
tain. We must grow a diversity of crops or let
our land rest, or both.

The Care of Calves.

The stock growers of California give too lit-
tle attention to the rearing of their calves.
Great effort is everywhere being made to im-
prove our breeds of dairy stock, but that effort
seems to be confined almost exclusively to the
securing of blooded animals to breed from,
with little or no care as to how the calves of
these animals are kept from birth to puberty.
The present improved breeds of cattle and
dairy stock are nearly as much the result of
good keeping and care as any particular quality
of breed.

Take any two animals of common breed and
attempt to improve upon them or their progeny;
it can only be done by extra care in their keep-
ing. It is the only way in which it can be done,
the only way it was ever done; and to keep up
the fine qualities of animals against deteriora-
tion they must be well cared for. It is the most
natural thing in the world, indeed it is nature,
that animals neglected and allowed to run wild
with no care for their comfort or keeping, will
rapidly degenerate into a primitive condition,
suited to their means of procuring a livelihood
and the climate they are obliged to live in.

It becomes a matter then of the greatest im-
portance that particular attention be given to
the rearing of calves. If they are well kept
the first and second years suffering no set back
from insufficient or improper food or exposure
to an inclement climate, we may expect no ma-
terial deterioration; but if calves are fed mostly
upon skimmed milk or whey and as likely to
be sour as sweet, it is an unnatural food, and
they cannot make the development they would,
were they fed liberally of the food that nature
would provide them.

What improvement, what else than deteriora-
tion can be expected from calves scantily fed
with milk even of the best quality for two or
three months, and then forced to pick up a liv-
ing to often from dry herbage of our plains and
valleys and when the winter sets in, exposed
to all the rigors of cold and drenching rain-
storms?

Stunted the First Year, Stunted ever After.
Should be painted in Roman letters upon the
panels of every calf-pen throughout the dairy
countries of the world.

How Climate Affects Cheese.

We would direct the attention of dairy-men
to an article in this number under the heading
of "August Cheese of 1872." It would appear
from it, that climate has much more to do with
the quality of cheese than has been supposed
or expressed heretofore. It seems that what
they call "muggy" weather, in which the air
is hot, damp and lifeless, affects injuriously the
quality of cheese made during its continuance,
though it may not affect materially, if at all,
cheese made immediately previous.

If the cause of the poor cheese made in An-
gust is charged to the right source in the article
alluded to, can we not find it a good reason why
California cheese should, when properly made,
stand at the top of the market? The kind of
weather, "muggy," is unknown here; we have
long seasons of hot, but generally dry weather;
and when we have rain it is usually cool. Our
hot weather produces no fever in animals ex-
posed to its influence, where they have access
to an abundance of pure water.

It would seem therefore that in the very con-
ditions of our climate, that we sometimes feel
as burdensome, are to be found the elements
and causes that constitute it the very acme of
perfection for dairy purposes. And particularly
does this hold good with all the vast region of
foothill and mountain pasturage with which
our State abounds, where lightness and dryness
of the atmosphere with abundance of pure
water, seem to combine to make it the paradise
of the dairyman.

THE PEDIGREE of several head of Short-
horn stock in this State, as entered in Allen's
American Herd Book, is questioned through
a card published in two of our Eastern ex-
changes. We have made inquiries in order to
state positive facts on the matter, and will be
able to give our readers the exact information
soon.

STRAWBERRIES AND THANKSGIVING.—We ob-
serve this morning—the day before Thanksgiv-
ing—beautiful strawberries at the fruit-stands.
On inquiry, we find they are grown in the open
air, forwarded fifty miles by railroad, and sold
at twenty cents a pound.

California Trout.

The most delicious fish we have on this coast are our trout, and very few streams will be found without them. In localities within reasonable distances of the city, they afford great amusement for amateur Isaac Waltons, and further off the Indians depend upon them for a portion of their subsistence, and ranchmen vary their diet of bacon and beans, or mutton, with an occasional dish of trout. The abundance of these fish in most streams is, however, no excuse for parties to slaughter them wholesale by the use of Giant Powder, or with seines. The former method was extensively practiced until forbidden by law. Large charges of Giant Powder were placed in a favorable spot in a creek and then exploded. The concussion caused the fish to come to the surface, where they were captured in large quantities.

The use of seines is almost as bad as this, and more especially when used in breeding seasons. The law forbids the catching of trout during certain seasons, varying in different counties of the State, and we believe, expressly prohibits the use of seines in any instance; nevertheless this rule is frequently broken. We know of an instance where a gentleman in Marin County, after stocking a creek on his private property with fish, at considerable expense, found to his chagrin that an enterprising Frenchman had taken advantage of his temporary absence, and had captured nearly all the fish in the stream by means of nets. If this practice is allowed to continue, it will result in a total extermination of our brook trout, much to the sorrow of legitimate sportsmen.

The Fish Commissioners have been very active in endeavoring to suppress all of these nefarious practices, and we hope they will continue to do so. A contemporary mentions an instance of wholesale destruction, which only occurred last week, in which a two-horse wagon load of salmon trout were caught in Pescadero Creek, with a seine. That particular locality is one that should be especially guarded, since its close proximity to the city renders it a favorite resort for sportsmen in the summer. It would be well to see that all such creeks as Purissima, San Gregorio, Pescadero, Butano, White House, Waddell's, Scott's, San Lorenzo and others on the Coast, with which sportsmen are familiar, should have some sort of supervision from residents near them, to prevent similar depredations occurring there.

The trouble taken by many gentlemen in this State in pisciculture will be more than counterbalanced by a few dozen men with nets; and while some are endeavoring to stock new creeks with fish, others will be emptying the inhabited ones by means unbecoming sportsmen. There are so many people who delight in angling that it is a pity that their sport should be stopped to satisfy the pecuniary desires of a few "pot-hunters." If every farmer who lives near a creek which contains these finny beauties, were to keep an eye on the people who they see in the neighborhood, and would report to the Fish Commissioners any violation of the law, these offences would be much less frequent.

Sherman Island.

EDITORS PRESS:—As a number of us on the island take your valuable paper, I think it no more than fair you should hear from us, and as I have not seen Sherman Island mentioned for some time and not feeling like letting it sink in oblivion will send you a few lines to let you know we are living and have survived the flood finely. The farmers are all busy plowing and harrowing and will soon begin to sow. The ground looks beautifully, so that soon every vestige of the flood will be erased, if we could only forget our beautiful orchards that we lost; but we are not going to give up to despair, for we yet hope to see this the garden of California. Within two weeks the big levees will be completed on the Sacramento side, with many thanks to our energetic trustees. Our school is in fine condition with one of the best of teachers, and the scholars are improving finely. By the way our country Superintendent is the right man in the right place—long may he hold his position. Some of the farmers here had fair crops, considering they were so late. The stock looks as well or better than any in the county.

ROME.

Nov. 20th, 1872.

DELICIOUS GRAPES.—We have received from the Alhambra Gardens, near Martinez, a box of superb grapes of a number of varieties, including that from which the—so-called—Zante currants are made; the donor is Dr. J. Strentzel. May the frosts of age fall lightly, and render as beautiful the winter of his years, as were the tinted autumn leaves that accompanied the generous gift.

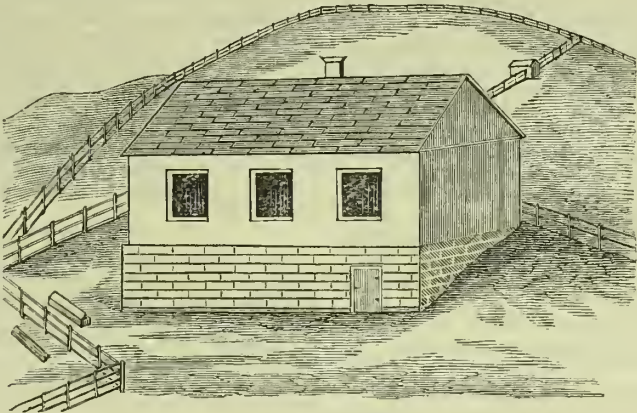
Captain O. Allen's Dairy.

In a former number of the RURAL we gave a description of this celebrated dairy in Marin county; but as we had not then the cuts illustrative of the same, we reproduce in part an account of this, though not the largest, yet one of the most nearly perfect and successful dairy establishments on the Pacific Coast.

On approaching the home of this model dairy-man we emerge from a winding cañon and behold across a small valley on the brow of an oblong hill, extending across the entrance of another cañon which leads off in another direction, the beautiful cottage residence—dairy house, carriage house, barn and other out-buildings of Captain Allen, all painted white, and relieved and shaded with the deep green foliage of the locust, the native walnut, and

of cows in each. The floor of the yards being a natural granite rock, can never be muddy, and sloping either way is always dry and clean. In the small house on a line with the division fence is a milk receiver into which the milkers from either yard pour their milk as fast as their buckets are filled.

As the milk is poured into this receiver it all passes through a strainer and then through a conducting pipe into the milk house, and into another receiver, from which it is drawn through a faucet into a bucket, which is provided with another strainer. From this bucket it is poured into the pans which have already been arranged on the racks around the outer edge of the milk room. By this arrangement it will be seen that there is no occasion for the milkers to go into the milk house with their dirty feet—and every room in it is kept as clean as a parlor. In the center of the milk room is the milk-skimming table in the center of which is a funnel to receive the sour milk, and from the bottom of this funnel is a lead pipe bent in the



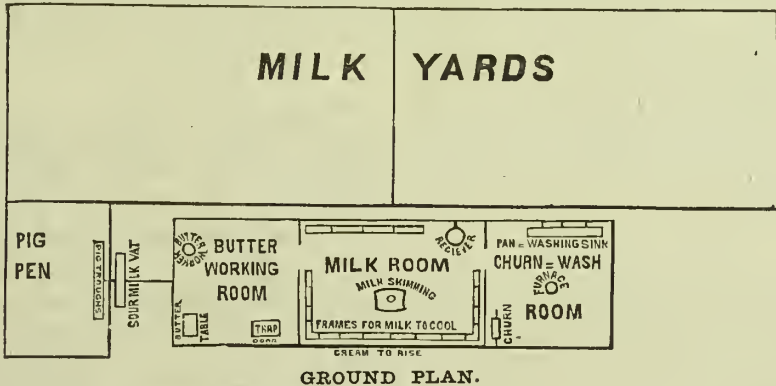
DAIRY HOUSE.

fruit trees of various kinds, and festooned with the climbing rose, passion flower and other climbing vines. The first view presents to the mind a picture of prosperity, of comfort, of home—a country home in all its simplicity and rural beauty.

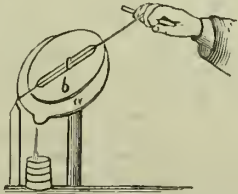
In the person of Capt. Allen we find a hale, hearty, old gentleman of about sixty-five years—a countenance that beams with kindness, benevolence and intelligence—a manner that at once grasps you by the hand, and steals your

form of the letter *o* and leading some hundred feet down the hill to the sour milk vats, and from these it is drawn out into the pig troughs as occasion requires.

The milk always resting in the lower bend of the letter *o* prevents the smell from the sour milk vats coming into the milk room. The cream is removed and turned into the churn, which is simply a square box suspended and revolving upon an axle fastened to the heads but not passing through the churn. This churn



heart, and makes you feel at home and at ease. Every inch, a practical man and thorough mechanic. System is written in every line of his face, and in every action, just the man we would suppose would make a successful dairyman. He owns 2,014 acres of land in one body where he lives, valued at \$40 per acre. Has it stocked with six hundred head of cattle, and is milking 225 dairy cows, and turns out from 38,000 to 40,000 pounds of butter a year. Has at times milked as high as 350 cows, and made 75,000 pounds of butter a year. Has sold no butter this year less than thirty cents a pound



BUTTER WORKER.

—when he cannot get that price he packs it. With this introduction and comments on business we will accompany the son Charles Allen into the dairy house and talk of the

Practical Workings of the Dairy.

The accompanying cuts which are prepared from memory, will serve to give the reader a bird's-eye view of the immediate dairy establishment. Let us premise by saying that every building about the place and every cow yard and pig pen is abundantly supplied with cold spring water, conducted through lead pipe from a living spring over six hundred perpendicular feet above the highest building in the place, and nearly a mile away on the side of a hill or mountain.

The center of the milking yards is located on the apex of a gradually sloping hill, a fence dividing the yard so as to have a less number

is run by a horse upon an endless chain horse power in the basement.

Upon the partition near the churn may be seen three thumb springs, one connected by a wire with a bell below, and is pulled to ring the bell to start or stop the horse. One is connected by a cord with an upright cylinder on the horse power on which is ingeniously fastened a raw-hide riding-whip so situated that by pulling the thumb-spring the whip will hit the horse in case he does not start at the ringing of the bell.

The other thumb-spring connects with a brake to stop the horse power and churn in case the horse does not heed the stopping bell, and to prevent his starting when taking up the butter. So that the labor and time of a driver is saved, and the butter maker in the churn room has entire control of the power and churn machinery.

The churning completed, the butter is removed to the butter room and placed upon the butter worker. This is an invention of Captain Allen's and consists, as may be seen in the cut of a round table with one leg, the table leaf inclining at a moderate angle with the leg and containing a groove around the edge on the upper surface, so as to lead any fluid to the discharging spout. Above this stationary table, about two or three inches, is another table leaf of a little less diameter, resting upon an upright axle or leg so as at all times to keep the same incline as the lower one, and so supported that it may be made to turn upon its axis or upright support. To complete the machine a lever is suspended with a universal joint in such a position that it may be brought in contact with the upper surface of the revolving table at every point. The center of this lever is flat shaped like a two-edged knife.

We received a larger drawing of the butter-worker, but it reached us subsequent to making the engraving presented.

The butter to be worked is placed on the revolving table and cut and pressed and worked, being kept in any desired position under the lever by turning the table and being made to

assume any desired form by the motion of the lever itself. The buttermilk in the meantime falls from the upper table to the lower and is conducted into a vessel standing under the discharging spout.

When the buttermilk is sufficiently worked out and salt thoroughly mixed in; the butter is cut into rolls of a proper size for moulding into two-pound hexagon shaped rolls. This is done by a butter moulder, also the invention of Captain Allen. It consists of a pair of crooked tongs something in the shape of the tongs used to handle ice with, the moulds being divided into halves, and one-half being attached to each prong of the tongs, in such a manner that the butter may be clasped and firmly pressed in shape. This being done the tongs are opened and the moulded roll is deposited in another half mould of equally the same size and form which has been laid on the cooling table, covered with a wet cloth cut in proper shape and size to wrap the roll of butter in. The cloth is then brought over the butter in proper shape and the other half mould is placed on to keep the roll in proper shape until hardened by cooling. These rolls are then set upon end and stamped with the letter A, the trademark by which the butter is known, and by which it is sold. Butter with this brand brings the highest price and always finds eager customers.

General Remarks.

There are many little things connected with this establishment which go to make up a perfect whole, but which in mere notes we could not mention. We recommend all those who are in the dairy business to visit and profit by it, and those who contemplate embarking in the business cannot spend their time and money better than to visit Captain Allen's dairy, if they had to travel a thousand miles and spend a month's time.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

FOR WEEK ENDING OCTOBER 22d, 1872.*

- FILTER.—Matthew Cooke and James W. Watt, Sacramento, Cal.
- MODE OF LUBRICATING MACHINERY.—Alexander P. Gross, Vallejo, Cal.
- REFLECTING-LANTERN.—Emil Boesch, S. F., Cal.
- LUBRICATOR.—John E. Louergan, Sacramento, Cal.
- SASH-HOLDER.—Henry Polley, S. F., Cal., assignor to himself and Anthony Rosenfield, same place.

FOR WEEK ENDING OCTOBER 29th, 1872.*

- TRADE-MARK—MEDICINE.—James S. Coleman, S. F., Cal.

By Special Dispatch, Dated Washington, D. C., Nov. 26th, 1872.

FOR WEEK ENDING NOVEMBER 12th, 1872.*

- FURNACE FOR ROASTING ORES.—Martin P. Boss, Eureka, Nev.
- GANG-PLow.—Charles Kewin, S. F., Cal.
- TAPPET FOR QUARTZ MILLS.—Benjamin McCauley, Grass Valley, Cal.
- APPARATUS FOR AMALGAMATING GOLD AND SILVER.—James Oliver, Ophir, Cal.
- MANUFACTURE OF SUGAR IN BLOCKS OR CUBES.—A. F. W. Partz, Oakland, Cal.
- FRUIT BOX.—Charles W. Weston, S. F., Cal.
- ANIMAL TRAP.—George Barr, Clatskanie, Oregon.
- CAR COUPLING.—Elisha T. Barlow, S. F., Cal.
- BALANCED SLIDE VALVE.—Henry Kessler, S. F., Cal.
- BOTTLING MACHINE.—James Armstrong and Samuel Marks, S. F., Cal.
- BOTTLING APPARATUS.—Asher S. Taylor, S. F., Cal.
- DEVICE FOR CHARGING DRILL HOLES.—Francis X. Lavalley, Auburn, Cal.

*The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue. NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

VICK'S FLORAL GUIDE.—We have received from this celebrated florist and seedsman of Rochester, New York, his beautifully Illustrated Floral Guide for 1873. It is, we believe, the handsomest work of its kind and the most complete ever published in the United States. Elaborate in all of its descriptive departments, perfectly elegant in its embellishments, and faultless in typographical execution.

It embodies more really useful information on the subjects of flowers and fruits, the planting of seeds, the embellishment of grounds, the beautifying of homes, the parterre and the parlor, than we have ever before seen in any similar work. We feel like commending the great seedsman to the patronage of the world.



Tired Mothers.

A little elbow leans upon your knee,
Your tired knee, that has so much to bear;
A child's dear eyes are looking lovingly
From underneath a tangle of tangled hair.
Perhaps you do not heed the velvet touch
Of warm, moist fingers, folding yours so tight;
You do not prize this blessing over-much,
You almost are too tired to pray to night.

But it is blessedness! A year ago
I did not see it as I do to-day—
We are so dull and thankless; and too slow
To catch the sunshine till it slips away,
And now it seems surpassing strange to me,
That, while I wore the harge of motherhood,
I did not kiss more oft, and tenderly,
The little child that brought me only good.

And if, some night when you sit down to rest,
You miss this elbow from your tired knee,
This restless, curling head from off your breast,
This hissing tongue that chatters constantly;
If from your own dimpled hands had slipped,
And ne'er would nestle in your palm again;
If the white feet into their grave had tripped,
I could not blame you for your heart-ache then!

I wonder so that mothers ever fret
At little children clinging to their gown;
Or that the foot-prints, when the days are wet
Are ever black enough to make them frown.
If I could find a little muddy boot,
Or cap, or jacket on my chamber floor;
If I could kiss a rosy, restless foot,
And hear its patter in my home once more.

If I could mend a broken cart to-day,
To-morrow make a kite, to reach the sky—
There is no woman in God's world could say
She was more blissfully content than I.
But ah! the dainty pillow next my own
Is never rumpled by a shuiling head;
My singing birdling from its nest is flown;
The little boy I used to kiss is dead!

From the *Aldine* for September.

A True Marriage.

Theodore Parker wrote thus sensibly on the marriage question:

Men and women, and especially young people, do not know that it takes years to marry completely two hearts, even of the most loving and well-assorted. But nature allows no sudden change. We slope very gradually from the cradle to the summit of life. Marriage is gradual, a fraction of us at a time. A happy wedlock is a long falling in love. I know young persons think love belongs only to the brown hair, and plump, round, crimson cheeks. So it does for its beginning, just as Mt. Washington begins at Boston Bay. But the golden marriage is a part of love which the bridal day knows nothing of. Youth is the tassel and silken flower of love, age is the full corn, ripe and solid in the ear. Beautiful is the morning of love, with its prophetic crimson, violet, purple, and gold, with its hopes of days that are to come. Beautiful also is the evening of love, with its glad remembrances, and its rainbow side turned toward heaven as well as earth.

Young people marry their opposite in temper and general character, and such a marriage is commonly a good match. They do it instinctively. The young man does not say, "My black eyes require to be wed with blue, and my over-reheiments require to be a little modified with some what of dullness and reserve." When these opposites come together to be wed, they do not know it; each thinks the other just like itself.

Old people never marry their opposites; they marry their similars, and from calculation. Each of these two arrangements is very proper. In their long journey these two young opposites will fall out by the way a great many times and both get out of the road; but each will charm the other back again, and by-and-by they will be agreed as to the place they will go to and the road they will go by, and become reconciled. The man will be nobler and larger for being associated with so much humanity unlike himself, and she will be a noble woman for having manhood beside her that seeks to correct her deficiencies and supply her with what she lacks, if the diversity be not too great, and there be real piety and love in their hearts to begin with.

The old bridegroom, having a much shorter journey to make, must associate himself with one like himself. Men and women are married fractionally; now a small fraction, then a large fraction. Very few are married totally, and they only, I think, after some forty or fifty years of gradual approach and experiment. Such a large and sweet fruit is a complete marriage that it needs a very long summer to ripen in, and then a long winter to mellow and season it. But a real, happy marriage of love and judgment between a noble man and woman is one of the things so very handsome that if the sun were, as the Greek poets fabled, a god, he might stop the world in order to feast his eyes on such a spectacle.

If a man does not make new acquaintances as he advances in life, he will soon find himself alone. A man should keep his friendship in constant repair.

Sensible Remarks on Becoming Fashions.

The writer of the fashion articles in the *Golden Era* gives the following sensible advice to ladies about following the fashions for wearing the hair. She succeeds in putting a column of wisdom in this little paragraph. "It is surprising how readily the latest style of wearing the hair has been adopted. It is now almost universally raised from the neck and we note with pleasure a decline in fondness for the great quantities of false hair so recently piled upon the feminine head. But our ladies think they must be in fashion, and in the blind adoption of these entirely different styles of hair-dressing often sacrifice what they are making the greatest effort to enhance, their own beauty. When the style, beautiful in itself, but usually most trying to the American face, of wearing all the hair scraped back and bound into a circle of close plaits behind, came in, every woman discarded the favorite but slovenly net that had been ruining the backs of her dresses for two years. The net was well rid of, but this classic style did not accomplish all that was thought it would. Hardly one woman in ten looked fit to be seen, for the head must be exceptionally regular to stand this treatment. Every woman should study her head before she dresses her hair and allow her good sense to dictate when a fashion should be modified or when it can be implicitly followed. If the forehead narrows above the cheek bone, pads can be worn in the hair at the side. If the forehead is broad and the face narrow this style should be rigidly avoided whatever be the fashion. If the head is slightly flat, plaits across it, or the hair turned over a roll will improve the shape, but if naturally too high the fullness of hair should be given to other parts. If the head is perfect in shape, the blest possessor should disregard any fashion that could conceal a charm so exceedingly rare.

The Dress of Civilized Women.

I do declare that I think it would be better to die and get out of torment at once than to have to rise every morning for some forty or fifty years and box one's body up in a sort of compressive armor, hang weights to one's hips and more weights upon the head, which last are supported by the roots of the hair; put one's feet into shoes a number too small, and not of the right shape, and with heels like stilts; and then set about doing the whole duty of women with a cheerful face and a spry air, for from fifteen to seventeen mortal hours out of the twenty-four! That there are so many women who are not frightened into a decline at such a prospect, and that they bravely undertake to do it—nay, more, that they even dream that under such disadvantages they can work side by side with unshackled man, and they do not die in trying to do it, certainly says much for their courage, but very little for their common sense.

A man's dress to a great extent is fashioned for comfort. He has contrivances for suspending the weight of his clothing from his shoulders. If the east wind blows he can turn up his coat collar, button himself up snugly, slouch his hat over his eyes, thrust his hands into his pockets and brave the weather. But imagine a woman removing her hat or bonnet from the angle at which fashion says she must wear it on account of the weather, or turning any of her "fixtures" up to protect her neck and throat, or buttoning up anything that was unbuttoned before, or sticking her hands into her pockets! She would be taken for an improper character out on a mild spree, or for a lunatic asylum, should she endeavor by any impromptu arrangement of habiliments to save her health.—From *The Science of Health*.

STUDY AND BEAUTY.—The woman who is indifferent to her looks is no true woman. God meant woman to be attractive, to look well, to please, and it is one of her duties to carry out this intention of her maker. But that dress is to do all, and to suffice, is more than we can be brought to believe. Just because we do love to see girls look well, as well as to live to some purpose, we would urge upon them such a course of reading and study as will confer such as no modiste can supply. A well known author once wrote a pretty essay on the power of education to beauty—that it absolutely chiseled the features; that he had seen many a clumsy nose and pair of thick lips so modified by thought awakened and active sentiment as to be unrecognizable. And he put it on that ground that we so often see people, homely and unattractive in youth, bloom in middle life into a softened Indian summer of good looks and mellow ones.

WEALTH and content do not always lie together.

TRUE AND FALSE HEARTS.—They dwell in every community and their attributes are as visible to human eyes as the good and bad actions of all accountable beings are. The false heart is as inconstant as the waves of an ocean, it is the abode of human selfishness where no refined and tender feeling and sentiment ever enters in; its passions are strong and its ambitions are wild, but ever restless, changeable and transitory. It cleaves to us in our prosperity, and, so long as an intimate association with us can bring to it any social, political or business distinction it courts, curries, and cajoles us into the belief that its interests in our welfare is as sincere and earnest as our own. The true heart is as unchangeable as eternity; it cleaves to us through every worldly trial and misfortune; it regards our failings with charity and our mistakes with pity and forgiveness. The unchangeable love of such a heart is the most priceless boon in the Heavenly dispensation of God's great gifts to humanity. It is often the last prop that sustains a drooping soul, that staggers under its heavy burden of sorrow and adversity. No atom of self love nor quality of deceit lurks in the placid bosom where it dwells. A true heart is as incapable of a mean action as a bird is incapable of flying without wings.—*Fireside Friend*.

THE VOICE OF THE SHELL.—When a shell is held up to the ear, there is a peculiar vibratory noise. Philosophically investigated, the peculiar sound thus recognized is a phenomenon that has very much perplexed learned gentlemen for a long while. The experiment is easily made by simply pressing a spiral shell, common in collections, over the cerebrum of either ear. If a large shell, the sound is very much like that of a far-off cataract. Now what does it? Every muscle in the body is always in a state of tension. Some are more on the stretch than others, particularly those of the fingers. It is conceded that the vibration of the fibres of those in the fingers being communicated in the shell, it propagates and intensifies it, as the hollow body of a violin does the vibration of its strings, and thus the acoustic nerve receives the sonorous impressions. Muscles of the leg below the knee are said to vibrate in the same way, and if conducted to the ear produce the same result.

EVENING.—It was evening. The candles were lighted in the farm houses, and through the windows they gleamed out upon the sombre landscape like great bright stars. The work of the day was done and the twilight shadows had settled down over the quiet neighborhood like a holy calm. Before an old-time fire-place a family group were seated, the burning logs gleamed and crackled upon the hearth, illuminating the whole room. In the chimney corner in his old-fashioned arm-chair, sat a venerable old man with an open Bible upon his knees. He read in a voice tremulous with age the old, old story, that we first learned to lisp in our infancy, of one who lived and died for us; and when the chapter was finished, they knelt down together about the hearthstone, and the same faltering voice invoked Heaven's protection for that household through the hours of the silent night. The children were put to bed, the old folks followed them, the fire went out upon the hearth and all was peaceful and still.

WOMAN'S GROWTH.—There is a period in the early life of every true woman, when moral and intellectual growth seems for the time to cease. The intellect, having appropriated alimient requisite to growth of the uncrowned feminine nature, feels the necessity of more intimate companionship with the masculine mind to start it on its second period of development. Here, at this point, some stand, for years, without making a step in advance. Others marry, and astonish, in a few brief years, by their sweet temper, their new beauty, their high accomplishments, and their noble womanhood, those whose blindness led them to suppose they were among the incurably heartless and frivolous.

I look not back after my childhood, but forward. I feel it as something to reach, not to leave. O young people, these hoary and wrinkled ones, your elders, smile at your esteeming them so old! There is, as the heathen fabled, an elixir of life—a fountain of immortal youth. Every prejudice you throw off renews your age, till you are more a child in your "Father's house" of "many mansions" than you were in your spring-time, or college days. Every conquest of passion is rejuvenation.—*Dr. Bartol*.

Young Folks' Column.

The Faithful Shepherd Boy.

Gerhardt was a German shepherd boy; and a noble fellow he was, too, although he was very, very poor. One day he was watching his flock which was feeding in a valley on the borders of a forest, a hunter came out of the wood and asked—

"How far is it to the nearest village?"
"Six miles, sir," replied the boy; "but the road is only a sheep track, and very easily missed."

The hunter glanced at the crooked track, and then said—

"My lad, I am hungry, tired and thirsty. I have lost my companions and missed my way. Leave your sheep and show me the road. I will pay you well."

"I cannot leave my sheep, sir," rejoined Gerhardt; "They would stray into the forest, and be eaten by the wolves or stolen by the robbers."

"Well, what of that?" queried the hunter.

"They are not your sheep. The loss of one or more wouldn't be much to your master; and I'll give you more money than you ever earned in a whole year."

"I cannot go, sir," rejoined Gerhardt very firmly. "My master pays me for my time and he trusts me with his sheep. If I were to sell you my time which does not belong to me, and the sheep should get lost, it would be just the same as if I stole them."

"Well," said the hunter, "will you trust your sheep with me while you go to the village and get me some food and drink and a guide? I will take good care of them for you."

The boy shook his head. "The sheep," said he, "do not know your voice, and"—Gerhardt stopped speaking.

"And what? Can't you trust me? Do I look like a dishonest man?" said the hunter angrily.

"Sir," said the boy slowly, "you tried to make me false to my trust and wanted me to break my word to my master. How do I know you would keep your word to me?"

The hunter laughed; for he felt that the boy had fairly cornered him. He said, "I see, my lad, that you are a good, faithful boy. I will not forget you. Show me the road and I will try to make it out for myself."

Gerhardt now offered the humble contents of his scrip to the hungry man, who, coarse as they were, ate them gladly. Presently his attendants came up; and then Gerhardt, to his surprise, found that the hunter was the grand duke, who owned all the country around. The duke was so pleased with the boy's honesty, that he sent for him shortly after, and had him educated. In after years Gerhardt became a very rich and powerful man; but he remained honest and true to his dying day.

Honesty, truth and fidelity are precious jewels in the character of a child. When they spring from piety, they are pure diamonds, and make their possessor very beautiful, very happy, very honorable and very useful. May you, my readers, wear them as Gerhardt did. Then a greater than a duke will befriend you; for the great King will adopt you as His children, and you will become princes and princesses royal in the kingdom of God.—*Young Pilgrim*.

Pluck in Girls.

Girls can make their own way in the world if they have energy to plan and courage to execute. The stuff is in them if they know how to use it. Gail Hamilton tells a good story:

I know two girls born to wealth. In their early youth they were rich, careless, free. They walked, and drove, and hunted, and boated, and drank great draughts of happiness and health. Presently trouble came. Affairs were involved. The stalwart father became a confirmed and helpless invalid. Did they sit down and wring their hands? Did they go moaning all their days, begging men to give them a little sewing, a little teaching, a little copying? Not they. They began in a small way in a country town to keep a grocery store. They gave fair measure and right change. They kept what people wanted; and if anything was called for which they had not, they put it down on the list of future purchases. They had the cleanest and nicest grocery for miles around. They hired a clerk and bought a horse, and built a house, and are at this moment independent property holders, as well as agreeable women.

WERE it not for hope the heart would break.

WHAT is bought is cheaper than a gift.

WEAK things united become strong.

DOMESTIC ECONOMY

Coffee-Making.

Prof. Liebig, the German chemist, says good coffee should be rich in two principles, *extract* and *aroma*. When boiled a long time coffee is rich in extract, but deficient in aroma; and when boiled only a short time it is rich in aroma but deficient in extract. In order to obtain both of these properties, Prof. Liebig directs to take two-thirds of the ground coffee needed for a meal, put in the water and boil briskly a considerable time, and when the meal is nearly ready, take the coffee from the fire and add the remaining third of ground coffee; stir it well, let it stand a few minutes and serve.

The above directions will not avail much if the coffee is not properly roasted. Roast often, and in small quantities at a time.

According to M. Schadler only half the quantity of finely ground coffee is needed, in order to produce the same strength of beverage obtained by the ordinary coarse ground article. If, after the Oriental fashion, the ground coffee is crushed fine in a mortar, only two-fifths of the coarse is needed. Infusion, boiling, or filtering through a bag, all have the same result as regards strength, except that by filtering the aroma of the coffee is better preserved.

To Detect Alum in Bread.

One of the most common adulterations of bread is with alum, and any ready mode of detecting such adulteration is a matter of importance to all. Perhaps the best and most convenient test is in the use of logwood and ammonia, which is given by Mr. Horsely substantially as follows: 1st. Make a tincture of logwood by boiling for eight hours two drams of freshly cut logwood chips in five ounces of methylated spirits in a wide-mouthed phial, and then filter the liquid. 2d. Make a strong solution of carbonate of ammonia in distilled or carefully filtered rain water. Place a teaspoonful of each solution in a wine-glass full of water and pour the mixture into a white ware saucer. The fluid will be of a pink color. Bread containing alum if immersed in this liquid for five minutes or so, and then laid out to drain and dry on a plate, will, in an hour, or as soon as it gets a little dry, commence to turn blue; but if no alum is contained in the bread the pink color, which it has acquired in the solution will gradually fade away. If on drying, a greenish tint is perceptible, the presence of copper may be suspected.

IMPROVED COOKING RANGE.—A correspondent of the *Missouri Republican* gives the following somewhat facetious description of an improved cooking arrangement which was exhibited at the late Institute Fair in New York:—

At the fair there is a machine that will drive the plumb line to suicide and allow a household hot biscuit in twenty-six minutes after the fire is made in the range, while that old ice-box of an oven is below zero. It is a zinc arrangement that sits on top of the range. It has compartments for meat at the first floor, the vegetables occupy the second, and the garret is devoted to the breads, puddings and pies. This machine, when I saw it in operation, had a large piece of roast beef in the middle chamber, a variety of vegetables above, and a stunning loaf of bread, an Indian pudding and a pan of baked apples on the top. These different divisions are air-tight, but between them the steam madly circulates and returns in water to the main supply in the bottom. Sufficient water is put in at first to get up steam for the entire dose of cooking. The minute that the water boils in the base of the machinery the steam ascends between all these compartments, through lots of passages, and the things to be cooked are to be put in, the meat a little in advance of the bread and vegetables. There need be but a moderate fire in the range or stove—your dinner cooks, and cooks splendidly. It's the greatest domestic blessing of the age, and the sooner Chicago people get this new invention, the sooner they'll be happy.

HOW TO MAKE TOAST.—A dish of good toast is a rarity and is an enjoyment. For breakfast few things surpass it to those who are accustomed to that dish at that meal. It is light, digestible and reliable, and is not very expensive. A cup of tea or coffee, with a baked Spitzburg, or a dish of any other sub-acid in addition, will make a satisfactory meal to a reasonable man. In toasting bread the following rules should be observed: Warm your bread well, by changing the sides of the slice when heated through, brown as is desired. There should be rather little than much browning, and the slices should be quite thin, say a quarter or three-eighths of an inch, no more. But do not scorch; avoid that in all cases. The philosophy in browning is to take your time until you are done. Where the toast accumulates keep in a hot dish, but use as soon as possible. What is desirable in toast is the rich color and flavor formed by changing the starch into dextrine or gum. Heat evaporates moisture in bread as well as elsewhere. The moisture that escapes from toast leaves the bread light, soft and porous inside.

COOKING UNDER PRESSURE.—Experiments by Professor Junichen prove that the time for cooking various articles of daily consumption is very much shorter when effected under strong pressure, while a great saving in fuel is also obtained.

TO MAKE CHUTNEY.—Indian chutney is a compound of mangoes, chillies, and limejuice, with some portion of other native fruits, such as tamarinds, etc., the flavor being lightened by garlic. For family use the following recipe will be found very suitable: Chillies, one pound, to one and a half pounds, apples, one pound, red tamarinds, two pounds; sugar candy, one pound; fresh ginger-root, one pound; garlic, one-half pound to three-fourths of a pound; sultana raisins, one and a half pound; fine salt one pound; distilled vinegar, five bottles. The chillies are to be soaked for an hour in the vinegar, and the whole ground with a stone and muller to a paste.

Here is another recipe which may be depended upon for making an excellent chutney: One pound salt; one pound mustard seed; one pound stoned raisins; one pound brown sugar; twelve ounces garlic; six ounces cayenne pepper; two quarts unripe gooseberries; and two quarts best vinegar. The mustard seed should be gently dried and bruised, and the sugar made into a syrup with a pint of vinegar; the gooseberries dried and boiled in a quart of the vinegar; the garlic to be well bruised in a mortar. When cold, gradually mix the whole in a mortar, and with the remaining vinegar thoroughly amalgamate them. To be tied down close; the longer kept the better.

BREAD MADE WITH SEA-WATER.—Rabuteau, after considering the effects of sea-water in large or small doses on the economy, thinks that bread made with it might be taken with advantage in dyspepsia, phthisis, and scrofula. The bread is extremely pleasant to the taste.—*Am. Jour. Pharm.*

A SOUP FOUNTAIN.—Liebig's extract of meat, which makes an excellent soup, is hereafter to be supplied to the poor classes of Paris at a merely nominal cost, from regular fountains. A. M. Levy announces that he will inaugurate a fountain of soup in his establishment, and, for the first two days, will distribute the same gratis to the public.

Practical Recipes.

APPLE SHORT CAKE.—To one quart of sifted flour add two teaspoonfuls of cream tartar and one of soda, half a teaspoonful of salt, quarter of a pound of butter, sweet milk or cream enough to mix it. Have the dough rather stiff, roll and bake in a sheet. As soon as baked, split open the whole cake, spread one piece quickly with butter, cover with well sweetened apple sauce, pour over some thick sweet cream, grate on nutmeg, place the other half on this (crust side down) spread with butter, cover the apple sauce, cream and nutmeg.

FARMER'S FRUIT CAKE.—Three cups of dried apples, wash and cut each piece into three pieces, then boil in a syrup made of two cups of sugar, half a cup of water, two tablespoonfuls of essence of lemon, until preserved through and tender. Be very careful not to let it burn. When cooked sufficiently, take off and cool; then add one cup of dried cherries, three cups of raisins, two cups of sugar, half a cup of brandy, one cup of butter, six eggs, one teaspoonful of cloves, nutmeg and cinnamon, pulverized and mixed, flour to make a stiff batter; bake one hour.

GINGERSNAPS.—One heaping cup of flour, one cup of molasses, half a cup of sugar, the same of butter, and half as much of lard, one table-spoonful of ginger, a teaspoonful of salt. Mix all together, knead it stiff, roll thin, and bake moderately.

WATER CAKES.—Dry three pounds of fine flour, and rub into it a pound of sifted sugar, one pound of butter, and one ounce of caraway-seed. Make it into a paste with three-quarters of a pint of boiling new milk, roll very thin, and cut into the size you choose; punch full of holes, and bake on tin plates in a cool oven.

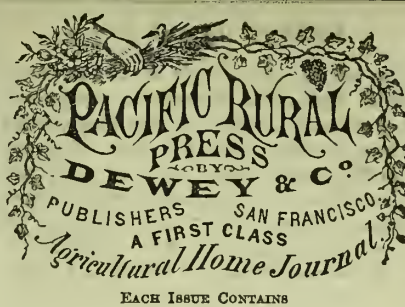
BUTTER CAKES.—To half a pound of butter add the same quantity of brown sugar, three eggs, the rind of two lemons, a quarter of an ounce of cinnamon, and a table-spoonful of ginger. Work into it as much flour as will make it a paste; cut it into shapes, and strew over the top some powdered almonds and candied orange peel. Bake in a slow oven.

EVE'S PUDDING.—Grate three quarters of a pound of bread; mix it with the same quantity of finely-shred suet, the same of apples, and the same of currants. Mix with these four eggs beaten to a froth. Put it into a shape and boil three hours. Serve with pudding-sauce, in which is a little lemon-juice.

ORNAMENTAL CROCKERY.—A gentleman in New Haven, Conn., has invented a machine for printing in colored and gilt enamel on china and pottery of all kinds which, it is claimed, will revolutionize the whole business of ornamenting crockery, reducing the cost to a small fraction of what it now is. He has applied for patents in several foreign countries as well as in the United States.

AMUSEMENTS.—Let amusements fill up the chinks of your existence, not the great spaces thereof. Let your pleasures be taken as Daniel took his prayers—with his windows open; pleasures which need not cause a single blush on an ingenious cheek.—*Parker.*

GOLD WEARS AWAY IN HANDLING. Government states that in the simple counting and transfer of one million of dollars from one vault to another the loss by abrasion amounts to \$6.



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Cranberry Culture, by a Practical Grower in N. J. Joseph J. White. A special treatise of 126 pages. Post paid from this office, \$1.75.

Farm Implements and Farm Machinery, and the principles of their construction and use. With simple and practical explanations of the Laws of Motion and Force as applied on the Farm; by John J. Thomas: 287 illustrations and 302 pages. Sold by DEWEY & Co., post paid, for \$1.75.

Ten Acres Enough: A practical experience, showing how a very small farm may be made to keep a very large family, with extensive and profitable experience in the cultivation of the smaller fruits. Tenth edition, 1871. Price, post free, \$1.50, at this office.

Observations on the Culture of Silk in California. By I. N. Hoag, of Sacramento, 1870. Pamphlet, 33 pages. For sale by DEWEY & CO., Publishers of PACIFIC RURAL PRESS, San Francisco. Post paid, 25 cts.

Cotton Culture; by J. B. Symon; with an additional chapter on Cotton Seed and its uses. 150 pages. 1868. Price, post free, \$1.75, at this office.

How Crops Grow; by Johnson; A treatise on the chemical composition, structure and life of the plant, for all students of agriculture; with illustration and analysis. 334 pages; 1868. Post free from this office, \$2.50.

American Grape Growers' Guide; by Wm. Chilton (N. Y.) 204 pages, 1852. Post free, \$1, from this office.

American Fish Culture, embracing all the details of artificial breeding and rearing of Trout, and the culture of other fishes; by Thos. Norris. Illustrated, 304 pages, 1868. Post free from this office, \$2.50.

How Crops Feed; Johnson, 1870. On the Atmosphere and the Soil as related to the nutrition of agricultural plants. Illustrated. 375 pages. Post free from this office, \$2.50.

Thresher's Guide and Farmer's Friend—by D. Hollahan, a Californian, and a practical thresher for over fifteen years. It contains facts and hints of great value to those specially interested, who thresh or employ threshers. Published by DEWEY & CO., at this office. In flexible cloth, \$1. Post free.

Randall's Sheep Husbandry, illustrated, with a treatise on the Diseases of Sheep, Prevention and Cure. Post free from this office, cloth edition, \$2.

The Mining & Scientific Press,

Started in 1860, is one of the oldest weekly journals now published in San Francisco. It has been conducted by its present proprietors for nine years, during which period it has been repeatedly enlarged and constantly improved. The active and steadfast efforts of its publishers have gained for its conduct an amount of practical experience greater than any other publishers have accumulated on this coast, of a weekly journal.

The sum paid by us for the best editorial talent obtainable for our special class journal; for engravings, for interesting news and correspondence, and for printing a large-sized, handsome sheet, is unequalled by that of any other American weekly west of the Mississippi.

As a PRACTICAL MINING JOURNAL it has no rival on this Continent.

It is the only MECHANICAL, and the only SCIENTIFIC journal of the Pacific States.

Every Miner, Assayer, Millman, and Metallurgist in the United States should take it.

Every Pacific Coast Mechanic, Engineer, Inventor, Manufacturer, Professional Man, and Progressive and Industrial Student should patronize its columns of fresh and valuable information.

Every Mining Engineer, Superintendent, Metallurgist, Mine Owner and Mine Worker in the world should profit by its illustrations and descriptions of New Machinery, Processes, Discoveries and Record of Mining Events.

Every intelligent thinker in the land, in high or humble situation, who would avoid literary trash for genuine information, should SUBSCRIBE AT ONCE.

EVERY farmer in California should be a reader of the PACIFIC RURAL PRESS. It is an agricultural paper of great excellence. The subscription price is \$4 a year, but we have made arrangements with the publishers whereby we can furnish the RURAL PRESS and the Flag together for \$6 a year.—*Healdsburg Flag.*

California Farmers' Union.

The address to the farmers of the State, by the Committee of the California Farmers' Union, published in our last issue, has very naturally attracted the attention of the Press throughout the State, and been generally commented upon favorably.

The *Chronicle* says: The Executive Committee of the Farmers' Union have put forth an address to the farmers of California, urging organization and association for their mutual benefit and protection, especially the formation of Farmers' Clubs throughout the State, as a means of communication with each other and an interchange of views upon topics touching the agricultural interests of the State. It appears that the Farmers' Union is intended to be a sort of higher Senate—representatives to be sent to it from the different Clubs—a central and efficient power to organize and give directions to the efforts of the agricultural interests. This address promises that the Farmers' Union will guarantee that no one man or set of men, in 1873, or any time thereafter, will dictate the price of grain or other agricultural products, so as to rob honest labor of its hard-earned money. There can be no doubt of the necessity of such an organization as this, and we doubt not great good can be accomplished by a resolute combination of our intelligent and wealthy farmers.

The *Morning Call* says: A convention, composed of delegates from the Farmers' Clubs of the State, so far as they have yet been organized, assembled at Sacramento during the State Fair, and effected a permanent organization, to be known as the "California Farmers' Union." John Bidwell, of Butte County, was selected as its President. Other prominent gentlemen, equally interested in agriculture, were chosen to fill the remainder of the offices. This convention appointed Messrs. I. N. Hoag, G. G. Blanchard and A. T. Dewey a committee to prepare an address to the farmers on the subject of a closer organization. This address has been published, and is now before us. It urges upon them to form clubs in counties where none exist at the present time, to cooperate with the State Union, and adduces quite an array of arguments to prove that such a course will be greatly to the advantage of every person engaged in the cultivation of the soil.

The address will find an awakened attention to the subject it discusses among farmers throughout the entire State. The failure in their expectations this year—not their crops—has convinced them that so long as they act independent of each other, they have very little protection. With a grand central organization from which to derive information, advice and perhaps assistance in emergencies, the case would be very different. From every point of view the farmer can discover benefit in the matter proposed; and we shall expect to hear, by the time the next harvest season comes round, that the actual producer will in all instances derive the first and largest profits from his own labor.

The *Hollister Advance* comments thus: We have had an advance copy of an address, prepared by a new organization, entitled, "The California Farmers' Union," and directed to the farmers of this State. The experience of the past abundant harvest has at length roused a spirit amongst the farmers which we hope will not be quelled until an effective reform is enforced of the multifarious abuses affecting their profit and welfare. It is clear that any move in this direction must receive its force from the parties who suffer, and to be decisive and successful must receive their thorough support, and be backed by their combined and energetic action.

The purpose of the address is to promote an organization which will embrace all the farmers of the State who can act in concert for the promotion and protection of their own interests; and if they do not avail themselves of the opportunity now offered, they must, indeed, be very indifferent to their own prosperity. The Secretary of the Farmers' Union is Mr. I. N. Hoag, Sacramento.

What the *Auburn Herald* says: The address meets squarely and ably one of the most pressing and threatening dangers of California farmers, viz.: The monopolizing of the carrying trade of the coast by which Stanford, Friedlander & Co. rob the farmers of the whole coast of all their profits, and in fact reduce them to the condition of mere slaves to gigantic, greedy and intolerable combination. The farmers must combine and overthrow the political power of this unholy combination in the State or sink into eternal and perpetual slavery. The fruit, vine, mining and manufacturing interests of the State go hand in hand with the farmers in this fight. Two, three or more farmers' clubs should be formed in Placer county without further delay. These associations both county and state, will be powerless unless they can wrest the power of legislation from the combined monopolists who have and still control it. The Legislature can regulate the price of the carrying trade, and it must reduce the rates of fare and freight to furnish any remedy whatever. Stanford and Friedlander will but laugh at your struggle while they control the law-making power and can do what they please. Once let the producers seize on the power of legislation, and then they will have these impudent, haughty and grinding monopolists where they now are themselves. We shall give the main portion of the address in our next issue.

Southern District Fair.

The second annual Fair of the Southern District Agricultural Association, comprising the counties of Los Angeles, San Diego, Santa Barbara, San Bernardino and Kern, commenced on Wednesday, Nov. 13th, and continued for four days. From the Los Angeles *News* we collate as follows: On the first evening of the fair, at the opening of the hall of exhibition, before a large assemblage of people, L. J. Rose, Esq., President of the association, delivered an able and interesting address.

The Industrial Exhibition.

The display of native products this year in this department greatly excels that of last year's exhibition. There are perhaps less varieties of fruits, owing to the lateness of the season, but what are exhibited claim rare excellence.

The first stall to the right of the entrance represents one of Los Angeles' best orchards, that of Mr. O. W. Childs. On the stand are displayed thirty varieties of apples; twenty varieties of pears; three samples of Sardinian oranges; a sample of Mission grapes; several prodigious citrons; fine samples of Italian, American and Spanish chestnuts; English and black walnuts; Sicily, Chinese and Malaga lemons, brown Turkey figs; Chinese and California pumpkins.

The Chinese pumpkin is smaller in size than the California pumpkin, but contains much more nutriment. The rind is exceedingly thin, and the seeds are small and comparatively few. Of plants Mr. Childs exhibits nine varieties of Coeluses; four kinds of geraniums; a shadoc plant; Sicily lemons, limes, citrons (from seed and from graftings), plantain and banana.

To show the precocious character of the citron, a two year old plant from cutting is exhibited bearing fruit and blossom. Besides these there are Italian, Spanish and American chestnut plants, also bearing fruit.

Mr. Louis Messmer exhibits a Colossal Leaf plant.

Then comes a stall representing the semi-tropical nurseries of Mr. Thomas Garey, on San Pedro street. Among the plants exhibited are specimens of the dwarf Chinese mandarin orange tree, imported, eight months from graft, three feet high; two specimens of the Tumalo orange from Java, only 8 months from graft, yet standing 3 feet high and measuring at the base about 2½ inches in circumference. The Tumalo orange bears fruit of an enormous size and excellent quality.

A standard Chinese Mandarin orange plant, 8 months from the graft; stands 4½ feet high. A Sicily orange, 6 months from graft, is 4½ feet high and 3 inches in circumference at the stem. Four specimens of grafted orange trees, 8 months old and 5 feet high. One grafted orange tree 20 months old, 5 feet high, well branched. Two specimens of seedlings, five years old, 8 feet high. Two specimens of lime trees of the same age.

John Penfold, of El Monte, exhibits 5 samples of apples, two of dwarf box trees, a box of Australian Globe onions, telegraph cucumbers, late from England; long blood-beets, box of fine gherkins, cabbage-heads large and solid, a box of dried apples, a bale of hops of a superior quality, carrots and parsnips.

J. S. Glen, of San Bernardino, exhibits a jar of honey and prodigious specimens of apples; many of them measuring six inches across. R. Montague has apples and pears of numerous varieties.

H. A. Hawkins exhibits mammoth squashes, two boxes of home-raised and cured Malaga raisins, a bushel of corn and a sample of beans.

D. Lewis, of Los Angeles, exhibits a bale of hops.

[We regret that we cannot spare the space for the entire list of exhibitors and their superb exhibits of fruits, flowers and manufactured articles as given in the *News*. But we have given enough to show our readers the infinite variety of fine fruits that can be produced in perfection in that portion of California.—ED. PRESS.]

Exhibition of Stock.

Last year, although but a very short notice had been given beforehand by the Association that premiums would be awarded for the exhibition of superior stock, a goodly number of superior horses, horned cattle, etc., were brought together from various parts within the district. The prompt and liberal manner in which stockraisers then responded to the invitation of the Association, was regarded as being very gratifying, and gave rise to the most sanguine expectations on the part of those interested in this particular department that the exhibition this year would vie with, if not outshine, exhibitions of kindred character held in other parts of the State.

Those expectations have not been realized. Extensive additions were made to the out-buildings for the expected increased numbers of live stock. It now proves, however, unnecessary. Not only have the hopes of a finer display of stock this year than last been unrealized, but there is a marked falling off.

The truth is, the exhibition of stock for premiums is a complete failure. Scarcely one-half of the stalls, and none of the pens occupied by show animals last year, have similar tenants at present. What stock is on exhibition is of a

much inferior character to that exhibited at the fair of 1871.

The failure of the stock show is not owing to a scarcity of presentable animals in the District; in that respect, we are as far advanced as any of our northern neighbors. The complaints coming from stockraisers attribute the cause to another source—to the smallness of the premiums offered for well-bred and improved animals.

They complain, and with some degree of reason, that the bulk of the money awarded by the Association, has gone toward making up purses for races, which cannot fail finding their way into the pockets of a few gentlemen devoted to the improvement of fast stock.

And while such has been done for the encouragement of a very small branch of agricultural industry, the more important, such as the improvement of horned cattle and sheep, has been almost altogether neglected. It is on this account chiefly, that those who have the stock to show, have not deemed it worth their while to go to the expense of driving it to and from the Fair grounds.

In the Stalls.

In the stall nearest the grand stand in the stock yard, C. A. Coffman has a two year old bull named Ashland, on exhibition. The noble animal is a full blood cross between a Durham and an Ayrshire. He weighs, as a voucher posted on the side of the stall certifies, 1,700 pounds. When a calf, he was exhibited at the State and Southern District Fairs of 1870, and carried premiums away from both.

Being the only animal of the kind on exhibition at the present Fair, he cannot fail to carry off the premium offered for stock of his kind. Such would have been the result anyhow, as it is more than probable that there does not exist his equal in the District.

In an adjoining stall Messrs. White & Denman of Florence, have on exhibition five Spanish Merino rams, and ten ewes, varying from one to three years old each: One of the rams, a one year old, promises to carry at shearing time, not less than thirty pounds of wool of superlative texture. The stock has been imported from the best flocks in Vermont and Ohio. The firm have a flock of one hundred and sixty head of the same kind, all of which arrived here on the first of August.

In another stall, there are six beautiful thoroughbred Angora goats, with long white silken fleeces, exhibited by Mrs. M. Pleasants, of old Los Nietos.

Several stalls further on, contain blooded stock, but there is nothing to indicate the breed or owners. Exhibitors have shown considerable neglect in this respect, having brought their stock to the grounds, they ought to have posted notices on the stalls, giving those inspecting the animals all legitimate information regarding them.

Mr. W. G. Bartlett, of Los Nietos, exhibits Pirata, a graded iron-gray stallion. The pedigree of the animal shows that he was sired by Woodford by Billy Cheatham; dam, Gray Eagle, owned by Stephens Bros., of Solano county.

E. C. Parrish exhibits a family consisting of a mare and colt. Pedigree is not given.

J. S. Sawyer, of San Bernardino, has on exhibition a thoroughbred Angora goat.

C. M. Soper, of this city, exhibits a bay stallion named Young Vermont Morgan, a trotter, sired by Flying Morgan, the famous trotter, by Old Vermont Morgan; dam, a Hambletonian mare by R. M. Wheeler's Hambletonian horse Prince, by Green Mountain Messenger.

In the next stall, a fine bay mare, 18 months old, named Venus, is entered and exhibited by Hancock Johnston. Venus was sired by Young Morgan, dam Longlast, a Morgan mare.

In the new stalls built south of the grand stand, there are seven lots of Down sheep exhibited by R. Burnett.

John Angelo, of Compton, exhibits Monarch, a young bay stallion; sired by old Monarch; dam a thoroughbred mare, of what stock it is not said.

All of the pens and the remainder of the stalls are empty.

From a careful perusal of the proceedings, by us of the *RURAL PRESS*, it would appear that during each day of the fair, the time was mainly devoted to the examination of stock presented for premium, and to trials of speed among the fast horses of the District; a feature of the same being the lady equestrian performance, in which the best rider was to receive a premium of an elegant gold watch valued at \$100; and the second a fine side-saddle valued at \$50. The novelty of the competition undoubtedly gave it an interest not possessed by any other part of the entire proceedings.

From all we can gather in relation to the progress and final termination of the Fair, it was a complete success, fully meeting the expectations of all concerned, and a credit to the Association.

It is pleasant to note by their advertisement in our columns that the great music store of Oliver Ditson & Co., Boston, although exactly on the edge of the burnt district, entirely escaped injury.

HORSES CHEWING THEIR BRIDLES.—To prevent horses from chewing their bridles, mix bitter aloes in a solution of gum-arabic. Rub it on the part of the bridle that the horse is in the habit of chewing, and he will cease depre-

What Apple Trees to Plant.

EDITORS PRESS:—In reply to an article in the Press of Nov. 23d, entitled, "The Best Twenty Apples," permit me to submit the following list as worthy of culture, and as ripening successively throughout the apple season:

It should be remarked that parties cultivating apples for their own use solely, should avoid planting equally of the different varieties from the fact that nearly, if not all, of our very early varieties are very much inferior to our late Summer, Fall and Winter varieties in flavor and keeping qualities. Let, therefore, more than half of your little orchard consist of the best keepers of the winter sorts.

To begin I will suppose you possess an acre which it is your desire to devote to apples.

At 18 feet apart each way this will require 135 trees.

1st, Early Harvest—Our earliest apple but a shy bearer in this country. The fruit generally at the ends of the limbs. Skin smooth, slightly dotted with white, bright straw color when fully ripe, June 20th to July 20th. Plant 5 trees.

2d, Red Astrachan—Fruit of good size, smooth and fair, skin of deep crimson inclined to greenish yellow in the shade, flavor inclined to acidity, otherwise an excellent eating as well as cooking apple. Tree a vigorous grower and very prolific bearer. Middle of July to middle of August. Plant 5 trees.

3d, Caroline June—Fruit below the medium size, somewhat conical in shape. Skin smooth, deep red. Tree vigorous, prolific. It ripens just after the Early Harvest. Plant 5 trees.

4th, Early Strawberry—Smooth, and finely striped, skin stained with bright and dark red, on a light yellow ground. Flesh nearly white, brisk, subacid, sprightly, aromatic. July and August. It is well worthy of a place among your collection of early Summer apples. Plant 5 trees.

5th, Gravenstein—Fruit large, a little flattened. Skin greenish yellow at first, eventually becoming bright, yellow dashed and penciled with deep red and orange. Of good flavor. September. Plant 5 trees.

6th, Fall Pippin—This apple is so well known that I deem any description unnecessary. Suffice it to say that it very much resembles the green Newtown Pippin in form and color as well as in flavor. It ripens September and October, and its many commendable qualities prompt me to recommend the planting of 10 trees.

7th, Rhode Island Greening—Tree a good bearer here. The flavor and general character of this apple in this State is much inferior to that of the same apple in the East; yet it is possessed of enough good qualities to allow of its occupying a position among our collections. It is a Fall apple on this Coast. You will not regret planting 5 trees.

8th, Yellow Bellflower—One of the most excellent and commendable of late Fall apples. Plant 5 trees.

9th, Esopus Spitzenberg.—Throughout the whole of New York this is considered the first of apples. Nor has its glory diminished one particle from its being introduced to the soils of the Pacific Coast.

Downing describes it thus: Fruit large, oblong, tapering roundly to the eye. Skin smooth, nearly covered with rich, lively red, dotted with distinct yellowish russet dots. On the shaded side is a yellowish ground, with streaks and broken stripes of red. Flesh yellow, rather firm, crisp, juicy, with a delicious rich, brisk flavor. It keeps in this country to about Christmas. Plant 8 trees.

10th, Swaar—Fruit large, greenish yellow, distinctly dotted. A good apple, November to January. Plant 8 trees.

The other 10 best varieties of early and late winter apples—owing to the fact that I am occupying too great a share of your valuable space—I shall be obliged to name, without descriptive detail, only remarking that they may be relied upon as worthy of your attention, and trusting wholly to the confidence of the reader in my integrity and the disinterestedness of my purpose.

11th, Baldwin—(red), 7 trees.
12th, Rome Beauty—(red), 7 trees.
13th, Wagner—(red), 7 trees.
14th, Jannetting—(red), 7 trees.
15th, Smith's Cider—(striped), 7 trees.
16th, Wine Sap—5 trees.
White Winter Pearmain—8 trees.
Newtown Pippin—12 trees.
Roxbury Russet—7 trees.

And last, 4 trees of Siberian Crab. The above list comprises an assortment which in my judgment can scarcely be improved upon, they having each been tried with the most satisfactory results.

The ideas here given in regard to the distributions of the several varieties are entirely my own, and others should be governed in that matter in accordance with the dictates of his or her own particular fancy. Should the readers of the Press wish to know something about how to prepare their soil, how to "lay out" an orchard, and how to transplant trees properly, and on what kind of soil to do it with the best success; what size a tree should be, what age, how to prune, etc., I will tell them "what I know," etc., whenever its worthy editors conceive such to be their wishes.

AETILIUS KAMP.

San José, Nov. 23, 1872.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from the first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Nov. 28.
FLOUR—We quote prices as follows: Superfine, \$3.75@4.00; Extra, in sacks, of 196 lbs. \$5.12½@5.25; Oregon brands, \$4.75 @ \$5.00 in sacks of 196 lbs.

WHEAT—Is firm. The range for shipping grades is \$1.57½@1.62½. Choice milling is in demand at \$1.70 per 100 pounds.

The latest Liverpool market quotations to Associated Press, dated Nov. 26th, are: average California wheat, 12s 6d@12s 8d; California Club wheat, 13s. 3d.@13d. 6d.

BARLEY—The market is firm, Bay, \$1.40 @1.45; Coast, \$1.27½ per 100 pounds.

OATS—Market is firm. Ordinary to choice jobbing at \$1.00@1.21½ per 100 lbs.

CORN—New crop, \$1.25@1.35 per 100 lbs.

CORNMEAL—Is quotable at \$1.75@2.00 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$2.00@2.25 per 100 lbs.

RYE—Is quiet at \$2.00@2.25 per 100 lbs.

STRAW—Quotable at \$7.25@8.50 per ton for cargo lots.

BRAN—Price has advanced to \$27.50 per ton from the mill.

MIDDINGS—For feed, are selling at \$32.50 per ton from mill.

OIL CAKE MEAL—Is steady at \$30 per ton from the mill.

HAY—Receipts have been free during the week. Quotable at close at \$14@22.00 ordinary to choice.

HONEY—Best Los Angeles and San Diego sells at 20¢@23¢; other kinds 10¢@15¢ in comb; strained, 10¢@15¢ per lb.

BEESWAX—Quiet at 35¢@37½¢ per lb.

POTATOES—The market is quite active, but at low prices. Bodega, \$1.12½, Monterey, \$1.20@1.25; Petaluma, \$1@1.10. Sales of different kinds from \$1.25 to \$1.50. Carolina, 62½¢@75¢ per 100 lbs.

ONIONS—Quotable at \$3.75 per 100 lbs. for choice.

WOOL—Sales of Fall, at 12¢@15¢ for burry, and 18¢@20¢ for clean; 20¢@22½¢ for choice.

The following is from the Boston Shipping List of November 16th: "The advance in prices since the fire has been about 10¢ on fleece and pulled, 8¢@10¢ on California and 5¢@7¢ for Cape and Australia. So far as prices are concerned there is, in fact, no fixed value. Spring California, that has been selling from 40¢@45¢, is held at 50¢@55¢. Montevideo is held at 55¢, that could have been bought before the fire at 42¢@43¢. Cape is not offered under 42¢, and is generally held at 45¢ and upwards, 44¢ having been refused for round lots; and it will be some weeks before we have a sufficient stock of fleece, pulled and California on which to base a price. The advance, however, on all grades may be placed at from 5¢@10¢ per lb, and we are satisfied that this advance will be maintained, and later in the season still higher prices. The amount of foreign Wool in bond in New York is 17,000,000 lbs, and in Boston 5,000,000 lbs. Considerable of the Wool is Cape, with a shrinkage of 75 per cent. on the average, so that the above amount would be reduced to comparatively small figures when reduced to clean Wool.

TALLOW—Good quality of Cal. 8¢@8½¢.

SEEDS—Flax 3¢; Canary, 4¢@5¢. Mustard, 1½¢@2¢ for white, and 2¢@3¢ per lb. for brown.

PROVISIONS—Following are jobbing quotations: California Bacon 12½¢@15¢ per lb.; Eastern do. 12¢@13¢ for heavy and 14¢@15¢ for sugar-cured Breakfast; California Hams 15¢@17¢; Eastern do. 18¢@21¢; California Smoked Beef, 12¢@14¢ per lb.

BEANS—The following are jobbing rates: Pea \$3.25@3.50; Small White \$3.25; Small Butter, \$3.25; large \$3.50; Bayo, \$3.12½@3.25; Pink, \$3.25 per ctl.

NUTS—California Almonds, 8¢@10¢ for hard and 18¢@25¢ for soft shell; Peanuts, 5¢@8¢ Pecan, 20¢ per lb.; Hickory, 12¢; Brazil, 16¢. Chili Walnuts, 12½¢; French Almonds, 25¢ @30¢; Princess Almonds, 35¢@40¢; Filberts, 18¢; Cocoanuts, \$10.00@12.00 per 100.

HOPS—California are dull and nominal at 30¢@35¢ per lb.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7½¢@8¢ per lb.; do. 2d quality 6¢@7¢ per lb.; do. 3d do. 4½¢@5½¢.

VEAL—Quotable at 7¢@12½¢.

LAMB—Scarce at 9¢.

MUTTON—Quiet at 6¢@6½¢ per lb.

PORK—Undressed grain-fed is quotable at 1½¢@6¢; dressed, grain-fed, 8¢@8½¢ per lb.

POULTRY—Live Turkeys, 21¢@23¢ per lb.; Hens \$7.50@8.50; Roosters, \$7.00@8.00 per dozen; Chickens, \$5.50@6.50; Ducks, tame, \$9.50@11.00 per doz.; Geese, tame, \$13½¢@16½¢ per dozen.

WILD GAME—Quail, \$2.00; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, \$75¢; Mallard Ducks, \$4.00; Teal, \$2.00@3.00; Geese, \$3@4 per doz; English Snipe, \$2.00; small, 75¢@1; Venison, 9¢ per lb.

DAIRY PRODUCTS—Fresh California Butter is quotable at 60¢@65¢ for choice, and 50¢@55¢ for common kinds. New firkin is quotable at 25¢@35¢; pickled, 32½¢@37½¢; New York, 20¢@35¢; Western, 15¢@20¢.

CHEESE—New California, 10¢@15¢; Eastern at 14¢@17¢ per lb.

Eggs—California fresh, are sold at 55¢@57½¢; Oregon, 40¢@45¢; Eastern, 30¢@35¢ per doz.
LARD—California 12¢@13¢. Eastern in cases 13¢@13½¢; do in tins, 11½¢@12¢; in kegs, 12¢@12½¢ per lb.

FRUIT MARKET.			
Tahiti, Or. per 100	60	Plums, do. 100	10 @ 12½
Limes, do. 100	10 @ 10	Figs, do. 100	6 @ 8
Av. lemons, M. 5	6	Strawberries, do. 15	18
Malaga do. bx. 10	12	Grapes, Mission, 2½	4
Bananas, do. bnch 20	10 @ 10	Rose of Peru, 4	5
Pineapples, do. dz	6	Black Hamburg, 4	5
Apples, Eatg bx 100	75	Black Prince, 4	5
Cooking, 100	50	Muscad of Alfr	4 @ 5
Pears, Eating, 100	50	Flamingo, 7	10
Cooking, 100	50	Black Morocco, 10	12½
Quinces, bx. 200	20 @ 20	Wine Grapes, 1¼	1¼
Pomegranates, 100	60		

DRIED FRUIT.			
Apples, do. 100	7	Pitted, do. 100	18 @ 22½
Pears, do. 100	8 @ 10	Raisins, do. 100	10 @ 12½
Peaches, do. 100	8 @ 10	Black Figs, do. 100	8 @ 12½
Apricots, do. 100	8 @ 10	White, do. 100	15 @ 20
Plums, do. 100	6 @ 10		

VEGETABLES.			
Cabbage, do. 100	5 @ 6	Cucumbers, do. box. 1	50 @ 200
Garlic, do. 100	5 @ 6	Summer Squash, do. box	—
Rhubarb, do. 100	5 @ 6	Tomatoes, river, do. box. 5	125 @ 125
Green Peas, do. 100	5 @ 6	Sprink Beans, do. 100	7 @ 10
Sweet Peas, do. 100	5 @ 6	Lima Beans, do. 100	3½ @ 4
Green Corn, do. 100	15 @ 25	Egg Plant, do. 100	—
Marrowfat Squash, do. 100	10 @ 20	Peppers, do. 100	3 @ 5
Artichokes, do. 100	4 @ 6	Okra, do. 100	6 @ 7

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING—There is very little demand for Grain sacks. English Standard Wheat bags, hand sewed, 15½¢@15½¢; Flour sacks 8½¢@9½¢ for qrs. and 13½¢@13½¢ for hlfs. Standard Gunnies 17½¢; Wool 70¢@75¢; Barley sacks 16¢@18¢; Hessians, 40-inch goods, 12¢@12½¢ per yard.

BUILDING AND FENCING MATERIALS—

Dealers pay for cargoes of Oregon as follows: Rough \$19@20; do. surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35@40; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, 2 M	22 50	Beaded floor, ref. M.	22 50
Rough refuse, 2 M.	16 00	Half-inch Siding, M.	22 50
Rough clear, 2 M.	32 50	Half-inch Siding, R.	16 00
Rough clear refuse, 2 M.	22 50	Half-inch Surfaced, M.	25 00
Rustic, 2 M.	35 00	Half-inch Surf. R.	18 00
Rustic refuse, 2 M.	24 00	Half-inch Battens, M.	22 50
Surfaced, 2 M.	32 50	Pickets, rough, 2 M.	14 00
Surfaced refuse, 2 M.	22 50	Pickets, pntd. 2 M.	16 00
Flooring, 2 M.	30 00	Pickets, fancy, pntd. 2	50
Flooring refuse, 2 M.	20 00	Shingles, 2 M.	3 00
Beaded flooring, 2 M.	32 50		

The last scale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

PUGET SOUND PINE.			
Rough, 2 M.	25 00	Flooring, 2d qual'y, M.	30 00
Flooring and Step, 2 M.	37 50	Laths, 2 M.	3 50
Flooring, narrow, 40 00	Furring, 2 M.	lineal ft.	1c

REDWOOD.			
Rough, 2 M.	25 00	Tongued & Grooved, 2 M.	40 00
Rough refuse, 2 M.	20 00	surfaced, 2 M.	40 00
Rough Pickets, 2 M.	18 00	Do do refuse 2 M.	27 50
Rough Pickets, p'd. 2 M.	20 00	Half-inch surfaced, M.	40 00
Fancy Pickets, 2 M.	30 00	Rustic 2 M.	42 50
Siding, 2 M.	27 50	Battens 2 M.	lineal foot. 1c
		Shingles 2 M.	3 50

Sugar Pine is jobbing at \$50@60 for clear, \$35@45 for second quality, and \$28@30 for third quality.

COFFEE—Costa Rica 19¢@19½¢; Guatemala, 18¢. Java 23¢; Manilla, 18½¢; Rio 19½¢@20¢; Ground Coffee in cases 30¢; Chicory, 10¢.

SPICES—Allspice 14¢@15¢. Cloves, 23¢. Cassia 35¢@36¢. Nutmegs \$1.00@1.10. Whole Pepper 19¢@20¢. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15¢ per lb.

FISH—We quote Pacific Dry Cod new, in bundles at 6¢; Salmon in bbls. \$5.00@6.00, hf do. \$3.50@4.50; Case Salmon, \$3.00 for 2½-lb. cans, \$2.50 for 2-lb. cans, and \$2.00 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85¢ per box; Mackerel, No. 1 hf bbls, \$7.50@8.00; extra, \$9.00@10.00; in kits No. 1 \$2.00@2.25 Mess, \$2.50; Extra mess, \$3.00.

NAILS—Quotable at \$6.00@9.00 for assorted sizes.

PAINTS—Standard White Lead 10¢@12½¢; Whitening, 2¢; Chalk 2½¢; Paris White 3¢; Ochre, 3½¢; Venetian Red, 3¢; Red lead, 11½¢; Litharge, 11¢ per lb.

RICE—Sales of China No. 1 at 5½¢@6½¢, and No. 2 at 5¢@5½¢ per lb.; Japan, 5½¢; Patna, 5½¢@7¢; Table, 9¢@10¢ per lb. for choice.

SOAP—The prices for local brands are 5¢@10¢, and Castile, 10¢@12¢ per lb.

SUGAR—We quote Cal. Cube at 12¢; Circle A Crushed, 12¢, and Granulated 11½¢; Golden C. 10¢; Extra Golden C. 10½¢; Hawaiian 7½¢@9½¢, as extremes per lb.

SYRUP—Prices may be given as follows: 32½¢ in bbls, 35¢ in hf bbls, and 40¢ in kegs.

SALT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

TEA—We quote as follows for bulk descriptions: Oolong—Canton, 19¢@25¢; Amoy, 28¢@50¢; Formosa, 40¢@90¢; Imperial—Canton, 25¢@35¢; Pingsuey, 50¢@75¢; Moyune, 60¢@1. Gunpowder—Canton, 30¢@42½¢; Pingsuey, 50¢@90¢; Moyune, 60¢@1.30. Young Hyson—Canton, 30¢@40¢; Pingsuey, 40¢@70¢; Moyune, 65¢@1. Japan—Half chests, bulk, 30¢@75¢; lacquered bxs, 4½¢ and 5 lbs each, 45¢@67¢; same 3-lbs, 45¢@90¢; plain 4½-lb bxs, 35¢@65¢; 1-lb and ½-lb papers, 30¢@55¢ per lb.

MISCELLANEOUS.			
Butter, Cal. pr lb.	60¢@75	Do. Snp. do. 4	50¢@50
Do. Or. do. 100	20 @ 20	Do. Meat, do. 2	50¢@50
Honey, pr lb.	20 @ 20	Lard, pr lb.	18 @ 20
Cheese, pr lb.	20 @ 25	Sugar, cr, 7½	100
Swiss Cheese, pr lb	50	Brown do, 8	1 00
Eggs, Cal. pr doz.	65 @ 70	B-ct pr lb.	12 @ 12
Do. Oregon pr dz	—	M-ple, pr lb.	30
Flour, Ez. pr bbl. 55	25 @ 30		

San Francisco Retail Market Rates.

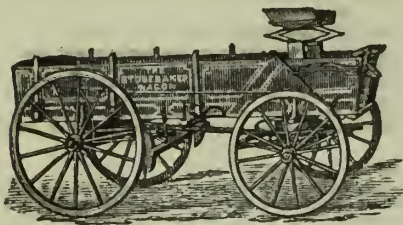
THURSDAY NOON, Nov. 28, 1872.

FRUITS, VEGETABLES, ETC.			
Apples, pr lb.	5 @ 6	Carrots, do. doz.	15 @ 25
Pears, per lb.	5 @ 6	Celery, do. doz.	75 @ 75
Grapes, do. 100	6 @ 15	Cucumbers, do. 100	25 @ 25
Apricots, do. 100	—	Tomatoes, do. 100	4 @ 5
Pine Apples, each 10	—	Cress, do. doz bun	2 @ 5
Bananas, do. 100	75 @ 75	Berrying, do. 100	25 @ 25
Canteleaves, do. 100	—	Garlic, do. 100	8 @ 10
Watermelons, do. 100	—	Green Peas, do. 100	5 @ 6
Cal. Walnuts, do. 100	25 @ 25	Green Corn, doz.	— @ 37
Cranberries, do. 75	10 @ 10	Lettuce, do. doz.	— @ 25
Strawberries, do. 75	10 @ 10	Mushrooms, do. 100	50 @ 75
Raspberries, do. 100	35 @ 35	Horseradish, do. 15	50 @ 50
Gooseberries, do. 100	—	Okra, dried, do. 100	50 @ 20
Cherries, do. 100	—	do fresh, do. 100	— @ 3
Oranges, do. doz.	75 @ 75	Pumpkins, do. 2	3 @ 3
Limes, per doz.	25 @ 25	Parsnips, doz.	— @ 25
Figs, fresh, do. 100	25 @ 25	Pickles, do. doz.	50 @ 25
Asparagus, wh. 50	5 @ 8	Radishes, doz.	— @ 25
Artichokes, doz. 75	5 @ 25	Summer Squash 3	— @ 25
Russell's sprts, 5	8 @ 8	Marrowfat, do.	— @ 3
Beets, do. doz.	25 @ 25	Lubard, do.	— @ 8
Potatoes, New, do. 5	3 @ 4	Fry Lima, shl.	8 @ 8
Potatoes, sweet, 3	10 @ 10	Spinage, do. bakt.	25 @ 50
Broccoli, do. doz. 1.00	50 @ 50	Salsify, do. bunch 10	25 @ 25
Cauliflower, +. 1.00	50 @ 50	Turpins, do. doz.	25 @ 25
Cabbage, do. doz. 75	60 @ 60		

POULTRY, GAME, FISH, MEATS, ETC.			
Chickens, apiece 75	10 @ 10	Whittaker's, do.	— @ 25
Turkeys, do. 100	— @ 30	Johnson's Or.	— @ 25
Ducks, wild, p. 37½	100 @ 100	Flounder, do. 100	37½ @ 37½
Turkey, do. 100	— @ 25	Salmon, do. 100	25 @ 25
Teal, do. 100	— @ 30	Sturgeon, do. 100	25 @ 25
Geese, wild, pair 100	— @ 30	Pickled, do. 100	6 @ 6
Tame, pair, 300	100 @ 100	Rock Cod, do. 100	12½ @ 15
Snipe, do. doz. 1.50	200 @ 200	Cod Fish, dry, lb.	12½ @ 15
English, do. 100	— @ 25	Perch, a water, lb.	10 @ 12
Quails, do. doz. 2.25	— @ 25	Dry Cal. Hides, 17	18
Pigeons, dom. do. 2	50 @ 50	Lake Big Trout, 30	37
Wild, do. 100	— @ 25	Smelts, large, do. 100	18 @ 12
Hares, each 37½	50 @ 50	Small do. 100	12 @ 12
Rabbits, tame, 25	75 @ 75	Silver Smelts, 20	— @ 25
Wild, do. doz. 1.50	200 @ 200	Soles, do. 100	37½ @ 37½
Beef, tnd. do. 100	— @ 15	Herron, do. 100	4 @ 4
Corned, do. 100	8 @ 10	Sm'kd, per 100	— @ 1 00
Smoked, do. 100	15 @ 15	Tomcod, do. 100	18 @ 20
Pork, rib, etc. 10	15 @ 15	Terrapin, do. doz. 60	67 @ 60
Chops, do. 100	15 @ 15	Mackerel, p'k, ea. 15	25 @ 25
Veal, do. 100	15 @ 20	do fresh, do. 100	— @ 25
Cutlet, do. 100	15 @ 20	Sau. Hags, do. 100	25 @ 25
Mutton chops, 12	15 @ 15	Halibut, do. 100	45 @ 45
Leg, do. 100	12½ @ 15	Sturgeon, do. 100	8 @ 8
Lamb, do. 100	12 @ 12	Oysters, do. 100	100 @ 125
Tongues, beef, ea. 75	— @ 12½	Cheep, do. doz. 1.50	200 @ 200
Tongue, pig, ea. 18	— @ 18	Crabs, do. doz. 1.00	— @ 25
Bacon, Cal. do. 18	— @ 18	Soft Shell, do. 100	— @ 37½
Oregon, do. 18	— @ 20	Shrimps, do. 100	10 @ 10
Hams, Cal. do. 16	— @ 18	Prawns, do. 100	— @ 25
Hams, Cross' s o	— @ 25	Sardines, do. 100	8 @ 8
Choice D'field	— @ 25		

POULTRY, GAME, FISH, MEATS, ETC.				
Chickens, apiece	75	@ 30	Whittaker's Or.	@ 21
Turkeys, lb.	@	30	Johnson's Or.	@ 21
Ducks, wild, pr	37	@ 31	Flounder, lb.	@ 37
Tame, do.....	87	@ 01	Salmon, lb.	@ 21
Teal, lb doz.	3 00	@	Smoked, new,*	25 @
Geese, wild, pair	00	@ 04	Pickled, lb.	6 @
Tame, pair	3 00	@ 04	Rock Cod, lb.	12 @
Snipe, lb doz.	1 50	@ 02	Cod Fish, dry, lb	12 @

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,

They Have no Peer.

IRON AXLE,
THIMBLE SKEIN,
HEADER AND
SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on
hand and sold for \$100 to \$165.

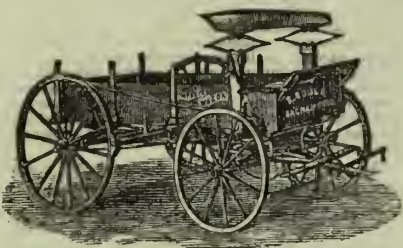
Having established a MANUFACTORY to build WAGONS,
BEDS, BRAKES and SEATS, I am better prepared than
ever to furnish

Just the Kinds of Wagons Needed,

As I make a SPECIALTY of the WAGON TRADE.

The attention of DRIVERS is especially requested.
Send for CIRCULAR and PRICE LIST.

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FIRST PREMIUM AWARDED at the State Fair of
1870; also First Premium at Mechanics' Fair, San Fran-
cisco, 1871; and Silver Medal and First Premium for
best Farm Wagon, and First Premium for the best im-
proved Thimble Skein at State Fair, 1871. Also State
Fair GOLD MEDAL for 1871.

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Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these
Plows, are entitled to preference over any other Plow
in use. They are made of the best material, and every
Plow warranted. They are of light draught, easily
adapted to any depth, and are very easily handled.
They will plow any kind of soil, and leave the ground
in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State
Fair, at the Northern District Fair, at the Upper Sacra-
mento Valley Fair, and the State Agricultural Society
Premium of \$40 for the best Gang Plow, after a fair test
and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,

Took the First Premium over all competitors at the
State Fair, 1871. It furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness,
being made entirely of iron by experienced workmen,
of the best material. Over three hundred are now in use,
and all have given entire satisfaction.

Manufactured and for sale by the

SWEEPSTAKE PLOW CO.,

At SAN LEANDRO, CAL., under the personal superin-
tendence of the Patentee, F. A. HILL,

And also by most leading Agricultural Dealers in the
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MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing
Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who
have been long in the business and know what is re-
quired in the construction of Gang Plows. It is quickly
adjusted. Sufficient play is given so that the tongue will
pass over cradle knolls without changing the working
position of the shares. It is so constructed that the
wheels themselves govern the action of the Plow cor-
rectly. It has various points of superiority, and can be
relied upon as the Best and Most Desirable Gang Plow
in the world. Send for circular to

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AMERICAN, ENGLISH AND GENERAL HARDWARE, AND CUTLERY.

Wostenholme's Pocket Cutlery,

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THE IMPROVED "PACIFIC RAILROAD" and "MONITOR" GANG PLOWS.

These Plows are Deep Tillers, and are just what the farmers need. They can be run by a small boy, as the
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purchasing.

"WORLD" MOWERS AND REAPERS,

"TORNADO" THRESHERS,

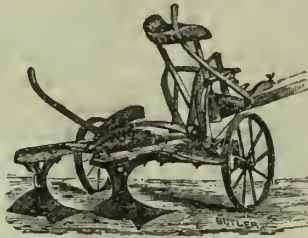
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HYDRAULIC RAMS, ETC.

Orders respectfully solicited. Catalogues and prices furnished on application.

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Ready's Patent Gang Plow.



This Plow was awarded the First Premium and Gold
Medal at the great Plowing Match at the State Fair, 1871.
Fifteen Gangs entered, including the Eureka, American
Chief, Sweepstake, and others of notoriety. It has
Wrought Iron Beams, Iron Wheels, Cast Steel Moulds
and Shears. It is neat, simple, strong and durable,
and warranted to run light, and lift out of the ground
easier than any other Gang known to the trade. Extras
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BILZ'S PLOW CLEVIS.

A Real and Substantial Improvement.

This Clevis is attached to the plow-beam in the usual
manner. At the front part of this clevis is a link
attached to an upright slide by means of a swivel joint.
The doubletrees, being attached to this link, always
remain in a horizontal position.

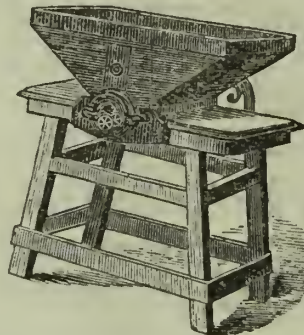
The slide to which the swivel link is attached can be
raised or lowered so as to give the plow any desired
depth.

The Clevis is made of the best malleable and wrought
iron, making it very strong and durable. A sample will
be sent to any one on receipt of three dollars.

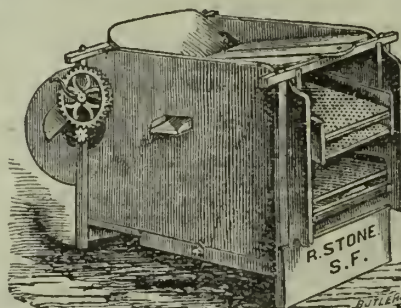
For further particulars address

WIESTER & CO.,

17 New Montgomery street, San Francisco.

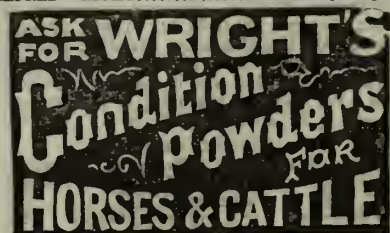
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CHALLENGE FEED MILL

For Farm use and Custom work. The only Practica
Farm Feed Mill ever invented. Can be used with from one
to eight-horse power, and grinds from 250 lbs. to one ton of
barley per hour. Price of Mills from \$75 to \$100, according
to size. Adapted to Wind, Water, Steam, or Horse Power.
The grinding surface is adjustable, and can be replaced in
fifteen minutes at an expense of one dollar to one dollar and
a quarter. Over 3,000 now in use. Every Mill warranted to
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THE PATENT
Novelty Mill and Grain Separator

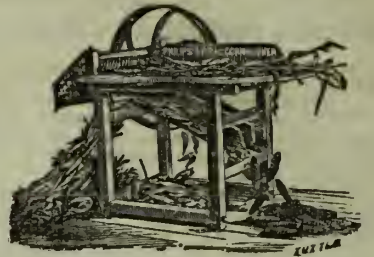
Is one of the greatest improvements of the age for
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essential qualities of a first-class Fanning Mill. It also
far exceeds anything that has been invented for the sepa-
ration of grain. It has been thoroughly tested on all
the different kinds of Mixed Grain. It takes out blus-
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IMPROVED CORN HUSKER.



The great extent of the Indian corn crop throughout
the United States, makes of the utmost importance any
invention by which the labor incurred in its production
may be lessened.

According to the census reports, the annual yield of
Indian corn in California, several years since, was
1,000,000 bushels. It is probably twice that amount at
the present time, and the introduction of corn huskers
will be of great advantage to our farmers.

This machine has taken no less than eight first pre-
miums this season, at fairs in the Eastern States. At
the fair at Rochester, N. Y., it was awarded the first
premium of \$10, besides a \$50 premium for the most
useful invention, relating to agriculture, patented dur-
ing the last three years.

The larger machines, for husking from the stalks,
can be conveniently run by any of the ordinary horse-
powers. The machine does its work thoroughly, strip-
ping the husks and silk from every ear and nubbin,
whether it be large or small, hard or soft. The stalks
are delivered in a crushed state and in a much better
condition for fodder than when left solid, and they also
rot quicker in the manure heap. The husks are deliv-
ered in so good condition as to be worth from \$30 to \$70
per ton for industrial purposes in some Eastern places.

An ordinary two-horse power used for thrashing will
drive the machine, and with the hand machine two
men can husk 400 bushels per day.

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Merchants and Farmers,

Examine our COPPER RIVETED
HORSE COLLARS. Pat. Nov., 1861.
Adopted by U. S. Army.
BEST IN USE. 18,000 SOLD.
ALL GRADES. HEAVY & LIGHT.
No complaints. No ripping.
No repairing. Examine for
Don't believe prejud'd parties
FOR SALE BY ALL DEALERS

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Dealers in HARNESS, SADDLERY, Leather, etc.
Liberal discount to the Trade. 16v4-3m

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Just above Montgomery.....SAN FRANCISCO

F. SCHOENEMAN,

(Successor to Barton & Rutter.)

JUST RECEIVED, an assortment of the new

Needle Sporting Gun.

Cannot be had anywhere else, as I am the Agent.
Also, fine English, German and American Sporting
Guns, all the latest patterns of RIFLES, and all kinds
of Ammunition. A splendid assortment of

FISHING TACKLE,

And Sporting Apparatus of every description.

Pocket Cutlery of the best makers.

15v4-3m F. SCHOENEMAN.

WILCOX'S
IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in al
respects the most Economical of all
Steam Pumps. Uses the same steam
twice instead of once. Any person can
run it. They are used on the Central
and Western Pacific R.R. from Oakland
to Ogden. They are used for Water
Works, Mining, Irrigation, and all other ordinary pump-
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NATIONAL DRY HOP YEAST,

Manufactured at S'neca Falls,
N. Y. The attention of BREW-
ERS and FAMILIES is called to
this Yeast as the most reliable and
uniform article ever offered to the
trade—being purely vegetable, wholesome and nutritious,
and bearing the highest degree of perfection in its prepa-
ration. Its popularity is already manifest from the rapidly
increasing demand since its recent introduction into this
market. We solicit a trial, as the most satisfactory evi-
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LIBERTY NURSERIES,
Petaluma.

I offer at moderate prices a general assortment of



FRUIT, SHADE AND EVERGREEN TREES, AND SHRUBS.

Deciduous Flowering Shrubs, Roses, Etc.

Green House and Bedding Plants in great variety.

Send for Descriptive Catalogue and Price List.

Address W. H. PEPPER,
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SEEDS & PLANTS

Wholesale or Retail.

Vegetable, Field and Flower Seeds,

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FRESH SEEDS OF PALMS AND BLUE GUM TREES,
Etc., Etc.Pure KENTUCKY BLUE GRASS, RED TOP, RYE GRASSES,
ORCHARD GRASS, TIMOTHY, ALFALFA, WHITE,
AND RED CLOVER SEED,
Mesquit Grass Seed.Hyacinths, Tulips, Crocus, Lilies, fine clumps of Lily
of the Valley, new Gladiolus, Etc.
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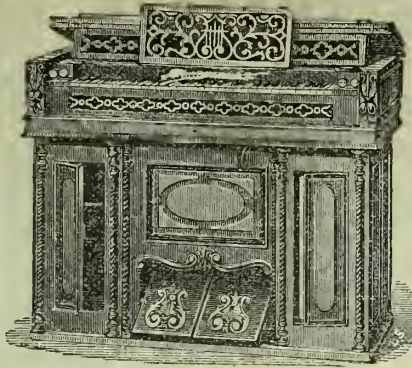
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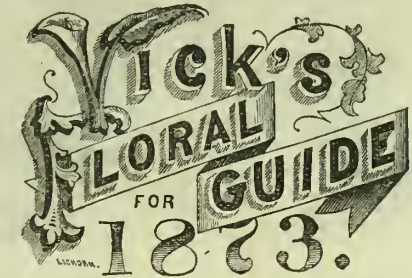
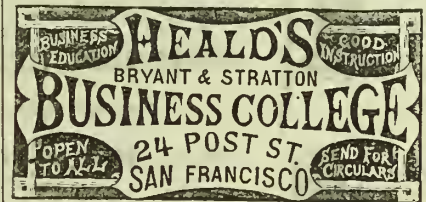
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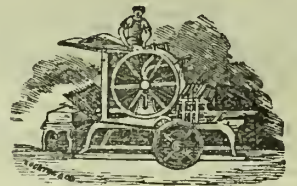
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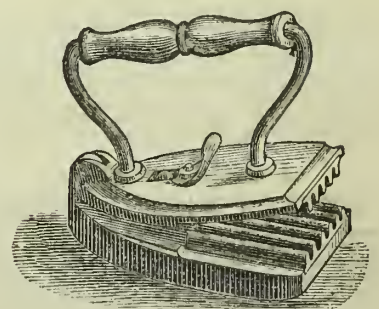
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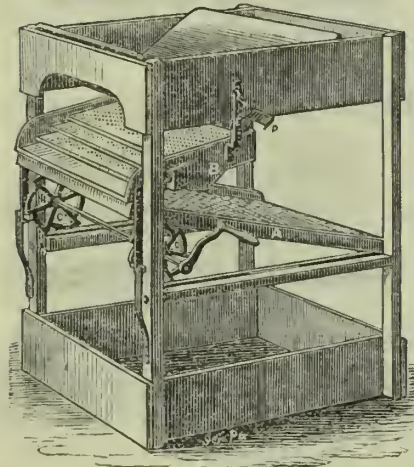
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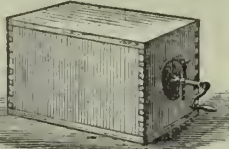
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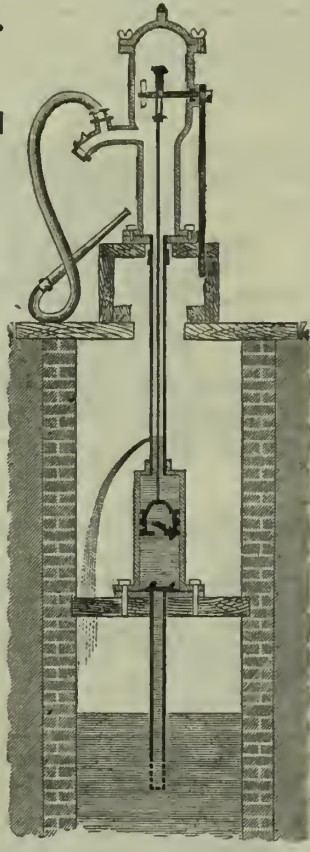
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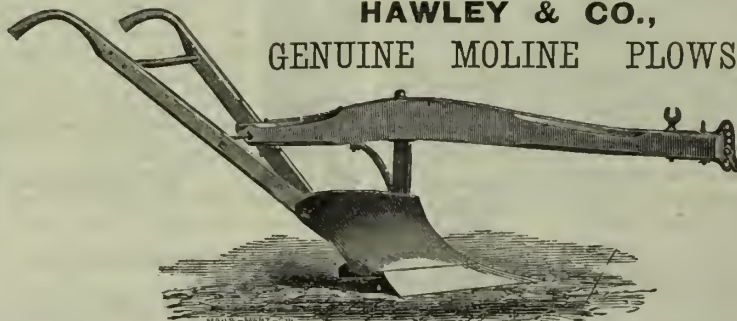
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Volume IV.]

SAN FRANCISCO, SATURDAY, DECEMBER 7, 1872.

[Number 23.]

California Poppy.—(*Eschscholtzia Californica*.)

Of the many beautiful native flowers that adorn the plains of California, there is none more brilliant and showy, and no more general favorite than the California poppy. It grows in the greatest profusion. In portions of the San Joaquin Valley, during the month of April, its rich blooms cover the ground so densely as to form a continuous carpet over acres of land, intermingled with various white, yellow, blue, pink and purple flowers, and under the mid-day sun, its brilliant orange color actually dazzles the eye.

This is particularly true of a species of our poppy which is frequently called the Orange Flower, on account of its rich saffron color. For we must remember that there are no less than five different kinds of this member of the poppy family in California, all of which are found in San Joaquin Valley. Of these the flowers of three are yellow; one, a deep orange or saffron; and the fifth, a pure white.

We have promised that in describing our wild flowers we shall give not only their common names, but also their botanical or systematic ones. The latter are so called because they reduce botany, or the study of plants, to a system, and science means nothing more than knowledge reduced to a system.

The systematic name of our poppy is *Eschscholtzia*. "Whew!" you will say, "what an outlandish, unpronounceable name. Why do naturalists, who ought to be men of sense, give such names to plants and animals?" We shall try to explain. Men wish to know how many kinds of animals and plants there are in the world, and to arrange and name them in order properly, according to their different kinds, to do this, leading naturalists, like Linnaeus, Cuvier, and their successors, have found it necessary to give names in that language which is most generally understood throughout the civilized world by those who have enjoyed the advantages of education. That language is Latin which was spoken by the old Romans who, as you know, once ruled the world, so that their language has become a part of the many languages of all civilized nations of modern times.

These are the reasons why every animal and plant that is known has a Latin name. Sometimes these names are given from the qualities of the plant or animal, sometimes from the name of their discoverer.

In this way our California poppy is named after the man who first made it known to the scientific world.

It was named in honor of a Russian naturalist, who made a voyage around the world, and visited California nearly fifty years ago, with the celebrated Kotzebue, the Russian navigator. This was Dr. Eschscholtz, and as he first made the plant known to the naturalists of Europe, it was called *Eschscholtzia*, which simply means Dr. Eschscholtz's plant. It is pronounced as if spelled Es-koltz-e-a accented on second syllable. But as there are several kinds of this plant, which differ in size and color, another Latin word is added to distinguish them.

The kind which was first discovered was called *Eschscholtzia Californica*, that is, California poppy. It is the largest kind, sometimes attaining a height of between two and three feet, and has yellow flowers. One variety of this species has pure white flowers, and may be called *Eschscholtzia Californica corolla-alba*, which being interpreted merely means the white flowered California poppy.

The orange colored species, which is most common on our lighter soils, is named *Eschscholtzia crocea*, or crocus poppy, so called because its flower is cup-shaped, and of a deep orange color like the crocus. It usually grows from a foot to eighteen inches high.

Two smaller kinds with yellow flowers are *E. compacta*, so named from its dwarfish, compact form, and *E. tenuifolia*, or slender-leaved poppy.

magnified; 6 is a section of the same showing the germ, and 7 is the germ magnified still more.

No. 8 shows how the stamens, or male organs of the flower, are attached to the petals, and 9 is a section of an unripe seed-pod.

From March until September our poppies are blooming and beautifying the plains in some portion of California. In San Joaquin Valley they first bloom in March, are in all their glory



THE CALIFORNIA POPPY.

These poppies can be easily distinguished from our wild tulips, already described in the *RURAL PRESS*. Poppies have four flower leaves, or petals, but tulips only three. Poppies have finely divided leaves, as represented in our engraving, while tulips have simple grass-like leaves. They have but a slight odor, reminding one of a freshly cut watermelon.

Our engraver presents us to-day with a life-like, or an accurate, representation of the California poppy, giving its stem, leaves, buds, flower and seed-pod in their natural size. It is seen that the seed-pod is very differently shaped from that of the opium poppy and its kindred species.

Fig. 2 is the pod opened, when green; 3 is the same as it opens, when dry; 4 is the upper part of the seed pod, before opening; 5 is a seed

in April, and disappear entirely by the first of July, when our plains are dry and sere. But the traveler sees them in full bloom along the Central Pacific Railroad, in Livermore Valley and to the westward, until late in September. San Joaquin Valley, Nov. 25th, 1872.

RALPH RAMBLER.

THE VALLEJO CHRONICLE in speaking of the recent Farmers' Union Address says:—The address published by the committee is replete with good sense and valuable suggestions, and forcibly exhibits to our agriculturists the necessity of combined effort upon their part to free themselves from the present disadvantages under which they labor. It is to the lack of a unity of action that the committee attribute, and very justly, the present condition of dependence which the farmers occupy. The perfect unanimity with which the address was received by the local country papers is an evidence of its just appreciation.

A NATION'S LOSS.



THE LATE HORACE GREELEY.

When our great and good men die, it is not unbecoming in us as a people to grieve. In the recent death of HORACE GREELEY we lose one of the most noted men the nation has ever known. In the wide field of his varied usefulness, as a journalist, he stood in the front rank, for he had no equal. As a philanthropist, he was large-hearted and possessed of a noble courage. In his opinions, generally right, and in support of them, firm as adamant.

As an orator, patriot, statesman and politician, he was earnest and ambitious. As an agriculturist, his name will be remembered and honored. In his domestic and social relations, as kindly and genial as humanity permits; whilst not a shade of intentional wrong has ever marred the fair fame of his great efforts for the public good, and in the lifting-up and alleviation of suffering humanity. And now, after a lengthened, honored, earnest and eventful life, he sleeps, and the nation mourns.

Climate of the Two Coasts.

Farmers of California; New Englanders thrive and prosper, with their farms one-third of the year under the snow. We ought certainly to prosper; when the same four months in which their land is held in a grip of frost, snow and ice, is our very best season, indeed almost our only season for putting in order and seeding our vast grain fields. In an early number of the *RURAL* we assumed the position, that in a country so new in all its general characteristics of soil, climate and productions as is the Pacific Coast, there must be much variation from established usages in other parts of the world; that a new system and new practices must be adopted.

Now just for contrast, we will reproduce from the *American Agriculturist* a few good and necessary directions to horticulturists of the Atlantic States in just about our own latitude, with perhaps a word or two of our own by way of comment. The *Agriculturist* says—bend down the canes of the tender varieties of raspberries, and cover with earth before the ground freezes. We say, don't you do any such thing. Again—strawberry beds should receive a covering of straw, or bog-hay, or leaves, two or three inches thick. Another mistake we say, for at this moment our market is supplied with strawberries. Again—your grape vines whether tender or hardy, do best if laid down, that is, covered with earth or evergreens till spring. Mistaken again. Again—tender roses are best treated by laying down and covering with sods. Quite wrong again, tender roses are in bloom; and so we might go on through the whole range of agriculture to the keeping of animals and the tillage of the soil; and find that our practices must be governed by no old rules of seed time and harvest of the Atlantic Coast, and this is the reason why the *RURAL PRESS* is a specialty, and why it must treat of things as we find them here, under our own peculiar circumstances of soil and climate.

FROM OUR READERS.

San Luis Obispo.

EDITOR RURAL PRESS:—There is ample cause to bestir ourselves in the matter of co-operation. Here in this county an attempt has been made among the farmers to start a co-operative store, but those interested in opposing all measures for enabling the people to dispense with the middlemen, managed to get a tool of their own to feign joining the movement for the only purpose of throwing discord among the members, and, if possible, prevent organization. The point which was used most effectively in deterring from a harmonious conclusion of the preliminary meeting was, the question of paying the officers for the first six months.

It is claimed that any farmer who has to purchase goods in the course of the season to the amount of \$500 can well afford to spare without compensation the time required to act as a director for a co-operative club. The saving made by getting his goods minus the profits of middlemen is amply sufficient payment for any time required in attending to the business of the club.

But the miserable, small argument was used "that by so doing, some persons would receive the full benefit of the organization without giving any attention to the management."

This throwing cold water upon any or all attempts of the people to free themselves from the burden of supporting a vast horde of middlemen. Sinecures and professional drones are to be expected and cannot be too carefully guarded against.

There is no better portion of the country to start fair in a co-operative movement than the portion of San Luis Obispo County bordering on the ocean between San Simeone Bay and the mouth of the Santa Maria. It was stated in a meeting last week that a merchant started in Cambria three years since, with a capital of \$900, and drew out of the firm a few weeks since with over \$10,000 in cash, and has now started business at another point not far away, with goods and an establishment that must have cost \$20,000. So much for the profits of the "trade."

If such arguments as the above are not forcible enough to induce co-operation, we are at a loss for them.

There is a farmer on a branch of Santa Rosa creek, (Mr. McPherson), who three or four years since was ridiculed for taking up such a miserable piece of ground, and who could sell out to-day if he chose, for \$10,000. There is something over 300 acres in his farm, probably not over 100 of it can be cultivated, but off from less than that he has gathered profit enough to fence the whole; build a good dwelling house, barns, stables, yards and corrals, and has cash enough over, to take \$500 stock in a co-operative store. All the above the product of one man's labor, with no capital to begin with but a stout heart and willing hand at farming, in five years. Who will deny that California is a wonderful country? As has been said of this region before, there is more land to the measured acre (if the chain bearer holds his chain horizontal), that is productive, than any portion of the State yet traversed.

There is a passage somewhere which reads thus: "Unto him that hath shall be given; and from him that hath not it shall be taken away, even that which he hath." Upon this principle the monopolists, we presume, feel compelled to act.

Poor settlers on Government land, outside of the large grants are discouraged; their stock driven about and shot, because their owners are unable to herd or fence securely; traps are laid to get them in debt or trouble, and every means is taken to force small holders of land adjoining the larger ranches, to sell to the landholders. The small farmers are often compelled to incur liabilities; the large are always ready to loan and take a mortgage; (mortgages of course must go untaxed), to add multiplied burthens to the already over-burthened small farmer.

The granite of this vicinity is the best now known on this coast. It is being used largely in the construction of the new Court House, now being built; it is of a yellowish gray color, and free from iron, therefore not as hard to work as the Folsom granite.

There are several of these granite protuberances rising almost to the height of mountains; probably the highest is 500 feet; the central and highest is called in the locality the "Bishop."

Over the jagged mitred top of the "Bishop," the golden and purple sunset clouds are throwing their reflections upon the paper as we write; may it not be a hopeful augury of the future? And may not co-operation be the watchword, more powerful than the trumpets of the Prophet in demolishing the Jericho of the monopolists?

Wending one's way never so carefully around these granite peaks, skirting deep cut ravines and arroyos, crossing the tangled montes, one must come upon brambles and accidents occasionally.

It would be an extremely careful hand that should guide the rein and never upset! All the beauties of nature have their opposites; every rose conceals its thorn. There are, however, human roses, more thorny, more repulsive, than any growing in morass or glen, from which

no amount of human care can guard the wayfarer. Both species are indigenous to the soil south of the Morro and its vicinity.

F. M. SHAW.

The Farmer's True Condition.

EDITORS PRESS:—I have been a reader of your valuable paper for a long time, and find much that is useful and interesting, especially the article on the Santa Rosa Club report. There is more truth than poetry in that article, the story of the room in which men were placed, and the walls made to close on them until they were crushed, is most forcibly brought home on us in this State. We have the Sack ring, the Railroad monopoly, middlemen in abundance, and the Foreign Transportation ring; and between the lot of them they have nearly crushed the life out of agriculture in this State, and a few more turns of the wheel will place farming among the things of the past.

It surprises strangers very much to see how openly the farmer is swindled, and then turn and "kiss the hand that beats them." Now there should be a stop some time, and that time has arrived. Singly the farmers can do nothing; the small stick is weak, alone, but organize, make a large bundle and it is hard to break. It is the only way for self protection; let there be Farmers' Clubs; don't send a delegation to Prof. A. praying him to accept the Presidency, and another delegation to Dr. B., begging him to accept the Secretaryship of the Club, and when Gen. C. or Prof. D. comes in, don't make everything bend to him.

The Professor may be a good theologian, and the General a good tactician, but for good solid farm talk give me the opinion of that old man in the corner, bronzed with the sun, and in all the glory of "cowhide boots and duck overalls." That man can tell an experience worth listening to; in his long life of farm labor he has had an opportunity of learning things that Professors and Doctors never dreamed of. No, give us a little practice, we have had theory enough.

It is time the farmer had something to say, he does the paying and none of the talking. The farmer to-day is supporting a horde of loafing shysters, legalized thieves and political bunners that are fast sinking the great agricultural interests of the State, and the quicker the farmer takes his right position in the political commercial world, the quicker he will derive the benefits.

Look at the position the farmer places himself in, (and you can't blame men if they take advantage of it); A., ships his fruit as produce to a commission house, his neighbor although on the most intimate terms with A., ships his produce to the firm adjoining; now there is naturally a spirit of competition between the rival houses and they oppose each other; how? Not with their own capital (for little enough most of them have), but with that of A and B here in Petaluma. So you see we virtually "cut our own throats" through the instrumentality of the commission merchant. This is all wrong and a unity of action is all that is required to break up this stupendous fraud. Let us speed the Farmers' Clubs.

Petaluma, Dec. 2, 1872.

Wine and Raisin Grapes.

EDITORS RURAL PRESS:—In reading the proceedings of the San Francisco Farmers' Club, etc., in the PRESS of 16th November, my attention was particularly attracted to the statement of Mr. Burnell, in reply to the question, "Which is the best raisin-grape?" I fully concur in his opinion, in regard to the superiority of the Muscat Alexander for raisins. At the present time, in this part of the State, and, perhaps, in other portions, the grape for wine is a drug in the market; it is even thought that hundreds of tons will remain on the vines, for the want of facilities for converting them into wine. And further, the variety in general culture here is of no value for raisins, and here is a total loss to the vineyardist. Now, if the variety best adapted to raisins of good quality was in cultivation, how much would be saved to the producer? And again, those who were fortunate enough to find buyers in the earlier part of the season, did so at a price leaving no margin for profit. Best sales this year were 75c to \$1 per cental—producers begging buyers; now at 50c per cental.

It is to be hoped our people will take warning and plant only the best raisin and table grape in the future. Hence, having the tri-advantage of table, raisin, and, in the event of an overstock of these, the residue will make a better wine, if not so great a quantity, than the Mission grape.

I am aware that several varieties are spoken of as desirable for raisins. But, after all, if any variety will make better wines than the Muscat Alexander, it should be generally known, and the more known the better; and as no better way is known than through the columns of the RURAL PRESS, I hope those who are experts in grape culture will avail themselves of the opportunity to enlighten your readers. I send you a sample of raisins made from Muscat Alexander grapes, by Mr. George Lord of San Bernardino Co.

These raisins are sun-cured, and turned but once in curing. Mr. Lord thinks 100 lbs. of grapes will make 40 to 45 lbs. of raisins, worth

in the market at wholesale at least 20c. per lb. How will this par, beside the producing of grapes for wine. What is your opinion?

Yours truly,
THOS. A. GEARY.

Los Angeles, Nov. 21, 1872.

The box of raisins came duly to hand, and they are RAISINS; none of your half-dried, juicy things that, put five pounds together in a box, would ferment, rot and sour before two weeks; but veritable raisins, such as we used to see in our boyhood days, and were glad to get at 25c a pound. We are pleased to know that in all parts of the State where grapes are grown, an increased interest is awakened on the subject of raisin-culture. We want wine, it is true, for it makes the best vinegar in the world, and vinegar is not inebriating; but it is questionable whether we want any greatly extended area of vineyards for the production of all the vinegar we need. Let us have more raisins.

Orange Trees and Manures.

EDITORS PRESS:—E. H. W., in your issue of the 16th inst., complains of the condition of his orange trees. As you invite some practical orange grower to give his opinion, I venture to give my ideas in regard to the matter.

As my business is particularly in the semi-tropical nursery department and also having many standards growing in my grounds. My experience has been practical. In all cases coming under my notice where "the bark just below the surface is soft or in a semi-rotten state," the cause can be traced directly to excessive use of strong manures directly about the stem of the tree. The orange family needs a rich, strong soil, and receives fertilizers kindly, but care must be taken not to apply the manure too close to the stem, but spread entirely over the ground around the tree.

Many dozens of fine thrifty orange and lemon trees, worth \$100 each, have been ruined by applying manure directly about the tree. The manure seems to rot the bark and possibly is aggravated by irrigating in summer during the hottest part of the day. The bug and grub spoken of is perhaps only a secondary circumstance, the condition of the bark being an inviting place for its abode. If there is peach or apple borers here I have failed to notice them or their effects.

Hoping the above may throw some light on the subject, I remain, yours truly,

THOS. A. GAREY.

Los Angeles, Nov. 30th.

The Southern District Fair.

The Los Angeles News dares to set forth a few wholesome truths in regard to the management of their recent Agricultural Fair, and as many of the truths are applicable to other localities and fairs as to the one herein specified we give the article entire, hoping that good may grow out of it in the future management of the State, district, and county agricultural and mechanical expositions.

The Southern District Agricultural Fair for 1872 is now over. Its influence will be felt for good or for evil in every department of industry in the district. These annual meetings of the Southern District Agricultural Association are professedly held for the encouragement of agriculture, horticulture, stock raising, wool growing, mechanics, arts and sciences—every branch of industry coming within the scope of the patronage of kindred associations elsewhere.

The objects and intentions faithfully carried out, and the most sanguine expectations of the promoters of the Agricultural Association could not fail to be realized. It would generate and cultivate a healthy and legitimate rivalry among all classes of producers to excel. It would give an impetus to our industries unequalled in any other section of the Pacific coast.

It is for the purpose of encouraging the industries of a district that an agricultural or other association offers premiums for the best exhibits, and it is in accordance with the value of the premiums thus offered that the exhibits are valued.

Award of Premiums.

The finale of the Agricultural Fair—the award of premiums—does not give promise of a plentiful harvest of good. The tendency of all the awards is to discourage improvement and advancement in those industrial departments wherefrom the district at present derives the greater portion of its revenue and from which its future revenue must chiefly be derived.

Wool is now and probably will be for many years to come the leading article of export of this district. Occupying that position it claims upon any association professing to promote the industries of the district take precedence of all others. The highest premium awarded in this department only amounted to \$7.50, such being for the best ram of any breed. On the other hand, premiums ranging from \$50 to \$275 were awarded for the best fast horses—the purses of the various races being simply premiums under another name.

To marry the usefulness of such animals is questionable—their value to the District is cer-

tainly limited; but it must be evident to the most obtuse intellect that every other department of the late Fair was prostituted and made auxiliary to a department which, taken at its best, tends only toward making gambling fashionable.

To the welfare of the district, its mechanical, vinicultural, horticultural and agricultural industries are of the greatest import. They were entitled to rank in the premium lists in proportion to their present or prospective value to the district, due recognition also to be made for the amount of capital represented by the exhibit. Experiments in either of the branches mentioned, one would suppose, would have received just reward, for the district is as yet in a chrysalis state, and encouragement is due and necessary for the development and maturity of all experimental efforts in any department.

Lack of Discrimination.

A careful study of the list of awards of premiums reveals the prevalence of a different order of things. For instance: Twenty jars of preserves and jellies, selling at any of the retail stores at 75 cents and one dollar per jar, receives a premium of \$20, the highest awarded; while a magnificent family carriage, representing a value of \$650, and for which ground rent of \$5 is paid, receives a premium of \$5! Also, a spring wagon, manufactured to order, at an expense of \$500, and paying a similar rent for space in the Industrial Hall, receives an award of \$5.

An exhibit of native tobacco—an experimental industry, promising fair to develop into something of value to the district—was awarded a premium of \$5, which amount the exhibitor had paid the Association for rent; while a piece of fancy moss and shell work, of no present or prospective value to any part of the district represented in the Fair, receives an award of \$10. A pin cushion, valued at less than the premium, receives \$2, and a soap factory—another experimental industry—receives only \$3.

A collection of canned fruit, valued at much less than the premium awarded, and representing no particular industry nor any investment of capital, is awarded \$10. The fine arts, on the other hand, with works representing several hundred dollars, is encouraged by the same paltry sum as is awarded the canned fruit.

A tanning collar and an embroidered pair of slippers—the labor of two or three days at the uttermost—receive \$2 each, and the same amount is awarded a knitted counterpane, which cost the exhibitor the leisure of a year to make. A collection of vegetables receives an award of \$15, the second highest premium given, and a collection of choice semi-tropical trees from one of the leading nurseries in the district receives nothing.

Fast Horses.

If this is the manner the Southern District Association proposes to aid in the promotion of the industries of the district, its usefulness is at an end. Producers of all kinds will refrain from giving their support to an association whose professions are empty—which is an Agricultural Association in name only. It is the last time that they will play second fiddle in an exhibition gotten up by a society that professes one thing and practices another. It is the last time they will permit themselves to be used to secure a better patronage to the display of fast horseflesh owned and exhibited in the interest of a few gentlemen of the district.

An industrial exhibition can be made as great a success in Southern California as in any other part of the State, but it must be separated and altogether independent of an exhibition of racing stock. It must be purely what its name indicates it to be—a representation of the industries of the district. In any other form or condition it will be regarded as the present one is—an imposition on the producing public.

LICE ON HOGS. In answer to a recent inquiry for a remedy for lice on hogs, allow me to say that I have had an experience of twelve years with breeding hogs. The past five years I have used the following, which will clean off the lice in two days;—Put about one gill of kerosene oil into an old dish, and with a paint brush or old woolen rag rub the oil up and down the back of the animal and behind the fore leg and on the flank. Be particular about the last two places, for it is where the lice deposit their eggs, which, if not destroyed will hatch out in about five days. If it be a black hog these eggs can be plainly seen, being about the size of a timothy seed and lying close to the skin fast to the hair; no one need fear to use the oil freely, as it will not injure the hog in the least. Hot water will not kill these lice, for I have seen them crawl after being butchered.—R. Woodruff, in Rural New Yorker.

It is the custom of English agricultural societies to keep a register of committee men who are especially fitted for certain positions or who have served faithfully at exhibitions, with a designation of the class or department in which they are best qualified to serve—as for instance, short horns, cart horses, long-wooled sheep—and this list is issued annually.

MINERALS IN JAPAN.—In Yamashiro province in Japan a mineral greatly resembling coal in appearance has recently been discovered. On examination, however, it turned out to be some kind of dye. It is on a mountain from which large quantities of copper ore have been taken for years.

HOME AND FARM.

Plant a Tree, Boys!

More than forty years ago the writer, when a lad of some ten years, observed growing along the banks of a small stream in Maryland, a beautiful young sycamore. It was not more than an inch and a half in diameter, but was straight as an arrow. Pleased with its appearance, I dug it up, carried it home and planted it. Some two or three years since I visited it, and never in my life was I more delighted than to find that it had grown up to be a magnificent tree, with a stem rising up fully thirty feet without a limb, and with branches spreading out on every side, furnishing at one and the same time not only an object upon which the eye could feast itself, but shade beneath which I could repose when weary.

Now, Mr. Editor, I am not at all of a romantic turn; I am a plain matter-of-fact kind of a man, therefore do not think that I am silly, because I have so warmly expressed my delight at witnessing the growth of a little sapling planted by my boyish hands, and with no more thought that forty years afterwards I should have the satisfaction of seeing it grown up into a noble tree than I had that I should be made President. It taught me a most impressive lesson, one that I shall never forget. It is this, that if every man or boy would in course of his life, plant but a single tree, he would have the satisfaction of knowing that he had done something for the benefit of his fellows.

On the same farm a few years later, I assisted in planting hundreds of locusts and maples that have since grown up to tree manhood, but upon none of these did I look with as much pleasure as upon that splendid sycamore. It was an idea and action of my own. The planting I remember to-day with as much vividness as though it had taken place only a week since.

Now let me say to every boy reader of your useful paper, *plant a tree!* Plant one every year, and if your lives are spared as long as mine has been since I carried that sycamore sapling from the stream side to where it now stands in splendid majesty, you will thank me for this well-meant suggestion.—W. L. R. in *Journal of the Farm.*

Farmers' Children.

Farmers' children are the hope and the life of a nation. If they grow up intelligent, moral, patriotic, there is hope for the country for a continuance of free institutions. Seven-tenths of our children are born on the farm. They have the preponderance in numbers as well as they have in strength and influence. They grow up hearty, robust, active, industrious. They become our most active business men in our cities and towns. Our cities would soon degenerate, were it not for the fresh blood infused into them from the country yearly. Go to the most enterprising and successful business men in St. Louis to-day, and ask them where they were born; and they will tell you on the farm—perhaps in a cabin. Ask your most successful lawyers, ministers and physicians where they were born, and they will tell you in the country—not in the city.

There is more in farmers' children than most people look for, and there might be much more still. Do you ask how? We will tell you. By furnishing them better facilities for education. It is the mind and the morals that make the man. The man must be educated to become useful. The ignoramus does not make an impression upon the body politic. Ignorance does not rule, but intelligence does. If we would have society become better, we must educate our children. Farmers' children are educated chiefly in the common school. Good common schools are doing more for the people, for the country, for good morals, than any other instrumentality. They must be encouraged. Those having them in their keeping must employ the best teachers, visit them, give them their influence, and sustain them in every possible way. They should constantly strive to secure the best—not the cheapest—teachers. They must employ teachers whose hearts are in their work; who love their vocation; who do not teach simply to make a few dollars, but because they feel that they are performing an important duty, which they wish to do honestly and well.—*Rural World.*

DRIED FRUIT.—Through the bountifulness of nature and the ingenuity of man, the time is near at hand when we shall have an equal quantity of fruit the year round. The usual natural supply of perfect fruit is gathered and sent to market, but there is always a large quantity of imperfect and often a superabundance of fruit, which falls and covers the ground so thickly that it is almost impossible to walk without treading upon it. All this over-supply can now be utilized and rendered profitable by the employment of some one of the several methods of drying fruit recently invented, and we see no reason why the supply should not be as bountiful in winter as in the months of fresh fruits. Indeed, the greater profit realized from the sale of properly dried and canned fruits, coupled with the fact that such methods as Wright's for drying and yet preserving all the original flavor, will turn out large quantities at a small cost, must, we think, lead at once to the result we have indicated, so that the lovers of fruit will never be without a good supply for household use.

The Glory of the Farmer.

The benefits conferred upon mankind by the farmer and the pleasure which attaches to his vocation are charmingly portrayed by Ralph Waldo Emerson, in one of his essays, as follows:

"The glory of the farmer is that, in the division of labor, it is his part to create. All the trades rests at last on his primitive authority. He stands close to nature; he obtains from the earth the bread and the meat. The food which was not he causes to be. The first farmer was the first man, and all historic nobility rest on possession and use of land. Men do not like hard work, but every man has an exceptional respect for tillage, and the feeling that this is the original calling of his race, that he himself is only excused from it by some circumstances which made him delegate for a time to other hands. If he had not some skill which recommends him to the farmer, some product for which the farmer will give him corn, he must himself return into his due place among the planters. And the profession has in all eyes its ancient charm as standing nearest to God, the First cause. Then the beauty of nature, the tranquility and innocence of the countryman, his independence, and his pleasing arts—the cares of bees, of poultry, of sheep, of fowls, the dairy, the care of hay, of fruits, of orchards and forests, and the reaction of these on the workman in giving him a strength and plain dignity, like the face and manners of nature, all men acknowledge. All men keep the farm in reserve as an asylum, where, in case of mischance, to hide the property or a solitude if they do not succeed in society. And who knows how many glances of remorse are turned this way from the bankrupts of trade, from mortified pleaders in courts and seates, or from the victims of idleness and pleasure? Poisoned by town life and town vices, the sufferer resolves: 'Well, my children, whom I have injured, shall go back to the land, to be recruited and cured by that which should have been my nursery, and now shall be their hospital.'"

Location of Houses.

Science of Health has some sensible suggestions on this topic, which are appropriate here:

Houses should be built on upland ground, with exposure to sunlight on every side. During epidemics, it has been noted by physicians that deaths occur more frequently on the shaded side of the street than on the sunny side; and in hospitals, physicians have testified to the readiness with which diseases have yielded to treatment in sunny rooms, while in shaded rooms they have proved intractable.

Let there be no bogs, no marshes, no stagnant water in the neighborhood. Then let the cellars be thoroughly drained. Inattention to this subject has caused the death of many a person. No father or mother should rest one moment in peace while their innocent babes are sleeping in rooms over damp and moldy cellars. Cellars should not only be drained, but thoroughly ventilated, otherwise the house must be unwholesome.

Let the drains also be constructed for the conduction of slops and sewage of all kinds to a common reservoir, at a distance from the dwelling, to be used for fertilizing purposes.

DIFFERENT KINDS OF FOOD.—The varieties of wood produced in different parts of the world are far more numerous than most people are aware of. At the Paris Exposition of 1867, there were, from forty-five different countries, no less than 3,769 different kinds of wood exhibited, 395 coming from Europe, 252 from Africa, 858 from Asia, 966 from Oceania, and 1,298 from America.

NUTRITION IN CORN-COBS.—If the corn is not thoroughly dried, there is some nutriment left in the cobs, but in drying most of the nutritious matter has been taken up by the grains, and the cobs then are about as valuable for food as sawdust.

NEW METHOD OF STOPPING LEAKS.—An ingenious method of stopping leaks in iron ships when at sea has been patented in England by Mr. McCool, who effects his object by means of what he calls "safety-plates." These plates are, as artisans say, "dished"—that is, they resemble a dish in shape; consequently, when the hollow side is pressed against the plates of a ship, the "safety-plate" fits closely, and will keep water out when held firmly in place with screws. By a clever contrivance, when once the leak is discovered, means can at once be taken for fitting on the new plate. A weighted line is dropped through the hole; this is laid hold of by lines drawn under the ship, the weight is taken off and replaced by a screw bolt; a plate, with India-rubber covering the inner edges, is next screwed to the bolt, dropped overboard and drawn into position by the line hanging through the leak; an inner plate is then screwed to the inner end of the bolt; and thus the leak is completely covered on the inside and on the outside, and the water is kept out. That this means of safety can be made use of in the open sea, and under different circumstances, without the necessity of docking the ship, is not the least among its recommendations.

MISCELLANEOUS.

Sacramento Earthenware.

In the city of Stockholm, the capital of Sweden, four years ago, the attention of the Bergman Brothers, practical and chemical potters, now proprietors of the Sacramento Pottery, in the vicinity of Sutter Fort, was drawn to a sample of California clay, exhibited in a cabinet designed for scientific purposes. So forcibly were they impressed with the value of California clay, they at once took passage for the El Dorado of the West. On reaching San Francisco the brothers, ascertaining on inquiry that the best clay lay in the vicinity of Sacramento, at once proceeded thither. They purchased an interest in the Sacramento Pottery, of which they are now the sole proprietors. The utmost success has attended their efforts, and Sacramento earthenware has a world-wide reputation as being superior to all others. The Bergman Brothers have been so successful in business that they sent to Europe for their father, mother, two brothers and a sister, all of whom arrived here about a month ago. The Bergman *pere* is in the prime of life, being but fifty-two years of age, and has a most thorough knowledge of the qualifications of various kinds of clay. The old gentleman is delighted with California, especially Sacramento, and has become satisfied that for pottery and brick business California clay is not excelled. During the past two months there have been burnt at the Sacramento Pottery 2,000 gallons of stoneware. The proprietors are preparing for the manufacture of terra cotta and Rockingham and yellowware.

The result of a late prospecting tour was that they found in this county, about forty miles distant from the city, an excellent article of clay. In a short time the father and his two sons will start out on another prospecting tour, traversing the State from one end to the other, in search of a still better quality of clay, which they are satisfied California possesses. As California clay is mixed more or less with mineral, it requires more manipulation than European clay; but when the foreign elements are expunged it cannot be excelled. The Bergman Brothers have written to Sweden for two experienced potters, and it is their intention next season to enlarge their pottery to three times its present capacity. The firm has no agency here or in San Francisco, there being no need of any, as the wares are sold as fast as they come out of the kiln. About two months ago there arrived from the East two car loads of earthenware, which the consignee said he had no use for, as Sacramento supplied a much superior article.—*Sacramento Union.*

American versus Foreign Leather Belting.

By far the larger proportion of belts are made in the United States, which are conceded by the best judges to be superior to those made in any other country in the world, those of English manufacture not excepted.

The fact was well demonstrated by a practical proof lately afforded. A manufactory in Scotland had an order to give for a large amount of belting, and wanted to obtain the best goods in the market. Proposals, samples being furnished, were made by leading European manufacturers for all the heavier belts desired. A well-known New York house, however, that of J. B. Hoyt & Co., obtained the order and the unequalled indorsement of the Scottish house as to the superiority of their belts. We have seen some of the samples which were submitted by the foreign competitors for this order, and, while the leather was, in some cases, of good quality, the manufacture of the belts was of the most clumsy and primitive character.

We think we are not overstating the case in saying that in neither France nor Germany do they know how to make, or do they make, any very large proportion of first-class belting leather or sole leather; in England, where the tanners, as a rule, have well earned their reputation of making the best sole leather in the world, the tannage is generally too plump and hard for the best belt leather; for, while we believe it is hardly possible to put too much tannin into leather to be used for soles, we think it is clear that, when the hide has more tannin than necessary to make it of its original thickness as taken off, its tensile strength is thereby diminished. For belts we want tensile strength and pliability; for soles we do not so much need pliability as the compactness which will resist water, and the toughness which will bear a great deal of attrition. The English tanners are eminently successful in obtaining these latter qualities. The difference, however, is not very plainly marked between good belt leather and good sole leather, except that the former requires much better selection of the parts of the hide to be used, and for large belts only the best parts of whole hides can be used. In France and Germany, however, although their calfskins and upper-leathers are superior to those made anywhere else, their sole-leather tanning is equally inferior, is done in a very tedious and slovenly way, and their tanners are at least a hundred years behind the age.—*Shoe and Leather Reporter.*

The Field of Knowledge.

In alluding to the vast field with which the scientist is expected to make himself familiar in the present advanced condition of science, Mr. J. H. Gladstone recently spoke before the British Association as follows:—

"So intertwined are the various branches of perfect understanding of one science can only be obtained through an acquaintance with the whole cycle of knowledge.

Yet, on the other hand, who can survey the whole field even of modern chemistry? There was a time doubtless in the recollection of the more venerable of my auditors, when it was not impossible to learn all that chemists had to teach; but now that our "Handbook" has grown so large that it would take a Briareus to carry it, and it requires a small army of abstractors to give the Chemical Society the substance of what is done abroad, we are compelled to become specialists in spite of ourselves. He who studies the general laws of chemistry may well turn in despair from the ever-growing myriads of transformations among the compounds of carbon; we have agricultural, physiological, and technical chemists; one man builds up new substances, another new formulae; while some love the rarer metals and others find their whole soul engrossed by the phenyl compounds.

How is this necessity of specialization to be reconciled with the necessity of general knowledge? By our forming a home for ourselves in some particular region, and becoming intimately conversant with every feature of the locality and their choicest associations, while at the same time we learn the general map of the country, so as to know the relative position and importance of our favorite resort, and to be able—when we desire it—to make excursions elsewhere.

To facilitate this is one of the greatest objects of the British Association. The different Sections are like different countries, and leaving the insular seclusion of our special studies we can pass from one to the other, and gain the advantages of foreign travel.

From this Chair I must of course regard chemistry as the centre of the universe; and in speaking of other Sections I must think of them only in their relation to ourselves."

Persevering Inventors.

A true inventor is always hopeful, even under the most adverse circumstances. Patiently will he toil in pursuit of the object that haunts his brain, and no obstacles, however formidable, seem to dampen the ardor of his enthusiasm. The history of men of real ingenuity is full of examples that verify the correctness of what we have said respecting the persevering character of men of genius. Our own history and the records of the Patent Office are replete with examples of the heroism of inventors. Thomas Blanchard, the well-known inventor of the eccentric lathe and other valuable improvements, was a notable example of what perseverance can accomplish. Elias Howe, Jun., in the midst of the deepest poverty, persevered with his sewing-machine until he won complete success. Richard M. Hoe, Samuel Colt, Chas. Goodyear, Samuel F. B. Morse, Allen B. Wilson, Cyrus H. McCormick, John Ericsson, Isaac M. Singer, Jerome B. Secor, John Bachelder, and a host of other inventors, knew no such word as fail; they stuck to their projects till success was fairly wrenched out of adversities that would have crushed other men. Many inventors seem to think that the field for great improvements is in some degree filled up; that the opportunities for great discoveries in the arts are about closed. Such, however, is not the case, the field is constantly widening, and there is as much encouragement to persevere in invention as was open to the men whose names we have mentioned. It is only within the last year that one of the most valuable improvements has been introduced in the art of transmitting messages by telegraph. And in every department of mechanical and chemical industry labor-saving inventions are still required, and will be for all time to come. We say, therefore, that the field open to persevering men of genius is still a large one.—*American Artisan.*

A TIDAL WATCH.—Sir William Thompson, at a late meeting of the Engineers' Association at Newcastle, upon Tyne, described to the association a new and convenient instrument which he called a "Tidal Watch," which was then in process of construction, under his supervision, and nearly ready for exhibition. It would indicate the height of the water as dependent on the sun, the height of the principal lunar and principal solar tides, and would be adjustable to giving these facts for any given locality. The instrument would also show the time of high water. Sir William was also planning another similar machine for tidal computations, which would give the exact height of the tide for every moment of time. This would be shown by the elevation and depression of the end of a clock hand, which would make one revolution corresponding in time to the rise and fall of each tide. This device will also be made self-recording by tracing the curve of the rising and falling tide upon paper.

FARMERS IN COUNCIL.

Sacramento Farmers' Club.

The club met Saturday, Nov. 30th, and was called to order by Vice-President Manlove.

In Memoriam.

After the reading and approval of the minutes, I. N. Hoag, from the Committee on Memorial and Resolutions commemorative of the life of Judge Baker, the late President of the club, reported the following, which were adopted:

Mr. Chairman: At our last meeting it was formally announced to this club that our late President, S. N. Baker, was dead, and the undersigned were appointed a committee to present to the club a memorial and resolutions commemorative of his life and death. It is a sad duty thus within a year of the time of organizing this club, to be called upon to place upon our records the insignia of mourning for its first President. But such is life. No condition or position of usefulness among our fellow-men is a guarantee that at any day, aye, any hour or moment, we may not be summoned by death's messenger to give up all our enjoyments, all the duties, all the honors of the present, all the hopes and anticipations of usefulness in the future, and go with him to "that undiscovered country from whose bourn no traveler returns."

Thus it has been with our friend and associate. The devoted father, the kind and respected neighbor, the intelligent and dignified presiding officer, the conscientious and upright man and devoted Christian has been called, and, as we all sooner or later must do, he has obeyed that call, and the places that knew him best know him no more. His seat in this association is vacated; no more will we experience that kind, good-natured greeting; no more will we listen to the modest relation of his experience as an agriculturist. But "the deeds of men do live after them," and so long as members of this club shall live, so long as this club shall continue, so long will the memory of Judge Baker, its first President, be cherished and kept green.

He was born in Wayne county, New York, in May, 1810, and was consequently 62 years old when he died. He emigrated to California in 1850, from Coldwater, Michigan, and engaged in mining near Diamond Springs. Afterwards he engaged in mercantile business in Sacramento, and was one of the sufferers by the fire of 1852. After which he commenced farming near Brighton, where he has since lived, and where he died.

The Committee reported the following resolutions:

WHEREAS, in God's providence our friend and associate, S. N. Baker, has been removed from his sphere of usefulness in this world; and whereas, it is meet and proper that this club, whose presiding officer he was, should express its appreciation of his life and regret at his death; therefore,

Resolved, That in the death of S. N. Baker, late President of this association, we have to mourn the loss of a valuable member of the club, and a true friend of agriculture. He was distinguished for the purity of his character, and the high-toned principles which guided his conduct among men. The kindness of his heart and the urbanity of his manners will ever endear him to those who knew him best, and he will be remembered by us all as one of God's noblest works—an honest man—a true sample of a country gentleman.

Resolved, That we tender our heartfelt sympathy to the family of the deceased, and while we would not break in upon the sanctity of their grief, we beg sincerely to mourn with them the loss we all have sustained.

Resolved, That a copy of this memorial and resolutions be furnished the family of deceased, and that they be spread upon the record of our proceedings.

Labor.

C. W. Hoyt then read the following remarks on this subject:

Every material good has its foundation in protective industries.

He that despises labor is the enemy of man.

Unrequited toil is the work of slaves.

The servant of a single master may not be more servile than the slave to circumstances or habits.

No general system of slavery can exist for any length of time without the sanction of Government.

The comparatively few who now run our Government, do so in conflict with the interests of labor. Nor have we any reason to expect that the combinations of wealth to oppress laboring men will show any relaxation of power until they are compelled to do so by a superior centralized force.

And our Government, which is claimed to have been instituted for the whole people, is now run by rings in the interest of wealth. As the number of persons holding the majority of the property of the United States is becoming relatively less, their power is growing more formidable. It is humiliating to reflect that the White House is converted into a gambling institution, to trick producers out of the fruits of their toil. The corrupting of what was intended for good is no new thing. Under the present political management (without reference to party) the laboring portion of the community have nothing to hope for.

The object of citing this well-known condition of things is for the purpose of introducing the question: Why is labor the victim of wealth? Our sad experience teaches us that our labor system is at fault. We have been taught from time immemorial, both religiously and politically, that we were naturally at enmity with each other. Man has been made to believe this lesson and has practiced accordingly. Though his better thoughts would incline him to more truthful relations, yet the power of habit has been invincible to sustain

the old adage—"Competition is the life of trade." This misnomer has entwined itself into every industrial avenue. No false system was ever cloaked with a more popular falsehood. When carried out it is certain to result ruinously to both life and property. Outdo also means to undo, to cripple, to destroy. The false sentiment has been at the base of much evil. It provokes jealousy, and often a conflict for supremacy. Those who are the most successful become the oppressors of the less fortunate and adopt another old adage not less barbarous—"To the victors belong the spoils." By gathering up the distracted fragments they centralize a power in the shape of wealth.

Our only remedy to this state of things is in centralizing the labor elements. Though the power of wealth is now superior to that of labor, it will be only secondary when labor becomes a unit. To accomplish this end we need to proceed as we have now commenced. Co-operate until we have gained sufficient power to reform the Government, by having a bureau established at Washington for the employment of unemployed laborers. Also, to locate branches, at central locations throughout the United States. The effect would be to make every laborer feel a deep interest in the support and protection of the Government.

This method would centralize the labor power, where it properly belongs, in the Government, and would be a vital support. Though revolutionary, it would be peaceful. A quotation from the able "address to the farmers of the State, by the Committee of the California Farmers' Union," may not be out of place here, to wit: "The great difference now existing between the most civilized and powerful nations of the earth, and the less civilized and weaker nations and tribes, is owing, more than to any other one cause, to the fact that the former have learned the advantages of associations and combinations, and have formed themselves into well and strongly organized governments, through which they act as a unit for the mental and physical improvement of their individual citizens, for the promotion of their interests."

"Through the influence and power of associations and combinations which have been brought to bear by other classes against the farmer isolated and single-handed, as he has allowed himself to remain, his standing and position both financially and socially are entirely the reverse of what they formerly were."

Hence it is inferred that if an antagonistic system of labor was suited to a barbarous age, it certainly is not suited to this age. As our advancement in civilization brings us into more intimate relations, and while through our better natures we would like to be friends, it becomes the more difficult to sustain these conflicting relations; to smile in one's face as a friend, and at the same time suspicion him as a competitive enemy.

Again, says the address already quoted from: "The remedy lies in our own hands. We must assert, recover and maintain our original and rightful position in the body politic. Being the nurses and supporters, we must resolve no longer voluntarily to remain the slaves of the non-producing classes." Here it is suggested that our efforts have to be carried out politically. If our inferences are correct, then our protection lies in the successful organization of co-operative unions, until the establishment of a national co-operative union, for universal ends, crowns our efforts, and every laborer is protected in his rights to the fruits of his own industries.

Greenlaw—I have not had the pleasure of being present at our meetings when this subject has been under discussion, but have noticed the scope of the debate in the papers. I am among those who believe that the trouble of our labor system is not all to be attributed to the labor or laborers. The employers are in many instances much to blame for the little interest manifested by the laborers in their work. So long as the laborer is treated as he is in this country, we need not expect him to care much for the success of our undertakings. On the other hand, if we treat our help well—encourage them to lay up their wages and to take an interest in themselves—they will take more interest in us and ours.

I have seen the truth of these statements in my own help. Had, in two instances, employed young men who, when they came to work, had nothing ahead and seemed to have no idea of laying up any thing. He had in each instance suggested to them the propriety of laying a portion of their wages up, and had assisted them in doing so, and he found that they at once seemed to acquire more self-respect and more regard for me, and more interest in the success of my affairs.

The result in each case is that both these young men are now in business for themselves and well to do in the world—one in this State and one in the Atlantic States. Some employ white labor and some Chinese. I always have one or more white men in my employ by the year, and have no difficulty in getting good help and trusty men. We cannot expect, nor should we want to keep those in service always in service. Enterprising servants will become employers themselves, and it is the interest of all that they should. The Chinese are no exception to this rule.

The Chinese servant of to-day becomes the Chinese proprietor of to-morrow. Hence, we have many Chinese farmers in this country. The production of many kinds of agricultural and mechanical products have already been monopolized by the Chinese, and white labor has thus been limited to narrower bounds, and confined to fewer channels. For instance, the Chinese produce now nearly all our peanuts,

cabbage and many other vegetables. They also manufacture cigars, shoes and many other articles of clothing.

In view of these facts the question arises whether it is our duty and interest to employ Chinese or white labor, and thus encourage white or Chinese proprietors in our country. Laborer and employer will in our country be constantly changing places—a constant succession will be going on between the employer and employed.

Rutter—Has been engaged in farming in this State for fifteen years and has had a considerable experience in the employment of labor, and his experience had not been like that of Greenlaw. He had always treated his men well and given them all the comforts. The first man employed worked two weeks and quit; the next worked about the same length of time and discharged himself and jumped his place and claimed all the improvements as his own, and as a general thing my experience has been that the more favors you show the laborer the more they demand and the less service they are inclined to be to the employer. We have got to compete with the agriculturists of the East, and to do so we must employ the cheapest labor or we must fail. If the Chinese are that labor, then I am for employing them. The question of religion and labor are two different questions.

Greenlaw said nothing of Christianity, but believes in sustaining our own race in preference to Mongolian. Employ and encourage the American boy and he will make a useful man and good citizen. Scold him and call him a hoodlum and he will become one. The ruling price of white labor, to-day, is but little, if any above that of Chinese.

Rutter—My experience has been, that I cannot raise strawberries with white labor, while I can with the labor of the Chinese, and make it profitable. My opinion is that the employment of Chinese in this State enlarges the sphere and increases the demand for white labor the same as the introduction of labor-saving machinery increases that demand. Without cheap labor we can't develop our mines of gold and silver, our coal and iron mines. Without cheap labor we can't compete with European manufacturers. Without cheap labor—the labor of the Chinese—one railroad could not be built or other internal improvements perfected.

On motion, the subject of labor was continued for further consideration, and the club adjourned one week.

Vacaville Horticultural Association.

EDS. PRESS.—The Vacaville Horticultural and Agricultural Association held a regular meeting yesterday, the 30th of Nov. The weather being bad the attendance was small. After the reading of the minutes by the Secretary and reports of committees, all other business was postponed until the next regular meeting. A motion was made and carried that Mr. Hyatt, of the Oakland Club, be invited to deliver an address before the Vacaville Club at their next regular meeting. Mr. H. T. Barker moved that some question of interest to the association be submitted for discussion at each regular meeting of the association, which was carried unanimously. The labor question was then selected for discussion at the next meeting. Some questions and suggestions in regard to fruit boxes was then indulged in, and all present exhibited a feeling of interest in the success of the association. The meeting then adjourned to meet at Oakland Schoolhouse, two weeks from that time.

J. HUCKINS, Cor. Sec.

SNOWED IN.—Some citizens of the Willamette Valley have driven a portion of their flocks and herds east of the Cascade Mountains, expecting to realize large profits from the venture. James Garrett left Linn county five weeks ago. He arrived at his ranch on Willow Creek and made his preparations for returning with a small band of fat cattle for the markets of this valley. One week ago last Wednesday, in company with three other persons, he left Willow Creek for Albany. The first night out a slight fall of snow covered the ground, which increased for several days, until he found himself and companions far into the mountains and the snow five feet in depth. There was a crust on the snow sufficient to bear the cattle, but the horses would go through and flounder in it back deep. It was found useless to try to get through, and so the party turned back, and after four days of the severest trials finally reached the Willow Creek Ranch, and turned the stock into the corral. During these four days, Mr. Garrett's stock had nothing to eat but what they browsed from the limbs of trees, and the camping party were obliged to dig away snow to the depth of four or five feet every time they built a fire to cook their meals. The forest trees were covered with sleet. He is glad to get back again "into the settlements" and says the Willamette Valley is good enough, and in future he shall be content to "let well enough alone." There are large bands of cattle in Eastern Oregon unprovided for, and if the winter should continue severe in that division of the State, great suffering and loss is inevitable.—Oregon Bulletin.

THE HORTICULTURAL SOCIETY.—The Bay District Horticultural Society of California has filed its certificate of election of officers. The following named gentlemen were elected officers: President, Dr. A. Kellogg; Vice President, Charles Stephens; Secretary, F. A. Miller; Treasurer, H. Herst; Trustees—William Robertson, J. H. Stevers and Th. Brown.

Freights and Prices.

It is gratifying to be able to state that freights having attained their maximum, and prices their minimum, at the beginning of last month, are now about—the former to decline, and the latter to rise. In fact freights have declined 11s. or \$2.64 per ton, or 13 cents per cental, while wheat has rose 15 cents per cental, and that, notwithstanding that a decline of from six cents to eight cents is reported in the Liverpool market. There has now been exported 154 cargoes or 4,340,000 centals of wheat, and including flour there has been exported nearly 4,700,000 centals. There are now thirty-four ships in port chartered for wheat, which will carry over 1,000,000 centals, thus making 5,700,000 centals of our export surplus already provided for. And when it is considered that now with not quite one-half of the harvest year over, there are one hundred and sixty vessels on the way, which can carry about 5,000,000 centals more, and that a very large quantity will be exported as flour, it is evident that we are already fully provided with all that we need of tonnage. The result will be most probably that before three months are at an end tonnage will have gone down to £4 and wheat will have raised to \$2 per cental. For the sake of our agricultural readers we are glad that there is at last a prospect of remuneration for their last years' labor in store for them.

NURSERY NOTICES.—Several new advertisements appear in this issue, telling our readers where they can obtain choice and reliable trees, plants and seeds. There are no classes of people whose business we like to assist in extending so well as our tree-growers and seedsmen. They beautify the country, and there is no danger of farmers and ruralists planting any too many trees, or seedsmen introducing too freely improved seeds. And now is just the time to make known where the best nursery stocks and the freshest and purest seeds are to be found.

THE HORSE DISEASE.—There are rumors to the effect, that a disease similar to the one so prevalent at the East, but of a milder type, has made its appearance among the horses of this city; but we doubt its presence here, as after careful inquiry we can find nothing that appears any nearer to the real malady, than severe colds and some fever in a few instances. Owners of horses cannot be too careful in exposing their horses to cold and sudden changes, and to the close, impure air of too many of our city stables.

THE OAKLAND FARMING, HORTICULTURAL AND INDUSTRIAL CLUB meets on Friday evening, Dec. 13th. The committee will report on the best varieties of fruit and shade trees, for our streets and roadsides in Oakland and its vicinity. A report is also expected from the committee on the California Farmers' Union address.

ANGORA GOATS. — Messrs. Cummings & Creggie, of Georgetown, El Dorado Co., have selected and purchased from the flock of N. Gilmore, of El Dorado, El Dorado Co., 250 head of ¾ and ¾ blood ewes, and four head of pure blood, and design grazing them near Pilot Hill in the same county. G's flock of about 1100 have done splendidly in that vicinity this season.

CATTLE DISEASE.—We have received an interesting letter from W. R. G., of Daylor's Ranch, Sacramento Co., Cal., on the subject of feeding cattle with hoga, and the loss incident thereto, which we received too late for this number. It is important and will appear next week.

MILITARY TOURNAMENT.—The first grand Military Tournament of the battalion of the California Military Academy of Oakland, (McClure's), will take place at Woodward's Gardens on Saturday, December 7th, 1872.

Ex-Gov. H. H. HAIGHT has been elected to fill the vacancy caused by the death of the Hon. Edward Tompkins in the Board of Regents of the California University.

SAN JOSE FARMERS' CLUB.—No proceedings this week. Our reporter says, the Club adjourned over, in respect to the memory of Horace Greeley.

ON FILE.—Best 20 Apples, W. H. P.; A Gopher in Trouble; Cost of Gathering an Acre of Almonds.

THE LARCH TREE.—Thomas Meehan says he has never known any trees of the European larch to produce perfect seeds in America.

AGRICULTURAL NOTES.

ALAMEDA.

Transcript, Nov. 26: HEAVY FROSTS.—During the last three nights this city and adjacent country have been visited with the severest frosts of the season. More than this, rivulets and standing water in the foot hills were skimmed over with ice an eighth of an inch in thickness.

COOL.—The mercury at 3 p. m. yesterday stood at 58° in the shade.

HEAVY FROST.—Farmers in town from Livermore yesterday, report very severe frosts in that valley during every evening of the last week.

CALIFORNIA CHESTNUTS.—A. D. Pryal left with us yesterday a regular old-fashioned New Jersey chestnut burr, green and fresh, but partially opened, disclosing the full and ripe nuts nestled within. The burr was taken from a tree in the foot-hills of the San Pablo Range. This nut is indigenous to California. We hope to see it cultivated, for the nut is now rare and dear.

THE WEATHER.—Cloudy, foggy, cold, damp and generally dismal in the extreme—just what the farmers want. Thermometer 56°. Wind variable.

Transcript, Nov. 30: ARTESIAN WELL.—At the Gas Works an artesian well is being sunk. It has already reached the depth of two hundred feet.

BAD WEATHER.—Whilst we on these sunny Pacific slopes are reveling in delicious weather, our neighbors beyond the Rocky Mountains are shivering over stoves and furnaces, and plowing their way through snow storms. Friends last evening who expected to meet at the Market street station friends and relatives from the East were woefully disappointed. The Westward bound train arrived at a very late hour, having been detained by snow storms in the Black hills, and around Bryan in Wyoming Territory. The precautionary measures taken, however, by the Union Pacific Railway Company will prevent any such prolonged detentions as occurred during last winter.

ANOTHER INSTALLMENT.—After a brief lull in the storm of yesterday afternoon the rain set in again with renewed vigor in the evening. The aqueous distillation promises to be copious enough for the farmers to loosen their soil, and prepare their ground for seed. The storm has been general throughout the northern counties, and extending as far south as Santa Cruz.

MARIN.

Journal, Nov. 30:—RAIN.—Our thirsty fields and hills had a good drink on Thanksgiving evening. Copious showers fell through the night and continued yesterday, though we have not access to a pluviometer, and cannot tell the depth of the fall. The rain storm was accompanied by thunder and lightning frightfully loud and vivid. The thunder was very peculiar. It shook the houses like an earthquake, and many were alarmed much the same as they are by that phenomenon. The thunder did not "peal on peal afar," it did not boom and crash with intermittent sounds; but it came in long, unbroken rolls, startlingly near and terrible, and far surpassed any similar demonstration we ever experienced this side of the continental divide. The rain will be of great service to all our people, and if the present mild weather continues will start the feed abundantly.

NEVADA.

Republican, Nov. 30: THE WEATHER.—The state of the weather is a matter of general comment. During the last 24 hours Truckee has been visited by one of the warmest rains ever known at any season. To-day the sun shines as clear and warm as if it were August instead of the last of November. At this time of year the wetness in this region usually comes down in the form of snow. People here have been waiting and expecting winter for a month, and still they are obliged to put up with delightful spring weather.

TEHAMA.

Independent, Nov. 30: LARGE SHIPMENT OF POULTRY.—Herman Gyle, of Tehama, shipped by Monday morning's train a full car of dressed turkeys to San Francisco. The San Francisco *Bulletin* of a few days since noticed that a car of dressed poultry would arrive in that city from Red Bluff the first of the week. This was undoubtedly the car mentioned above, and loaded and shipped by Herman Gyle from this place. Mr. Gyle will continue the shipments of poultry at the rate of one car per week for the next six or eight weeks.

SAN JOAQUIN.

Independent, Nov. 26: MOUNTAIN APPLES.—The excellence of the apples and pears produced on what is known as the marble or limestone range, which traverses Calaveras and Tuolumne counties, has long been recognized by judges of good fruit. In the neighborhood of Murphys, Columbia and Sonora, apples are produced which are unsurpassed, if equalled, in the State.

Six car loads of wool, two of merchandise and one of fruit, went East by the Central Pacific Railroad on Saturday morning. J. P. Lowell & Co. shipped 300 hides, 500 sheep skins and 8,000 pounds of wool.

D. M. Harwood of the Lone Hill Vineyard in Santa Clara county, besides his vintage of 6,000 gallons of wine, has sold 150 tons of grapes this season, with 50 tons yet on hand. This is from a 120-acre vineyard, only from four to six years old.

FROST.—A heavy white frost and an unusu-

ally chilly atmosphere greeted early risers yesterday morning. Weather prophets are divided in opinion as to the signs, some contending that frost prognosticates early rain, while others sagely and solemnly avow their belief that it is a sure indication of a wet winter. Of the movements of wild geese, field mice and chipmunks, etc., we are advised, hence we conclude that there will be weather of some kind, and if we live any great length of time, we will be likely to ascertain the state of the atmosphere "in those days."

AGRICULTURAL SOCIETY.—BOARD OF MANAGERS.—The first meeting of the Board of Managers of the San Joaquin Valley Agricultural Society, elected at the last annual meeting, was held last Saturday, November 30th. There were present Caleb Dorsey, President; J. R. W. Hitchcock, Vice President; F. Hines, Treasurer; and H. T. Compton, Secretary. The meeting was called to order by President Dorsey. The Secretary read the resignations of the following named officers, who were elected at said meeting: Geo. West, Vice President; and Andrew Wolf and S. V. Tredway, Directors. On motion of Mr. Hines the resignations were accepted. On motion, the Board then proceeded to elect officers to fill the vacancies caused by such resignations. James Crozier, Esq., was nominated as Vice President, to fill the vacancy caused by the resignation of Geo. West, and was unanimously elected. John H. O'Brien, Esq., was nominated as Director to fill one of the vacancies caused by the resignation of Messrs. Wolf and Tredway, and unanimously elected. Mr. Hines moved that the election of a person to fill the other vacancy be postponed until the next meeting of the Board. The motion was carried.

FARMERS' CLUB.—No meeting of the San Joaquin Farmers Club was held last Saturday. The interest in the affairs of the club seems to be dying out.

SACRAMENTO.

Folsom Telegraph, Nov. 30: Wood is getting to be both scarce and dear in the foothills, as the hills are rapidly being stripped of timber for fuel. This has been going on for years, until live oak wood has now run up to seven dollars or over, per cord.

The weather has been exceedingly cold for a few days past, ice having formed about here for several nights during the past week. At Kelley's Creek in El Dorado county, on last Wednesday morning, the thermometer stood at 22 degrees. At Sacramento, also, ice formed on the slough.

SILK.—We understand that the Natoma Water & Mining Company intend to set out next spring, a large tract of land in Mulberry trees, adjoining their vineyard at Alder Creek. It will not be long, before a Mulberry plantation will be worth more money than a vineyard.

GAME ABOUT LATROBE.—The region about Latrobe, in El Dorado county, on the line of the S. V. & P. R. R., abounds in deer, quail, and wild hogs. A number of deer have already been killed this season. The sportsmen about Latrobe own a number of hounds with which they hunt deer in the rugged hills. They are good shots and always bring in some game. If a sportsman wants rough sport that requires nerve as well, let them stir up a wild boar from his lair, in the dense chaparral, and they will have their fill of it. The hunters tell of one that has been hunted and shot at for years, but so far has defied all attempts at his capture. Quail also abound. On lost Tuesday evening we saw one hunter bring into C. E. Duden's place, forty-two quail that he had bagged that afternoon. This is the place for city sportsmen to visit if they desire to find game and plenty of it, and to be courteously and hospitably treated, and is easy of access by means of the S. V. & Placerville Railroad.

STANISLAUS.

News, Nov. 29: FINE GOATS.—On last Monday a band of seventy-two fine Angora or Cashmere goats arrived at this place on their way to the hilly region near Coulterville, in Mariposa county. The goats are a portion of a larger flock, belonging to Mr. James Toay, of Mineral Point, Wisconsin, and were shipped out here overland by him. They are all looking well notwithstanding they made the trip to this place in less than two weeks. The flock taken as a whole, is the best we have seen. Mr. Toay pointed out several of the band that will next year shear a fleece of six pounds each. They range from three-quarter to full bloods. They will be left in charge of the Hope brothers, near Coulterville.

FROST.—The first severe frost that has this season visited our town, was last Monday night. Since then the leaves of the fig and many other fruit and shade trees have begun to turn yellow and commenced falling. The orange and lemon, however, still look thrifty.

Every night, stretching away towards the horizon that spans around, as it were, the vast wheat fields in our valley, can be seen almost one continual circle of lights, caused by the burning of stubble, stack-beds, and even straw itself. But one year ago farmers were anxious to secure such food for their stock, at prices ranging from eight to ten dollars per ton.

SOLANO.

Chronicle, Nov. 30: WEATHER.—The first considerable rainstorm of the season commenced in Vallejo about three o'clock yesterday afternoon. It sprinkled at intervals from that time onward until dark, when the flood-gates of the firmament seemed to have opened at once. It came down with a rush, and has been keeping up the lick ever since with surprising steadiness. The streets and roads are

flooded, and the ways of pedestrians are hard. "Heaven's artillery" has been pealing occasionally during the period. Present indications do not point to an early resumption of good weather.

YUBA.

Appeal, Nov. 26: RAISIN CURING.—Our vineyardists raise the best grapes in the State, and there is no good reason why they should not enter into the raisin business extensively. The best raisins, fully equal to the Malaga, can be produced by careful preparation. A Mr. Rule, of Napa county, an extensive curer of raisins, gives this way of making: He first immerses the fruit in a weak alkaline solution, then dries it by solar heat, twining it carefully when partially dry. He protects it from night dews by placing it on square flat forms made of shakes and lathes, piled on each other in the evening, to be spread out in the morning. He estimates the labor at one cent per pound, and that from two and a half to three pounds of Muscat grapes will make one pound of raisins. Drying-houses, in his opinion, are not certain to produce good results.

Appeal, Dec. 2: FARMERS' CLUB.—Met pursuant to adjournment, Nov. 30th, at the Court-room on Saturday. Vice-President S. R. Chandler in the chair, and J. H. Esselstyu acting as temporary Secretary. After dispensing with the minutes of last meeting, a spirited discussion took place relative to many farming interests. Mr. G. E. Brittan paid one dollar and was declared a member of the Club. The Club adjourned to meet in two weeks, at the Supervisors room in the Court House, Yuba City.

OREGON.

Mountaineer, Nov. 16: On Sunday night last the snow commenced falling and with but little cessation has continued up to the present time. As far as the eye can see is one vast sheet of snow from 10 to 15 inches deep, and we learned that in the Blue Mountains and Grand Ronde Valley it has fallen to the depth of from four to five feet. Should this state of things continue throughout the winter, it will be hard on our stock raisers. Two heavy winters in succession is too much, and for the benefit of our friends who are thus interested, we pray that Divine Providence will let up a little and give us considerable more sunshine between times.

WASHINGTON.

Walla Walla Union, Nov. 23: A THAW.—For nearly two weeks our valley has been covered with snow to the depth of eight or nine inches, and during the greater portion of the time the weather has been very cold for the time of year. Nobody was ready for it, and everybody got tired of it as soon as it came, and immediately commenced wishing for a friendly "chinook" wind to come and melt the snow. It did not come, however, until last Thursday night. At that time the warm wind commenced to blow and kept it up until we went to press last night, at which time there was not more than half as much snow in sight as there had been the night before. From all appearances it would seem that in a day or two the snow will have entirely disappeared. No one will grieve at its departure.

Monday Payments.

Is it best to pay weekly wages on Monday instead of Saturday? The question, at all events, is beginning to be agitated, and may at any moment assume serious importance. The one and only argument of weight so far adduced, is that the comparatively uncultivated and morally less trustworthy classes of working people who draw weekly wages, will be less exposed to the temptation of extravagance or debauchery when their money is paid them at the opening of a working week, than when they have a leisure evening and Sunday holiday before them in which to spend it. The argument looks plausible, and is one of those whose validity will be best tested by actual experience and statistics. It is possible that the dissipated or irresolute factory-hand who now finds the charms of a Saturday night spree, followed by a long Sunday's stupor and recovery too much for his power of resistance, will be in some degree protected against himself, when he receives his little weekly windfall at such season as renders indulgence less convenient, or indeed practically almost impossible. To be drunk on Saturday night means only a headache on Sunday, but on Monday evening is apt to bring delinquency the next day and consequent dismissal.

That a sadly large share of the wages received by our working people on Saturday night practically finds its direct way to the gin-mill, or some scarcely less hurtful form of dissipation, it is impossible to doubt. But it is open to grave question whether postponement of payment would radically or even seriously affect the matter. A debauch on Monday is as hurtful as on Saturday—and where this is practically impossible, the taste for dissipation will be pretty sure to invent some way of satisfying itself even in the dead low tide of the weekly purse. Publicans are of all men in the world the ones who know best how and when to trust judiciously for their own interest, and the score which is chalked up—on an imaginative basis—to-day, may be settled in sad reality next week.

Then, if this enforced hebdomadal economy applies to wrongful expense, why not to rightful

as well, and if Phelim, in Saturday impecuniosity, must go without his whiskey, how about Bridget's chicken or the children's airing next day?

But the evil, after all, seems of far too wide range, of far too vital moment, to be treated with such secondary considerations and merely symptomatic remedies. We must attack the source of the disease, not its phenomena. Instead of merely making it inconvenient for the workman to spend his earnings in vice, we must address ourselves, sooner or later, to the far higher problem of rendering it distasteful, repugnant, and, if it may be, morally impossible. And to do this, we must begin with the workman himself, not his wages.

The question needs more elaborate treatment than our present space permits, but by way of suggestion we would only allude, among other agencies bearing on the point, to the wise and noble charities instituted in many of the great mill corporations of England, by which the operatives are invited to pleasant evening clubs and lyceums, with all that can make social intercourse cheerful, entertaining and improving, nothing to make it dangerous. Suffice it for us to have given the hint; who will carry it further? Depend upon it, it is wasteful work, this trying to lead off our neighbor in the indulgence of his fascinating vices; take out the fascination, or give him a better one—that is the radical way, and the shortest in the end.—*Scribner's for December.*

THE APIARY.

California Bee Culture.

Mr. J. S. Harbison, whose original apiary is situated three miles below Sacramento, on the Sacramento river, has recently returned from San Diego county, where he has just taken 308 hives of Italian bees, without losing a single swarm. He has his five apiaries located in the mountains of that county. He finds the highest and roughest mountains there afford the best bee feed. The reasons are that—the rains are more plentiful in the elevated regions, and that stock do not reach the roughest and highest places to destroy the growth of flowers furnishing the best feed for bees. These elevated apiaries are located so that their millions of workers will have near access to mountains from 2,000 to 3,000 feet in altitude. One apiary is situated 1,500 feet above Cahoon valley.

The higher the mountains the longer the feeding seasons last. The bees range over the lowest sections of the mountains and the southern exposures, early in the season, and the higher points and the northern slopes in the later months.

In San Diego the bees begin gathering within thirty days after the rains commence—sometimes in December. They continue to collect sufficient for a livelihood until as late as August. This year no rains falling in November the feed will not commence before January, at least.

Amount of Honey Produced.

The past being the third dry season in succession, the yield of honey has been less than one half the average in San Diego. Another successive dry season would be still worse. In the central counties of the State, 70 pounds per hive is a good yield. In southern counties perhaps 100 pounds for stationary bees would be about the average, going some years over 130 pounds. As high as 200 pounds has been taken from a hive by Mr. Harbison on the Sacramento river, years ago, when wild flowers were more plentiful than they are ever expected to be again in California.

Superior Honey.

In "earlier days" in this State any quality of honey would sell well. Now the choicest kinds are alone profitable. Honey gathered in our central valleys soon "candies," but the San Diego honey does not. Besides, the latter is of a lighter color and better flavor. One hundred and fifty hives are enough for an apiary. Their location should be

Eight to Ten Miles Apart

For Italian bees, as they fly from five to seven miles in each direction. The common black bees only about three to four miles distant. Mr. H. has, however, one apiary of 300 hives in what he considers a specially favorable location. A certain location

In El Dorado County

Mr. Harbison says does tolerably well, but the flowers there bloom too early, so that the best feed is used at the time the bees are rearing their young, and will not garner a good surplus.

Italian Bees Improve Here.

Mr. Harbison observes that the Italian bees have improved by their importation here during the three past years, showing better in size and color.

Honey for the Mormons.

Last year a car load of Italian hives were sent by Mr. Harbison to work in Utah. Their success there has resulted in an order for another car load which he has now in readiness for shipping about the 1st of March, the proper season for transportation thither.

THE FARM.

Hop Culture.

Experience in the culture of hops in Cal. has satisfactorily demonstrated the safety and profits of the pursuit. Several years ago very successful efforts were made in this business on the borders of the Mokelumne river, but a ready sale could not be obtained for the product. Brewers complained that California hops were too strong, and they, therefore, pretended to favor imported trash, comparatively stale and lifeless. There are vast areas of land along the rivers in this State peculiarly adapted to the growth of hop vines, and for maturing and preserving the flowers our atmosphere cannot be surpassed, and it is really a matter of astonishment that the business is not pursued on a more extensive scale. Hop culture, in many parts of the United States, has become quite an extended and important industry, a source of much wealth. The present year the crop has been harvested in good condition, and the quality, generally, is reported to be satisfactory. It is estimated that the quantity this year will exceed the yield of 1871 by not less than ten thousand bales. The yield in Wisconsin is nearly twice what it was last season. An Eastern journal estimates the total yield in the United States, the present year, at about 14,000,000 pounds or 70,000 bales, of which amount 6,700,000 pounds are raised in New York, four millions in Wisconsin and Iowa, one million pounds in other Western States, and in the Eastern and remaining States, 2,300,000 pounds. The quantity of old hops on hand fit to use is less perhaps, by fifteen thousand bales than could be relied upon last year; consequently the total supply in this country is less than it was then. The demand from manufacturers will be greater, for the brewing interest is steadily increasing. Foreign hops will be in demand and can easily be had, for the English and Continental crops are both reported to be large. The *Brewers' Journal* (Eng.) says that "1872 will be the year quoted for a memorable yield." The belief is that the crop of the United States will fall considerably short of supplying the home demand, hence importation will prove a necessity, which, in such measure would have been obviated had the requisite sagacity and foresight been exhibited in California. It is computed that hops purchased in Germany for 25 cents, gold, must sell in New York at 38 cents currency to yield a profit. Californians might soon become millionaires by raising hops at considerably less than the quoted German price.—*Stockton Independent*.

A Talk About Seeds.

Eds. Press:—I promised last spring to write some for your excellent paper, but owing to the busy times and the lateness of the season I have forgotten it until now, when the approach of seeding time may make the following remarks appropriate and useful. But first I must beg you to excuse my inability to write in the English language as well as the subject deserves.

Four years experience in gardening in California have too often proved to me how difficult it is to procure seeds here good and true to germinating, as to variety; and every farmer or gardener must have had a like sad experience. I now try a quantity of every kind of seeds before the general seeding, and as the trouble is little in proportion to the benefit, will advise others to do likewise.

Perhaps it would be best to import seeds direct from Eastern seedsmen, it can be done profitably, but this is only to be recommended with regret. If our seedsmen would appraise the price in their catalogues it would be a good step forward. Of course I do not think the seedsmen intentionally deceive us, but are themselves deceived, or do not use sufficient care in the selection of stock. I believe much is bought from Chinamen and other unreliable sources.

You will often see the smallest and least developed plants suffered to bear seeds, that biennial plants (by too early sowing) bring seeds the first year, which will do likewise the next generation; many times similar species are allowed to bear seeds too near each other, and thereby intermix; we may therefore obtain new varieties, and perhaps a few good, but this is rather outside of our calculations; for the greater part we only get a miserable product of no value. To retain or improve the quality and quantity it is absolutely necessary to choose the very best plants and flowers to gather seeds from.

The length of time the several kinds of seeds retain their germinating power under ordinary circumstances is so different, that the greatest care is needed in the use of seeds; many will grow well five or more years old, while others only one year, and some not even that long. It seems to be the sellers' place to know and try every kind of seeds in regard to germination, and save their customers the trouble, as they cannot always do it conveniently. The annoyance it causes to look in vain day after day for the expected plants to come forth from the ground need not be described, everybody knows it too well; when at last all hope is gone, it is per-

haps too late to resow, and money, labor and season is lost.

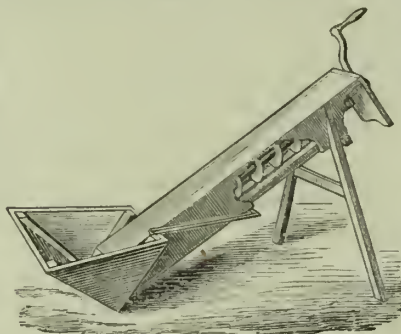
In catalogues everything is warranted true, genuine, fresh, with other good qualities before trial; far better when it can be called so after trial. I would say something about tree-planting, but enough for to-day, as long articles are tiresome for some of our readers. C. M. P.

Deaf, Dumb and Blind Institute, Berkley, Nov. 21st, 1872.

Apparatus for Mixing Wheat with Bluestone.

We give herewith an illustration of a new and very convenient device for mixing bluestone (sulphate of copper) with wheat, preparatory to sowing. Referring to the engraving, the lower part of the device consists of a box or hopper, made V-shaped, with one side elongated for the purpose of more conveniently receiving a spout, which stands at a proper angle for operating a screw elevator.

The upper end of this spout is closed and a shaft operated by a crank, passing longitudinally through it, with a wide flange secured spirally around it, and extending down into the hopper as shown. A crank attached to the upper end serves to work it so as to cause it to elevate whatever is placed in the hopper. Midway between the middle and upper end a slot is made in the bottom of the spout covered with a perforated screen. To use the mixer the bluestone, or sulphate of copper solution is poured into the hopper and the wheat placed in



BEST'S BLUESTONE MIXER.

the solution. The shaft is then revolved and by means of the spiral flange stirs up the wheat and elevates it. During its progress up the spout the wheat partly draws off the solution, but in passing over the screen, as described, the water drains off through the slot, whence it may be carried back to the hopper by a conducting spout. The device is simple and inexpensive. It has been recently patented, through the SCIENTIFIC PRESS PATENT AGENCY, by Mr. Daniel Best, of Marysville, the well-known patentee of Best's Separator.

Cultivation of the Poppy.

The Use of Opium—Its Culture in Southern California—Experiments at Riverside—Arizona Adapted to the Growth of Poppy—An Old Project.

It is not our purpose to defend the use of opium as an exhilarant, neither do we propose to encourage the pernicious practice of chewing or smoking it. In writing this article we recognize it simply as a drug that can be manufactured with great profit in the section of country in which we live.

The poppy, the plant from which opium is produced, has been experimented with very successfully in Southern California and in Arizona. The berries of the plant attain a large size in the sections mentioned, and their sap produces as fine an article of commerce as that furnished by the Turkish or Bengalen provinces, long recognized as the leading opium producing places of the world.

The climate and soil of Southern California are analogous to those of the countries where the poppy grows in its greatest perfection. The same characteristics are noticed in this State and in the neighboring Territory of Arizona, as in the portions of Asia where grows the plant from which the opium is made. The same long dry seasons peculiar to the southern portion of this coast are also noticeable there, and the hills and valleys where the drug is produced in the greatest abundance resemble the apparently barren and unattractive hills of our own country.

There is no question but that the poppy could be grown here in abundance; neither is there a doubt but that the quality of the drug would be fully up to that imported from Asia. It is true that the wholesale drug merchants of San Francisco have attempted to discriminate against the home production, but an analysis of several samples grown at Riverside in San Bernardino county, and other places in the southern portion of the State, establish the fact that it is equal to the best in the market. The opium of Smyrna commands \$7.50 per pound, and that grown in Southern California should bring fully as much.

We will not attempt to describe the process of cultivating the poppy, but will simply mention a few of the advantages its culture

possesses over any other product that could be grown here. Primarily the soil is especially adapted to it, and the climate as well; land which would be utterly useless for every other purpose, could be made to produce the poppy in great abundance. The weakest persons can be made useful in its cultivation: women and children would find abundance of employment. It requires but three months attention during the year; the remainder of the time the owner of the land and his assistants could be profitably employed at some other occupation. Ten acres of the poppy could be put under cultivation by ten persons; only four of them need to be able field hands.

An acre of poppy yields over forty pounds of opium by bleeding the pods, and eighty pounds by the decoction of the stems and leaves; the former product contains double the quantity of morphia, and of course brings a corresponding price. The market value during the past twelve years of the drug has never been less than \$5 per pound, and is not likely to fall to a lower figure for many years.

Considering the great economy that can be exercised in growing the poppy, it will be seen that there is large room for profit in its production. The fact that so little labor is required to bring about the results we have given above, should we think, prove an incentive to plant to all who are interested in ascertaining what the soil of this country is best adapted to.

While speaking of the drug, we would remind our readers that several years since, a vigorous effort was made to introduce the poppy into Arizona. A model farm was proposed by the originators of the idea, and it was determined to import experienced men to assist in the business, who were in turn to be assisted by friendly Indians who were to be employed for that purpose. Like everything contemplating the advancement of Arizona, it failed. The Apache made his power felt; and the most daring of the company did not care to risk their lives, even though great profit promised to result.—*San Diego Union*.

Forest Tree Culture.

Paper Read Before the Oakland Farming and Horticultural Club, by A. D. Pryal, November 22d, 1872.

It has often been remarked by tourists and others, that, if we had more trees, or forest scenery, growing around our bay, that we would have the finest natural panorama in the world. The time is not far distant, when this will be accomplished. Forest culture is in its infancy. If land owners would earnestly begin in this good work, we would soon see a lovely landscape. Our brown hillsides would be covered with verdant groves and our monotonous valleys would suddenly form outlines of forest grandeur, the overshadowing Coast range crowning the varied scene. "The groves were God's first temples," and the man who plants trees in this age of "hoodlumism" deserves to be half "canonized." The arboriculturist works for the future, the great good that he does throw their shadows before him; "he who runs may read his" history. Trees in groups, trees in belts, trees in straight lines, for hedges, beautiful and fragrant blossoming trees. The farmers who have an interest in the great future of California should be foremost in forest culture, it will be profitable. Do you not every day witness the destruction and waste of our native forests? Will you wait till there are no trees to furnish you with seed? The woodsman's ax is now gleaming through our primitive forests, from Maine to the shores of our golden Pacific Coast.

I will now call your attention to our own forest treasures—*Sequoia gigantea* or *Washingtonia*—this elegant evergreen tree is the monarch of our forests; *Taxodium or sequoia simplicifrons* (red wood,) this remarkable tree is fast disappearing, there are very few of the young plants raised in our nurseries; there is no demand for them.

The older countries of Europe do better. They send out collectors who gather the seed for their respective governments.

The Prussian nobles vie with each other in planting our native trees; England, Ireland and France, have young forest of our Conifers, and Cypresses. Our pine trees are remarkable for their symmetrical beauty, and the wood is valuable and useful. *Pinus insignis*, is well known for its rich foliage and useful wood *lambertiana* (large sugar pine); this tree grows to the height of two hundred feet. Downing says that it is undoubtedly one of the finest evergreens in the world. The cones of this tree measure sixteen inches in length; the seeds are roasted and eaten by the Digger Indians.

Pinus grandis *P. Sabiniana* and *P. Nobilis* deserve better treatment and unless we introduce them into our artificial forest culture, we will evidently lose them. The enormous quantity that is used for railroad construction, for mines, house building, water-flumes, bridges, pavements, culverts, wharfs, ship building, is depleting our forests. Perhaps you will say there is an abundance of them. Where are they? Is there not a scarcity of ships? Lumber is now selling at a high price—what will it be twenty-five years from now? In the older country the houses are built of brick, or stone; we build ours of wood, our fences, are wood. But we have no "wooden walls." The "Alabama" burned them. English ships carry our grain. But mark, vast quantities of American timber entered into the construction of these very ships. In the *pinus nobilis* noble silver fir, and *pinus*

amabilis lovely silver fir—every farm should plant two or three thousand of these fine firs, they grow very readily from seed. The Monterey cypress for windbelts or shelter tree, stands unrivalled; it forms beautiful hedges, it grows well on adobe soil, it is elegant for grouping, and from my own experience this tree affords the best shelter for farm homes.

Our native oaks, ornamental and noble, grow thrifty in most any favorable soil. I have the trees growing in my nursery, near Temescal creek, that were planted fourteen years ago, that would conceal in their branches another Prince Charles. *Quercus virens*, evergreen oak forms a beautiful tree; when young it may be pruned into fine forms; it often assumes an immense growth in situations on our coast range. It grows well around our bays and inlets; the roots penetrate the hardest sub-soils to find moisture; they flourish on the rocky hill sides. It is highly necessary that this interesting tree be more generally planted. *Quercus alba*, or white oak, this tree grows more inland. The timber is valuable; it is used by the coopers, and most of our wine barrels are made out of this wood. Great quantities of this timber is now used for fire wood and fence rails. I do not know of any plants of this species that have been cultivated or propagated in this country. There are many fine foliage oaks that are natives of this State, that farmers might plant along our highways and avenues. The public school yards and highways are lamentably naked. With a little enterprise we can soon change the scenery and ultimately prove that we have "Alamedas" in reality. There are so many ornamental and useful trees, that are natives of this State, that we do not trouble ourselves to inquire about them.

Nursery men and gardeners who love their calling should aim to inculcate a true knowledge of forest tree culture. They should consider how important it is to the public to know that useful plants and trees, can be grown without being stunted, dwarfed and mutilated. Plants, and young trees should not be grown in pots, for forest culture; the pot naturally "corkscrews" the young roots, and when artificial supports are removed the first high wind will level them to the ground. I have heard people say that their *eucalyptus* trees are always falling down when they are two or three years old. This is not to be wondered at, when the young roots are coiled around in tangled masses, it is not surprising that they strangle to death. This disastrous injury can be avoided, first, by the nursery man growing plants and trees in the open air. Second, by purchasing direct from the nursery, plants that have their fibrous roots spread out; tree planters should have an eye to the roots, branches will take care of themselves. The oaks should be nursed by the Monterey cypress, *Cupressus Macrocarpa* or the *pinus insignis* they afford the best shelter, the trees ought to be planted closely together, about four feet apart; they would give 3,000 trees to the acre, 500 Monterey cypress, for wind belts, 1,000 *eucalyptus globulus*, 500 oaks, 250 redwood, and 240 *pinus insignis*, 500 *eucalyptus viminalis*; thin the fourth year, and continue thinning out till the trees stand eight feet apart; by this process the trees gain in growth very rapidly, so much so that the trees will surprise those that plant by the *quincunx* method; if you plant in squares four feet apart each way, there will be 2,722 trees to the acre; by this plan you gain 278 trees, which will add materially to the profit and investment. The trees could be cultivated for one or two years and they would range in the angles of equilateral triangles; you will now perceive that the trees would gain more shelter than if planted in rows or squares. The trees would grow up straight as they do naturally in their native groves. Mr. Main who wrote on tree planting, many years ago, says: "Pine and fir timber for the use of builders, and mast makers, cannot be so free from knots, and it is impossible to have it so, unless planted and trained up as closely as possible; when so standing, no lower branches can live to distort the longitudinal structure of the axis. The center of such stems, when cut up for use, only shows the diminutive basis of the first laterals; but every concentric layer of wood imposed after the first branches decay is uniform in longitudinal arrangement, and is uninterrupted by knots."

The forests of commercial nations are now closely watched. The increasing wants of civilization creates a demand for great quantities of lumber. Most of the natural forests of Europe have disappeared. The Governments of France and Germany, derive a large revenue from the Royal forests; the Crown forests of Great Britain, cover an area of 150,000 acres; most of these forests have been planted within the last fifty years. There is not a land owner in Great Britain or Ireland, but is planting trees, as coal is now becoming scarce, and a few more years will exhaust the coal mines of England. It will then be our turn to carry coals to New Castle. Yes, and timber; the growth of our artificial forests will be in demand. The farmers of California have neglected forest culture too long; little has been done in this good work; they are not yet posted on the value of artificial timber plantations. An acre of land will produce more fire wood in ten years than an ordinary farmer can burn in his life time. He can grow it on the poorest land; there is no waste of time, labor or capital; he has it growing at his door. It now remains for our farmers, nurserymen and gardeners to propagate and plant millions of these trees, that I have attempted to call your attention to. Now is the time to begin systematically; intelligent farmers know the importance of this. Science has opened the vast treasures of the vegetable kingdom, let the practical results be our reward.

USEFUL INFORMATION.

The Manufacture of Tea Trays in the United States.

It is only until recently that the manufacture of japanned tea trays has been made a practical success in this country. It appears that there were two difficult objects to be secured: first, a finish that would retain its gloss; second, a sheet-iron equal in quality to the Russia sheet-iron. Even the English tray, in some instances, after exposure to the atmosphere, has a blue caste—termed a bloom; and after this change, will readily scratch. The Newark Tea Tray Company, however, now present a tray, the perfection of which is due to Mr. Walter M. Conger, the inventor of an improved process for manufacturing and finishing these goods. Mr. C. is also manager of this company.

The iron used by the company is made expressly for them by a Pittsburgh (Pa) iron firm, and the grade of this iron, it is said, is better than that used in the making of the English trays. In producing a tray the iron is cut in oval shape by means of a pair of circular shears, in the style and size required, from 10 to 28 inches in length. It is then placed under a large stamping press; (three or four plates may be placed under this press at the same time.) The drop-hammer of this machine weighs 1,000 pounds, and in its fall is capable of giving a pressure of 36,000 pounds. The plates are now blank trays, the edges of which are turned down and wired by a very ingenious little machine. Each tray is then set. This is done by hammering by hand, to take out any unevenness that may exist in the metal. After this the trays are cleaned, and, if found free from defects, are ready to receive three coats of Japaning, and placed in an oven for twelve hours with a temperature of 500° F.

After coming from this oven they are rubbed down with pumice-stone and circular brushes run by steam-power, then ground; the last is a secret process. After this the tray receives a coat of enamel composition. The utmost care is used in this process; the windows and doors of the apartment are kept closed; the floor immersed in water; the workmen not even permitted to wear any clothes, as the smallest speck of dust or lint would spoil the labor previously expended, and greatly depreciate the value of the tray. The enamelling being completed, the tray is sent to another department for ornamentation. This work, though done mostly by boys, is a very tasteful operation. The tray is then baked about twelve hours, when it receives a coat of varnish over the ornamental edge only, to retain the ornamental designs, and baked again; this last process perfecting them for the storeroom, where each tray is examined, and those not up to the standard are rejected. They are then packed in paper bags, numbered and marked, and are ready for sale.

How Paper Stood the Fire in Boston.

Curious results have followed some of the experiments made upon charred papers and documents, and the examination of books in safes which proved worthless in the great fire. It has been found that what paper-makers call poor paper, paper considerably "clayed" stood the best test. Parchment paper, used for bonds and legal documents, shrivelled up exceedingly, and the print blistered so that it could be read when the writing was illegible. So it was with the engraved work on notes. The gilding on the account-books burnt and charred showed out as bright and clear as when the books were new, which brings up the question if to introduce gilt-edged account-books would not be well, on the ground that the gilt would stay the passage by fire to the pages within. Books crammed into a safe so that it was difficult to get them out, suffered considerably less than those that were set in loosely, and in some cases came out from safes in which everything else was worthless, so far preserved that the figures on the pages could be deciphered. With charred papers which could not be made transparent by any light whatever used, it was found, after the employment of vitriol, oxalic acid, chalk, glycerine, and other things, that anything that moistened them to a certain stage—to which it was delicate work to get and not pass—made the lines, words and figures legible through a magnifying glass. It has been the almost universal experience that the led-pencil marks show out all right when ink marks cannot be distinguished. The success of the use of photography has already been noted.—*Boston Advertiser*.

How to DETECT SPURIOUS GREENBACKS.—An exchange gives the following: To discover spurious greenbacks or national bank notes, divide the last two figures of the number of the bill by four, and if one remains the letter of the genuine will be A; if two remain it will be B; if three, C; and should there be no remainder, the letter will be D. For example, a note is registered 2,461; divide sixty-one by four and you will have one remaining. According to the rule the letter on the note will be A. In case the rule fails, be certain that the bill is counterfeit.

Testing Wine, Beer and Vinegar.

Duclaux, briefly describing a system of testing the relative value of the liquids referred to, states that, when alcoholic or acetic liquids are caused to pass drop by drop from a narrow orifice, these drops are heavier in relation to the larger quantity of alcohol or acetic acid contained in the liquid under examination. Special apparatus are to be used for this method of testing.

The ordinary tests of wines are two kinds—the alcoholometer and tasting. The first is to prove how much alcohol the wine contains, and is based on the knowledge of the specific weights of absolute alcohol and water. Suppose a little glass is full from 1,000 grains of water, the same would get full from 792 grains of alcohol—it is one-fifth lighter than alcohol, and its resistance is immensely less. For the purpose now of ascertaining the strength of wine, an instrument has been invented; it is a glass cylinder which, at the bottom end, is ball-shaped, containing mercury. The cylinder is marked off into 100 parts called grades. Now, if you sink the cylinder in a mixture of ten parts alcohol and ninety parts water, the liquid will reach the 10 grade, which shows that it contains 10 deg. of alcohol.

The other test is by taste; the knowledge of which can only be acquired by time and experience. Suppose your judgment is required as to a wine; if it is Madeira, it would be necessary that you had tried the genuine Madeira, before and became, through taste and smell, fully acquainted with all its characteristics. So it is with all other wines.

Masonic Symbols as Trade-Marks.

Upon an appeal from the decision of the Examiner of Trade-Marks, Active Commissioner Thatcher has given a highly interesting decision in a case involving the use of Masonic symbols as a trade-mark:

He decides that, in view of the universality of Masoury, the mystic tie that binds all nations in one common fraternity, and the unchangeable characteristics of emblems appealing with the same force to the brotherhood in all parts of the earth, it is impossible to divest these symbols, or at least this particular symbol, perhaps the best known of all, of its ordinary signification wherever displayed, either as an arbitrary character or otherwise. It will be universally understood or misunderstood as having a Masonic significance, therefore as a trade-mark must constantly work deception.

The Commissioner adds: "I am clearly of the opinion, therefore, that the proposed combinations cannot properly subserve the ends of a trade-mark. Among Masons, with whom this token has a moral significance, its use in that capacity would undoubtedly be regarded as a base prostitution of it to mercenary purposes, while with others its mystic force would often dissipate its virtues as a trade-mark, and, perhaps, in some instances, place the article it appeared upon under a ban.

"Thus, if these trade-marks could be sanctioned they would tend to defeat the fundamental object of the trade-mark law, which is an offshoot of the ancient 'law merchant' and like that, designed to advance trade and manufactures."

For the above reasons the Commissioner decides that the Examiner of Trade-Marks was correct in his refusal to grant any exclusive use of any Masonic emblem as a trade-mark.

SEPARATING HAIR FROM SKINS.—Some months since our attention was called to an English patent process which is in itself a matter of no small curiosity to tanners, and which promises to make very great changes in the future of the fur business. The patent is for a process for completely removing the hair from a hide or skin and transferring it exactly as it left the hide or skin to a piece of muslin or other substance, leaving the pelt entirely uninjured for future tanning and finishing into leather. The process is a very simple one; the operation is as quickly performed as ordinary unhairing with lime, and with no more expense.

Mr. Charles H. Isham, of New York, who has just returned from Europe, saw the artificial skins made by this process at the store of the patentees in London, and brought several specimens over with him, as well as figures showing the cost of making them and the prices at which they sell. He also visited their workshop, and saw that the work could be done very quickly and at a low cost, as claimed by the patentees.

ARSENIC IN CARPETS.—Hallwachs asserts that not only green but red carpets contain arsenic, particularly those brilliant dark reds now so much in vogue. Samples of these carpets burned with the blue arsenic flame, gave off the characteristic garlic odor. Enough color to give a distinct arsenic reaction could be rubbed off with the finger. A solution in hydrochloric acid produced with copper the usual greyish precipitate of metallic arsenic.

REMOVAL OF INK SPOTS.—When these are of long standing it is difficult to get them out, since the iron has become thoroughly peroxidized and must be reduced. The following is recommended:—Water $\frac{1}{2}$ litre, hydrochloric acid 100 grms, tin salt 100 grms. Moisten the spot with this solution, keeping it moist until the color disappears, then rinse with water.

GOOD HEALTH.

The Modern Idea of Disease.

In an address before the Clinical Society of London, Sir William Gull remarks as follows on the modern idea of the nature of disease:—

Respecting the object we work for—this living organism of ours—one great advance has of late been made. We are acquiring a physiological notion of disease. Disease is no entity; it is but a modification of health—a perverted physiological process; and this must at all times be insisted upon. Were it not that we fear death, and dislike pain we should not look upon disease as anything abnormal in the life-process, but to be as part and parcel of it.

Few would now venture on a definition of disease; for in reality it is but the course of nature in a living thing which is not health. In health the balance of function is even; incline it to either side and there is disease. That being so, just as the life process constitutes an individual and puts him apart from his fellows, so must any alteration in it be individual, and not general. But to the ignorant, disease is an entity—an evil spirit which attacks us and seizes us. Hence arises the word "seizure," which, though in a somewhat different way, we still use, but with a protest. To the charlatan, disease is a set of symptoms to be attacked by a variety of drugs—a drug for each symptom. To us, disease is a life-process of a perverted kind.

Many states are not now called diseases which used to be, and there are still some to be expunged. Some people are always ailing. Some have feeble stability, and to them it is as natural to be ill as it is to others to be well; but this is not disease. So, too, aged persons get ill; but this is not disease—in reality it is natural change simulating disease, and when we try to cure such we use all the farrago of the chemist's shop to prevent the sun setting. So syphilis at last ceases in the system to be syphilis, and becomes an early decay.

It is curious to consider the various morbid agents at work within our bodies, the lines in which they work, and their seats of action. These as yet have been but little studied, and deserve attention. Thus, it is very doubtful if scarlatina begins in the blood, as we should all be apt to say, rather than in any other tissue or fluid. Let it be our object to find out where all these begin within the body, and how they enter the body.

In future, I hope, comparative pathology, which is just beginning to be studied, will teach us much; for in our bodies we men have many organs which are of little or no use to us, and are only relics of a former state of being. What, for instance, is the comparative anatomy of the tonsils? Were I to make a man, I do not think I would put tonsils in him. Yet these, and such like organs, in accordance with the general law, are more prone to disease than are the others which are of real use in the system.

I remember the case of a man who had a permanent vitelline duct. He had been out on a cold day, and the motion of the intestines twisted them in a mass round his persistent duct, and he died. I made a preparation of the duct, and wrote under it, "Cui vitam atque mortem dedit diverticulum." Every part of the body is alive, and has its own individual life and pathology, whether it be immediately required or not; only, if not required, it is more prone to disease than if it were. I could for instance, suppose a fetus of four months going to the doctor and saying, "I am going all wrong; my Wolffian bodies are disappearing, and kidneys are coming in their stead." Yet that is as much a condition of disease as some of those conditions of which I speak.

EDUCATION AND HEALTH.—It is impossible that the mass of men can be healthy, and so moral and successful, without some knowledge of their structure, and of its laws, which they must obey or suffer. How can a young woman be called educated who is ignorant of physiology, of her duties as a mother, of the divine art of nursing? How many men know anything of the relations of waste and supply in the nervous economy? Why, not one man in a hundred knows even what the stomach is made for, and the other ninety-nine are constantly transgressing rules they have never learned. We may take the old parable of the apple in the garden as an illustration of the way men's stomachs make havoc with their moral sense. Not one man in a hundred knows or suspects that God made the air to be breathed. Every part of his house may be reeking with miasma, the cellar full of all evil, partitions clogged with dormant mischief, and he never dreams of it, but goes on nailing down his windows and listing his doors. If we could only see the air we have once breathed over! Even the architects of our public halls and theatres and churches have the crudest notions of ventilation.—*Henry Ward Beecher*.

SALIVA A CURE FOR RHEUMATISM.—Some one writes to the editor of the *Medical Press and Circular* that he has repeatedly cured himself of rheumatism by rubbing the affected part with his own saliva. As saliva is too common to become an article of traffic, the new treatment is not likely to become popular.—*Pac. Med. Jour.*

TO REMOVE plaster of paris bandages, wet them with a strong solution of common salt.

To Sleep Soundly.

With many the inability to sleep, as a growing habit, is the first step toward certain madness; in every disease it is an omen of ill. Hence, to cultivate sound sleep, do not sleep a moment in the day time; go to bed at a regular hour, and never take a "second nap" after waking of yourself in the morning. Take nothing after dinner but a piece of bread and butter and one cup of hot drink—not China tea, as it makes many wakeful. Never go to bed with cold feet. Read nothing after supper, listen to nothing, talk about nothing of a very exciting character; avoid carefully every domestic unpleasantness, as to child, servant, husband and wife. Let no angry word be spoken or thought harbored for a single instant after tea-time, for death may come before the morning-light. Grown persons generally require about seven hours sleep in summer, and eight in winter. Few indeed, except invalids, will fail to sleep well who go to bed at a regular early hour, on a light supper, in a large room, and clean, comfortable bed, if there is no sleeping in the day-time, and not more than seven hours in any twenty-four are passed in bed. One week's faithful trial will prove this. Children, and all persons at school should take all the sleep they can get, and should never be waked up in the morning after having gone to bed at a regular early hour. Every humane parent will make it a religious duty to arrange that every child shall go to bed in an affectionate, loving and glad spirit. If wakeful during the night, get up, draw on the stockings, throw the bed-cover to air it, walk the floor in your night gown, with the mouth closed all the while rubbing the skin briskly with both hands, until cooled off and a little tired. Except from August first to October first, in fever and ague localities, a chamber window should be open two or three inches in length.

The Unwearied Action of the Heart.

The effect of everything that touches the heart is multiplied by the intensity of the heart's own changes. Hence it is that it is so sensitive, so true an index of the body's state. Hence, also, it is that it never wearies. Let me remind you of the work done by our hearts in a day. A man's total outward work, his whole effect upon the world in twenty-four hours, has been reckoned about 350-foot tons. That may be taken as a good "hard day's work." During the same time the heart has been working at the rate of 120-foot tons. That is to say, if all the pulses of a day and night could be concentrated into one great throb, that throb would be enough to raise a ton of iron 120 feet into the air. And yet the heart is never weary. Many of us are tired after but feeble labors; few of us can hold a poker out at arm's length without after a few minutes dropping it. But a healthy heart, and many an unsound heart too—though sometimes you can tell in the evening by its stroke that it has been thrown off its balance by the turmoils and worries of life—goes on beating through the night when we are asleep, and when we wake in the morning we find it at work, fresh as though it had only just begun to beat. It does this because upon every stroke of work there follows a period, a brief but real period of rest; because the next stroke of which comes is but the natural suspense of that rest, and made to match it; because, in fact, each beat is in force, in scope, in character, in everything, the simple expression of the heart's own energy and state.—*Appleton's Journal*.

ENDEMIC DYSENTERY IN SAN JOAQUIN CO.—

Dr. F. W. Todd, of Stockton, at the request of the Board of Health of that city, has drawn up an account of an epidemic of dysenteric disease, which has prevailed in Stockton and the adjoining country for the last three years. The report commences with a sketch of the topography of the country, its climate, water supply, etc. During the four months, from May to August, 1872, 251 cases are noted, with thirty-three deaths, and this does not include the practice of a number of physicians, from whom no returns could be obtained. Of the deaths, 25 were children, and eight adults, the latter mostly from the Insane Asylum. Dr. Todd inclines to attribute the disease to the great transition of temperature from day to day—no other cause being assignable. The best treatment consisted in large doses of ipecacuanha, from five to twenty grains. The paper is considered by the *Pacific Medical Journal* as very important and interesting.

EXTREME CLIMATIC HEAT.—It is stated that owing to the extreme heat of the weather (120° F.) it was found necessary to bury the body of the late Professor Parrish on the day of his death. This was at Fort Sill, in the southwestern part of the Indian Territory. Many persons on this coast believe the climate of Arizona, near the head of the Gulf of California, to be the hottest in the United States, though the point above named, 120°, is the highest ever claimed for that locality. We can seldom rely, however, on the entire accuracy of the statements made in regard to extreme heat, as so much depends on the situation or exposure of the thermometer, and so few observers use proper precautions in this respect.—*Pac. Med. Jour.*



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SAN FRANCISCO:

Saturday, Dec. 7, 1872.

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JAPANESE PROGRESS.—A railroad about 30 miles long is now in operation between Yokohama and Yeddo, Japan. No doubt after the Japanese have seen the practical working of this most essential aid to civilization, the other parts of the country will want roads also. A beginning has been made and we may now look to see the country covered with railroads, and even greater interest taken in machinery of all kinds than heretofore. All these things augur well not only for Japan, but for the future of this Coast, since from here, no doubt, will the large proportion of her machinery be sent. Some of the city foundries have already been sending certain classes of machinery to Japan, which will no doubt cause more to be ordered.

The Olive Tree.

This is among the oldest of cultivated trees, so old indeed that its native country is not definitely known; it is supposed to be indigenous to both Asia and Africa. The tree seldom exceeds 20 feet in height, is of a spreading habit, and very long lived. It is evergreen, but its leaves are a soft pale green; it is usually grown from cuttings, as this method perpetuates the same variety, though there are several distinct varieties, as among apples and pears.

We gave on page 57 of the present volume of the RURAL, an extended notice of the Olive as grown in California, the mode of culture and manner of expressing the oil, and preparing the olives for the table, which it is hardly necessary here to repeat; but to the process there given for extracting the oil on a large scale, we will add, that to obtain the very finest quality, known to commerce as Provence oil, the virgin oil is expressed with great care from ripe fruit immediately after being gathered, and before the slightest fermentation has taken place.

The manufacture of olive oil is a very old practice, but it has undergone very considerable improvement of late years. By the introduc-



THE OLIVE BRANCH.

tion of hydraulic presses, the expressing of the oil is now much more rapid and effectual, and the injurious effects of incipient fermentation, or those attending the heating of the pulp, are thus avoided.

The olive is found at nearly all the old missions of Middle and Southern California, and its propagation might be extended largely, and with profit. We are indebted to Mr. John McComb for procuring the twig of olive from which we have made our engraving. It came from San José, where the tree seems at home as regards both soil and climate. In our illustration, both leaf and fruit are reduced to one fourth the natural size.

The Wheat Ring.

Now that we are made cognizant of the fact—as appears from the *Commercial Herald*—that "a large number of mercantile firms" in San Francisco employ one man as their factor to charter ships and put up freights above all former precedent—our grain-growers can see why it is very proper that they should be looking out for themselves, an entirely new set of men as buyers and exporters of grain from this Coast.

We want men that cannot be tampered with, men that can come into the market on fair terms with both the wheat-producer and the shipper, without combinations or "rings," and we are glad the farmers are becoming awakened to existing facts; for even if they are helpless in bringing about any reform, it is at least a satisfaction to know who their friends are, and who are only pretenders. Even our lady-correspondents are getting awakened upon the subject. A lady in Yamhill County, Oregon, says:

"I am glad to see that you are exposing the dishonest and heartless 'ring' that is robbing the farmers on this Coast, by keeping down the price of grain, and I hope you will continue to expose them, until relief is obtained from their blighting folds."

And we are receiving similar words of encouragement from many parts of our own State."

MAPLES, large enough to make three ten feet rails each, with 4,100 trees to the acre, have been raised from the seed in seven years, in Monroe county, Iowa.

Cork-screw Growth.

We are indebted to A. D. Pryal, nurseryman and florist, of Oakland, for a half dozen samples of the *Eucalyptus viminalis*, grown from the seed planted in pots in March last. The trees are from 3 to 6 feet in height, apparently healthy and luxuriant, notwithstanding the morbid growth and distorted condition of their roots, caused by being cramped up for a whole season and obliged to make their living or do the best they can in their pent up prison-house, a flower-pot six inches in depth.

It is the favorite method with tree growers to start in this manner for one season, this, one of the largest and most rapid growers among forest trees; but we would just as soon think of growing the apple or yellow locust in

Fig. I.



pots, for a year, as the eucalyptus. In the address of Mr. Pryal before the Oakland Farmers' Club, which will be found in our columns, this subject is ably handled and ought to receive the attention of individuals and committees whose business it is to procure and plant our highways and public grounds with trees.

In the illustrations which we present, No. 1 is the Eucalyptus grown in open ground from the seed, without removal or transplantation; the roots allowed to take their natural form and direction; and though it possesses a strong,

Fig. II.



heavy tap-root, it is just what nature or the tree wants, or it wouldn't grow it. It does need it, first as a powerful anchor or brace to hold the tree to its position as against high winds, and secondly to secure sufficient moisture for the tree in seasons of protracted drouth.

Illustration No. 2 is the same kind of tree grown in a pot since March last. The first effort of the tree is to strike its main root downward; this coming in contact with the bottom of the pot, the root above begins to kink, twist or do any way to extend itself, to increase its surface of spongioles to meet the increasing demand for nutriment. To suppose that it will throw out a mass of fibrous roots and fill the pot is to suppose that it will do what the nature of the tree will not admit of, or not till it has first established itself in the soil, secure against wind and drouth.

The consequence is, that the root in the pot continues to enlarge, with hardly any increase of its length, until the coils actually touch each

other, as shown in the cut, and unnatural excrescences as at A are also forced out above the real roots.

At length the root, in the illustration given—and which is true to life—found its way through the hole in the bottom of the pot opposite to B, and standing on the ground immediately commenced the formation of fibrous roots.

Now when this tree is transplanted it is set in the ground up to A, because all below that is real root, but a miserably distorted foundation for any tree to commence a growth upon, and with scarcely a rootlet for the first eight inches from the surface of the ground. Is it surprising that such trees never root naturally thereafter and that they are prostrated by the first high wind? Our article contains hints and suggestions that are worthy the attention of those who contemplate the setting of the new favorite, the Eucalyptus, in any of its varieties; and in the specimens before us nature presents a strong argument in support of our proposition, often inculcated, of planting the seeds of trees, if possible, in the places where they are to stand permanently.

PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

By Special Dispatch, Dated Washington, D. C., Dec. 3d, 1872.

[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

CAR COUPLING.—Mordecai Disney, Oakland, Cal.

APPARATUS FOR COATING SEED WHEAT WITH SULPHIDE OF COPPER.—Daniel Best, Marysville, Cal.

SUBSOIL PLOW.—Christian Myers and William Gummow, Marysville, Cal.

PREPARING ORFS FOR AMALGAMATION.—Almain B. Paul, S. F., Cal.

WHEELBARROW.—Calvin Nutting and Calvin Nutting, Jr., S. F., Cal.

PAINTERS' STRIPING IMPLEMENT.—Daniel Lydon and Charles Halsey, S. F., Cal.

LUBRICATOR.—William T. Garratt, S. F., Cal.

*The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue. NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Yield of Potatoes.

At a recent meeting of the Sonoma County Farmers' Club, Mr. Whittaker, of Bennett Valley, presented a specimen of Irish potatoes raised on his farm, and was able to give the exact cost of cultivation of one-fifth of an acre, a matter to which many of our farmers give too little attention. It is always interesting and indeed useful to know just what the crops we are growing cost us, one compared with another. We give cost of cultivation, net profit, etc., as follows:

One-fifth of an acre of land planted in potatoes on the 10th day of June.

COST OF PRODUCTION.

One-fourth day's plowing.....	\$ 75
Harrowing.....	75
Seed.....	60
Cultivation.....	40
Hoing.....	10
Harvesting (on 15th day of Nov.).....	3.00
Rent of land.....	1.00
Total cost.....	\$ 6.50
Product, 2,100 lbs, worth 1½ cts. per lb.....	26.25
Deduct cost of production.....	6.50
Amount realized on one-fifth of an acre.....	19.75

Here we have a profit of \$19.75 from one-fifth of an acre of land or \$98.75 per acre. Now when we consider that very many farmers in this State who might raise their own potatoes, now buy every one they consume, and more than this, that the labor of planting, cultivating and gathering comes at a time in no way interfering with the handling of the great staple—wheat—we wonder that every man who has an acre of ground suitable to grow potatoes upon, doesn't do it.

THE SANTA BARBARA PRESS.—This is the name of a Southern California journal published daily and weekly, at Santa Barbara. If you wish to know all about the loveliest country and the most genial climate on earth, then subscribe for the Santa Barbara Press.

LAROE BUTTER YIELD.—Mrs. W. H. Wherritt, of Lancaster, Pa., from seven pints of milk, from an Alderney cow, claims to have made 1½ pounds of butter.

Our Hotels.

The Cosmopolitan.

The hotel system is peculiarly American, and is peculiarly adapted to the wants of a business community of entirely modern growth and modern habits, such as is that of the United States. The hotels of our city are amongst its most prominent features, and their

History

Well written would tell alike of its growing wealth and commerce. Amongst the very oldest, at least if considered in conjunction with its predecessors occupying the same grounds is the Cosmopolitan, located at the corner of Bush and Sansome streets. The year following the discovery of gold in the State, the first hotel building, occupying this site, was erected. Old Californians will remember it as the "Rasette House," but the first-class hotel of that day bore as little resemblance to the "Cosmopolitan" of to-day as did the Yuba Buena village of 1847 to the great commercial city of San Francisco of 1872. Growing too small for the accommodation of its numerous patrons, and being outstripped in character by the buildings of improved styles everywhere being erected around it, the "Rasette House" gave way to the "Metropolitan Hotel." But even the "Metropolitan" became unable to afford sufficient accommodation to its hundreds of patrons, and some years since the present magnificent pile was erected, and subsequently received numerous additions and improvements. The first proprietors were Messrs Seymour & Hanna, who were succeeded first by Reis Bros., then by Messrs. Tibbs & Patten, who now carry on a splendid hotel across the Bay, in Brooklyn, and finally in August, 1871, by Mr. Pearson, the present urbane proprietor.

The Splendid Building

Of which we here give an illustration is, including the basement, six stories high, has a frontage of two hundred and six feet on Bush street, by one of one hundred and thirty seven feet on Sansome, and contains an area of twenty-eight thousand feet on each story, the whole of the floors possessing an united area of one hundred and sixty-two thousand square feet, or nearly four acres.

The First Floor,

Besides the numerous shops and stores that front both streets, contains a fine office, a magnificent reading room, and a splendid bar room and billiard room. The reading room is crowded from early morn till sometimes long after midnight, and is supplied with papers, magazines, etc., from every city of importance in the Union. The telegraphic system is so arranged that sitting in his own room any of the guests may correspond almost instantaneously with every part of the known world, from London to Pittsburgh, and from Canton to the furthest cities of Australia. The elevator, which is one of Miller's Patent Safety, is quite a feature of the institution.

The Second Floor,

Contains the public parlor, magnificently furnished, and the reception parlor, which vies with the former in splendor. We doubt if the dining room can be excelled in decoration, or in amplitude by that of any hotel in the world. A heavy cornice adorned with numerous pilasters is worked out in the highest style of the decorative arts, while the ceiling is paneled so artistically that it must be seen to be properly appreciated. The immense mirrors when the hall is lighted in the evening reflect back the radiance with an effect at once grand and beautiful. The whole of the building contains

Three Hundred Rooms,

Including one hundred suits, many of four rooms each, furnished in the most elegant manner possible. The "Cosmopolitan" is decidedly one of the finest hotels west of Chicago.

Deep or Shallow Plowing.

We have a correspondent who is going into the fruit raising business upon land which he says seems to possess all the elements of fertility except, perhaps, a sufficiency of moisture in the surface soil during the summer months; yet hopes by irrigation—which he can command—to succeed in growing an orchard. He further states that he finds those around him who have grown but few trees, some recommending deep, others shallow plowing, as a preparation for his trees; and then asks us to decide between them as to which is right.

A great deal of paper has been spoiled and ink wasted by the advocates of deep and shallow plowing and planting of trees and seeds, and yet nothing like a fixed rule has been attained that can be applied in all cases; nor does there seem to be consistency in the views of some in relation to the subject.

A nurseryman who advocates the growth of surface roots upon trees to the exclusion of all deeply running roots, will, with the next breath advocate deep plowing and even sub-soiling and trenching for an orchard; but with how much of consistency we leave to others to judge. If they approve only of surface roots, why go to the expense and trouble of loosening the soil

tage; but it should still remain the subsoil, and is just as proper in its place, as is the surface soil, and just as necessary to the development of a perfect vegetation.

In the leaching, to which all soils are more or less subject, in the process of imbibing the rains of the season, the alkalies or salts of whatever nature, taken by the surface soil from the atmosphere or the decay and disintegration always in progress upon the surface of all soils, is conveyed by direct filtration to the less impervious sub-soil, there to await the wants of vegetable growth when most in need of its peculiar properties.

Thus while the surface of a wheat field is best adapted to nourish the soft vegetable fibre of the immature stalks of cereals or other annual plants, there are other substances necessary to furnish the lime and phosphates to the ripening grain and the hardening and stiffening of the straw, that the roots can nowhere find but upon and in the subsoil.

We have in a previous article on tree planting remarked, that a tree should be set no deeper at the time of transplanting than it stood in the nursery row, or not to exceed it more than an inch or two; but let the extremity of its roots be as deep in the soil as they also

Look Around the Homestead.

It is an excellent time during the first two weeks in December to take a general survey of the situation around the old homestead, inside and out. It is the easiest thing in the world to save—to those who do the inside housework—a great deal of inconvenience and real trouble. It is time that a good supply of fine wood is provided and put under cover for the winter, where it can be reached by the women of the house without going into the rain, besides the direct economy of burning dry wood instead of wet or green.

Now that we have had one good dashing rain it is easy to see where the roof of the house, barn or stable has proved leaky, and no time should be lost in repairing them. The rain will soon start the grass and early flowering winter and spring plants, and therefore such should be looked to, the old stocks cut away and all rubbish of leaves and decayed portions removed before the new shoots make their appearance, and in their place a coating of finely pulverized, well rotted manure should be applied to be washed in by the winter rains.

In a thousand places in California after this first wetting of the season, all manner of ornamental trees, plants and even orchard trees can be transplanted with advantage; it is better than spring planting, and by doing it now, you get it off your hands for the season, only that diligence should be exercised to see that no stock is allowed access to young orchard ground or any part of the farm devoted to tree growing. Therefore pass around and see if there is not an extra rail or a new panel wanting on the old fence, it may save a big heart ache before the rainy season is over.

Pigs and Poultry.

You are, doubtless, fattening two or more fine pigs for family use only, and, therefore, feeding a little extra corn or other grain. Bear in mind that hogs fatten in almost half the time they otherwise would, if kept in dry, warm pens during the season of cold, drenching rains; and, therefore, to give them such quarters is to make money, or pork, which is the same thing.

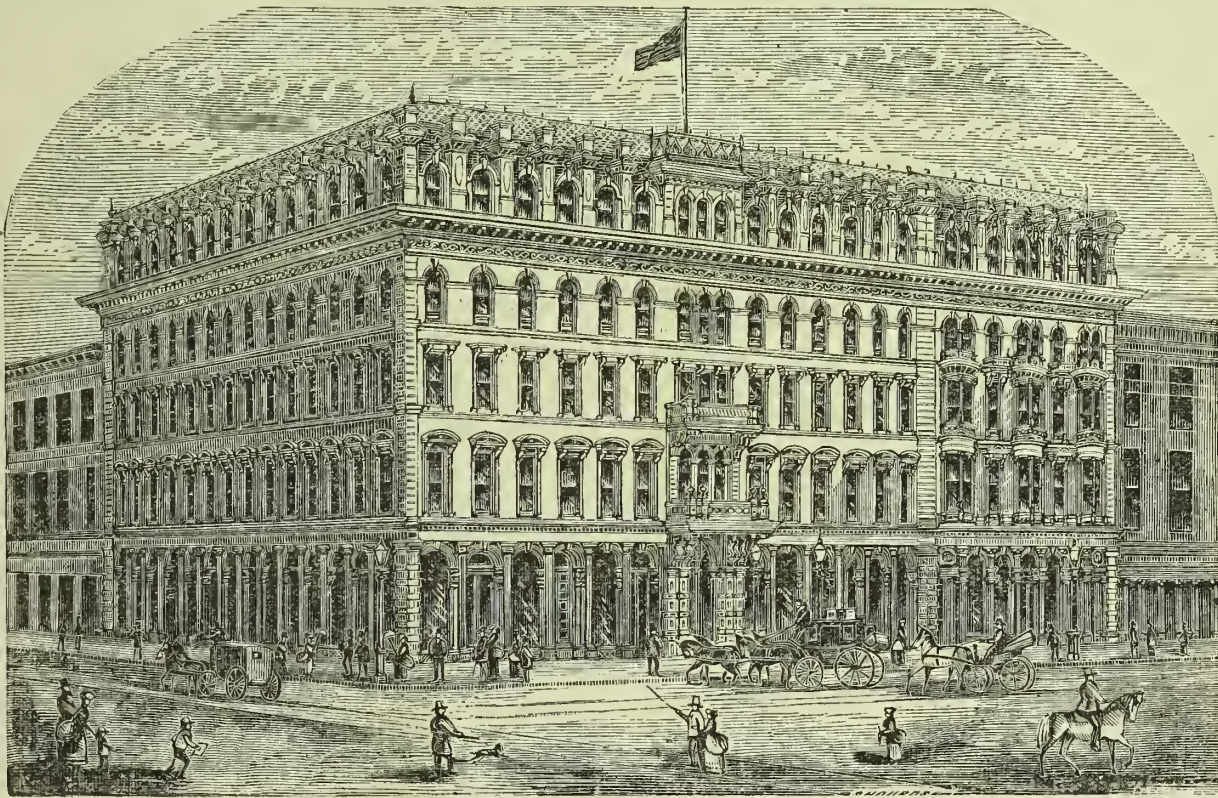
We have all heard the old saying, "mad as a wet

hen," and if there is any one thing a hen is supposed to dislike, it is to go on to her nest to lay with muddy feet and feathers dripping wet; so that if it is desirable to have your hens lay through the winter, when eggs are worth fully double that of any other season, lose no time in preparing for them dry, warm quarters, with good nests, and be sure they have good feed, and an abundance of clear, pure water.

Last, though not Least,

The farmer should have on the inside of his house, a warm, comfortable reading-room. It need not be a parlor nor a richly-furnished room, for it can be just the kitchen, if that be the only large room in the house; but it should be large and comfortably warm in every part; and when the supper-table is cleared away, make a center-table of it. Let the big boys and girls bring on from the shelves the books and newspapers of the day, and it should be the business, as it is the duty, of every farmer to provide his entire household, from the servant to the matron, with valuable and interesting reading, including of course, some of the many new horticultural and agricultural books and the PACIFIC RURAL PRESS, as the best agricultural and family paper on the Coast. Let the farmer do these things and his home-happiness and prosperity is secured.

THE RAINS.—In common with every paper in the State, it may be well enough for us also to say, that an abundant and glorious rain has fallen throughout all the State as far as heard from. A warm rain too, one that brings out the green grass blade upon the hills and the wheat all along the great valleys. Our husbandmen are already rejoicing in the prospect of another bounteous year of harvests.



THE COSMOPOLITAN HOTEL, SAN FRANCISCO.

deeply? Is it not for the very purpose of enabling the roots to penetrate it?

In the culture of plants, vegetables or trees, we advocate a system of deep tillage; but it should be done at the proper time and in the right way, and with some regard to the kind of crop to be produced. Hence we would not plow as deep for onions or lettuce as we would for corn or beets or the orchard tree.

Wheat Culture.

We would have the soil deeply stirred for the wheat crop; but it should be done so long previous to the sowing of the grain that it might attain a sufficient compactness at bottom or below the upper four inches of surface soil, as to favor the production of a multiplicity of small fibrous roots, which are the only ones formed when the bottom soil is open or porous; but at the season of sowing the grain we would plow but shallow, say four or five inches, and cover the seed but half the same depth, or what might be termed shallow. Nature puts its seeds upon the surface everywhere; but we can assist nature a little, by giving a certain and uniform covering.

Tree Planting.

But in planting the orchard tree or plants with deeply running roots, we would first plow down as deeply as the fertile soil would permit without turning up too much of the inert subsoil. It is an error to mix up largely at once, the deeper sub-soil with that richer portion of the soil which nature has placed upon the surface, and fitted by its very position with the food best adapted to the nourishment of the newly germinating plants. The subsoil may be stirred and in many cases can be with advan-

occupied in their original position in the nursery, even if they touch or penetrate the subsoil. It would seem as though we had pretty nearly exhausted the subject of how to plant an orchard, but we are ready at all times to answer questions fairly put.

RABBITS IN THE ORCHARD.—A reader of the PRESS in one of our mountain counties, (Calaveras,) says he is troubled, and suffers loss every year from the depredations of rabbits. That as certain as the ground is covered two or three days with snow, the rabbits commence girdling his young orchard, and have caused the loss of some valuable trees; and asks if there is any better remedy than dog and gun.

Wrap them with any kind of old cloth or stiff paper, and occasionally saturate it with coal oil or coal tar, which prevent their attacks; but if you are near a slaughter house, procure half a hucket of blood, and with a swab or coarse brush, spread upon that portion of the tree liable to their attacks. It is a sure preventive, and two applications are enough for the whole winter.

OUR NOTES.—In our agricultural notes for the present week, our readers will observe more extended notices of the condition of the weather, than of anything else; we have two reasons for this; one that we want our distant readers to know how and when our winter sets in, in different parts of the State, and the other is, that we can find little else in our exchanges at this season of the year that has any practical bearing upon our agriculture.

An old saying is that whether a man marries or not, he is sure to regret it.



The Old, Old Home.

When I long for sainted memories,
Like angel troops they come,
If I fold my arms to ponder
On the old, old home,
The heart has many passages
Through which the feelings roam,
But its middle aisle is sacred
To the thoughts of old, old home.

Where infancy was sheltered
Like rose-buds from the blast,
Where girlhood's brief elysium
In joyousness was passed;
To that sweet spot forever,
As to some hallowed dome,
Life's pilgrim bends her vision—
'Tis her old, old home.

A father sat, how proudly,
By that hearthstone's rays,
And told his children stories
Of his early manhood's days;
And one soft eye was beaming,
From child to child 'twould roam;
Thus a mother counts her treasures,
In the dear old, old home.

The birthday gifts and festivals,
The blended vesper hymn
(Some dear one who was swelling it
Is with the Seraphim)
The fond "good nights" at bed-time,
How quiet sleep would come,
And fold us altogether
In the old, old home.

Like a wreath of scented flowers
Close intertwined each heart;
But time and change in concert
Have blown the wreath apart.
But dear and sainted memories
Like angles ever come,
If I fold my arms and ponder
On the old, old home.

Sunshine.

[COMMUNICATED.]

See the mellow, golden sunshine,
Dancing here, glancing there;
First it hides among the shadows,
Then 'tis everywhere.

It beams upon the mountain-top,
Again 'tis on the plain;
Then shining on the crested waves
Of the billowy main.

It sparkles on the waters, cool,
Then hideth in their foam;
Go where you will, on this bright earth,
Sunshine will have her home.

Mrs. ELIZA E. ANTHONY.

San Jose, Nov. 23d, 1872.

Polite Children.

"Thank you, Charlie," said Mrs. Brown, as her little son handed her a paper he was requested to bring.

"Thank you, Bridget," said the little fellow a few hours after, as he received a glass of water from his nurse.

"Well, Mrs. Brown, you have the best mannered children I ever saw," said a neighbor. "I should be thankful if mine were as polite to me as yours are to the servants. You never spend half as much time on your children's clothes as I do, and yet every one notices them, they are so well behaved."

"We always try to treat our children politely," was the quiet reply.

This was the whole secret. When I hear parents grumbling about the ill manners of their children, I always wish to ask, "Have you treated them with politeness?" I once knew a man, considered quite a gentleman in society, who would speak to his children in a manner that a well-instructed dog would resent. He would order them with a growl to bring him his slippers, or perform some other little service; and yet he complained of the rudeness and disobedience of his children.

Many persons who are polite and polished in their manners toward the world at large are perfectly bores inside the home circle. What wonder if the children are the same! If they should accidentally brush against another in the street, an apology would be sure to follow; but who ever thinks of offering an excuse to the little people, whose rights are being constantly violated by their careless elders? If a stranger offers the slightest service, he is gratefully thanked; but who ever remembers to thus reward the little tireless feet that are traveling all day long up-stairs, and down, on countless errands for somebody? It would be policy for parents to treat their children politely for the sake of obtaining more cheerful obedience, if for no other reason. The costless use of an "If you please," and "I thank you," now and then, will go far to lighten an otherwise burdensome task. Say to your son, "John, shut the door," and with a scowl he will move slowly toward it, and shut it

with a bang. The next time say "John, will you shut the door, please?" and he will hasten with a pleasant smile to do your bidding.

Many children, as they grow older, are obliged to learn the rules of politeness as they would a lesson. The consequence is, when they appear in society they are awkward and blundering. On the other hand, children who have been accustomed to politeness at home are at their ease in the most polished circles, and are saved that confusion and bitter self-condemnation which are sure to follow any breach of the rules of etiquette.

Some children, learning from their parents, seem to consider politeness at home affection! Brothers who would jump up with alacrity to give an easy-chair to some dashing Miss of their acquaintance, will appropriate it to themselves when at home, without the slightest apparent consciousness of the presence of a sister, or perhaps a mother.

"My brother is as polite to me as any one else, when I go out with him," said a girl proudly to a companion. What a reflection on his manners at home? A sister will perhaps accidentally knock over some of the tools with which her brother is busy. An apology involuntarily arises to her lips, but she stifles it on considering that it is only Jack; and all the satisfaction he is offered for disordered plans is a blunt "Oh!" Angry reproaches are sure to follow. "You are real ugly, Jack, to talk so about such a thing; you know I didn't mean to," is the equally angry rejoinder. Why did she not say so? Two words would have saved all the trouble. Want of politeness is the cause of more quarreling among brothers and sisters than anything else. In their plays children are constantly meeting with little accidents, for which they should be taught to apologize. I have seen the cheeks of a child flush with anger, his eyes flash, and a little hand raised to strike the unfortunate breaker of a toy, when, as if by magic, the blow was arrested by these words, "Excuse me, I did not mean to."

Polish is not everything. It is however, something. It is better to have a black kettle that is sound than a bright one with a hole in the bottom; but there is no reason why the sound one should not be bright too.

It is of the first importance that children should possess those sterling qualities which fit them for battle with temptation and sin; but do not send them out in the world in great clod-hopper boots. Shine them up, and both happiness and influence will be increased.—*Advance*.

The Business of Children.

Children as well as adults should have occupation. Idleness is an abomination at any period of life, from the cradle to the grave. "For Satan finds some mischief still, for idle hands to do." Nature knows nothing of idlers. If children are natural why should they be idlers?

Now the business of children is to grow. This may be a new theory, a startling innovation, a revolutionary sentiment, but we think it is true. As we look over the world we find that children generally are put to all other business except growing. They are permitted to grow, if they can, but compelled to do every thing else. The growing is secondary and incidental, when it should be primary and fundamental. Children are confined six hours a day in a school-room under the delusion that they are being educated. They may indeed learn to repeat words and talk phrases. But all the ideas they get at the expense of bodily development are useless or worse. They may recite all the books from Alpha to Omega and yet be know-nothings for all practical purposes. Cultivating the mind at the expense of the body was never done and never will be. All attempts in that direction only dwarf and enfeeble both.

There are places in England, and in the United States, where children are drugged into bodily deformity and mental imbecility. The economy of over-working children is extremely short-sighted. The farmer will never allow his growing colt to work at all; nor must his horse work on full time till full matured in bodily organization. If he should work his two-year-old colts ten hours a day, his horses would never be worth exhibiting at the fair. How can overworked children ever become "prize" specimens of men and woman?—*Science of Health*.

Those days are lost in which we do no good; those worse than lost in which we do evil.

Mothers.

There are mothers of large families, even in our day, when children are born with natures that demand greater care and finer culture than their ancestors did, who feel very little concern except to feed and clothe them and send them to the schools provided for their religious and secular education. But some of us realize that the demand made upon mothers by the enlightened spirit of our day is greater than mothers with our present poor preparation of health and culture can endure. It is not so much what we do as what we see ourselves unable to do that is driving us mothers distracted, nowadays.

The minister must have his annual vacation, and teachers must have their holidays, but where and when shall a mother find rest?

Children need some variety in their care and education. A wise friend told me two years ago, that what seemed to him at the time a great and irreparable calamity to his children had really seemed to prove the best thing for their development. They were early left motherless, and since then there have been several changes in their home and management—always pretty good care, but not invariable. The other day he wrote me: "I am glad you do not worry yourself to death about the disagreeable peculiarities of your children. L. did that almost literally, and it incapacitated her for doing her best by them. And now they are almost model children, and it has not been accomplished by repression, either, or only in a slight degree." Then he gave us two pages of happy father-talk about his children, now nine and seven years old.

The more thoroughly a woman is a mother, in heart and soul as well as in name, the more does she need opportunities of rest and assistance in her labors.

Madam Krige says: "It is the mother's mission to enter into the child's nature, to live its life, to understand its impulses, to feel its needs; to bring her love, her sympathy, her wisdom, to this work of leading the child along the dark path of early life, and to make it acquainted with its relations to nature, to its fellows, and through these to bring it into a conscious relationship to its Heavenly Father."

I think there is not a nobler mission on earth than that. But if this mother, who ought to do all that for her babe, and who longs to do it, is the mother also of two or three more young children, scarcely yet amenable to reason, with all the mischiefs and necessities of childhood; if she has to be not only their wise guide and tender friend, but also their seamstress, cook and washerwoman; and if she must also have the ordering of an establishment, and is expected to follow the fashions in dress, even afar off—then, I say, it is no wonder that insane asylums are so well filled, and that so many men are looking for their second and third and fourth wives; and it is no wonder that children have so poor home-training. Let us accept all lawful means of refreshment and relief, and all possible aids in our work.

What Becomes of the Sons of Successful Men.

Next to the inquiry, What becomes of the pins? an interesting question would be, What becomes of the sons of successful men? A few names and a few firms are in the hands of the founders; but those are exceptions. The old name and the old trade generally pass into the hands of others. "Do you see that man shoveling in coal? Well his children, and children like his, will jostle your pampered sons and rule this land," said an old New Yorker, the other day. The old names have ceased in the pulpit. The famed men at the bar seldom have a successor. The eminent jurists carry their honors with them to the grave. Merchant princes are obliterated. The reason is clear. The fathers laid the basis of business one way, and their sons another. Men who earned their fortune by hard work, by diligence; that knew sixteen hours' toil by personal attention; that were their own book-keepers, salesmen, cashiers, and often porters, are followed by sons who do as little as possible; who delegate to others all the work they can, and who know more of the road than of the ledger. Famous hotel men were gentlemen; men of intelligence, men who were the equals of the best in the land, and who never sunk the gentleman in their trade. Young men who flung the example of their sires to the wind, find it easy to squander a valuable name, run through a fortune quicker than it was earned, and find themselves, while young, at the point from which their fathers started. One thing is quite marked in New York. It is the fact that the heavy business is getting into the hands of foreigners. The heavy importers, the great bankers, and much of the trade of value is slipping out of the hands of Americans and the trade of England going into the power of the Lombards.—*Boston Journal*.

TRUE GREATNESS.—True greatness consists in this: In being alive to what is going on around one; in living actually; in giving voice to the thoughts of humanity; in saying to one's fellows what they want to hear or need to hear at that moment; in being the concretion, the result of the influence of the present world. In no other way can one affect the world than in responding thus to its needs, in embodying thus its ideas. You will see, in looking to history, that all great men have been a piece in their time; take them out and set them elsewhere, they will not fit so well; they were made for their day and generation. The literature which has left any mark, which has been worthy

of the name, has always mirrored what was doing around it; not necessarily daguerrotyping the mere outside; but at least reflecting the inside—the thoughts, if not the actions of men, their feelings and sentiments, even if it treated apparently far-off themes.

Young Folks' Column.

What Willie's Puppy Did.

Two or three little boys, almost babies, were standing near a man who was whipping his horse to make him draw a heavy load of coal. One of them cried out in his helpless indignation: "Stop that, Mister! You shan't whip that nice horsey any more."

But still the smutty fellow laid on the whip. Another of the children exclaimed: "You better stop that, or I'll whip you real hard with my horsewhip when I'm a man! Stop or I'll tell my father of you!"

The man laughed till he saw the third baby boy sitting down by a stone wall, crying bitterly, and rubbing his eyes with his white blouse. He stopped his cruel work, and called out: "What are you crying for? This isn't your father's horse, little fellow."

"I'm crying 'cause I don't want that nice old horsey hurt. Please don't hurt him any more, and I'll help push the cart, and Sam and Joe will push, too."

The man laughed out very loud, and said:

"Why you could draw the coal yourself! But why don't you like to see the horse whipped?"

"Cause, cause," sobbed out Willie, "cause I've got a puppy at home."

Now, there seemed no sense at first thought, in his reply of the dear, tender hearted child; but there was a great deal of good sense in it. What Willie meant was this: "I own a puppy that I love, and I could not have him whipped or hurt in any way. And because I love my puppy, and am tender of him, I love every other living thing."

Willie's puppy had taught him to be merciful to every dumb creature, and so had done a good work on his little heart.

He who is tender of a dog, cat, or bird, will never grow up to beat horses. Let children have pets to love and care for. While being a pleasure, it will also be a useful discipline in after life.

"The Boy's Nest."

Several years ago, a farmer in the State of New York sent his son Rollin to drag a newly ploughed field. He was to drive a young ox-team, and the father in quite a pompous manner said, "Now, boy, to drive this team you must be a man to-day, and keep out of all boyish scrapes, then you'll get along well enough. Now remember, no boy's play with this team." Rollin said he would do as well as he could, and started for his work. After the farmer had looked into other matters on the farm, and assured himself that all was moving along properly, he started for the field to look for his team. Now Rollin had done well, and everything had gone along nicely until just as the farmer had reached the corner of the field, when the drag caught in an old stump, tearing a part of it off, and bringing out an active nest of yellow jackets. When the farmer came in sight, what was his astonishment, and vexation, to see the oxen kicking, and jumping and plunging ahead, and Rollin apparently imitating their movements. "Here, boy, what are you doing there?" screamed the farmer in no very gentle manner. "I guess we're in a hornet's nest," answered the frantic Rollin. "In a boy's nest, I guess! Here, give me that whip," said the enraged father, "and I'll see what this hornet's nest amounts to." So away he started after the frightened team, intent upon hastily bringing order out of confusion. He had gone but a few steps, however, when the hornets met him, and he evidently forgot the team, and all former intentions, threw away his whip, and to all appearance became absorbed in the one idea of dancing a jig, at the same time slapping his unoffending trousers, and now and then his ears, in a most frantic and shocking manner. Rollin, who had found peaceful quarters over the fence, now shouted back, "How do you like 'a boys nest,' father?" Rollin is now a man, and the farmer is now bowed down with the weight of over four score years, yet he laughs in a very quiet, but amused way, whenever Rollin refers him to "the boy's nest."—*Christian Union*.

DOMESTIC ECONOMY

Chopped Pickle.

What we call Chopped Pickle goes also under the name of Chow-Chow, Picklette, Hig-dum, etc. It is liked by most persons, is readily made, and admits of the use of a number of articles. There is no particular rule for making it, and the basis may be of whatever pickle-making material is most abundant. We have just put up our winter stock, and this time made it as follows. Green tomatoes furnished the largest share, there were nearly ripe cucumbers with the seeds removed, cabbage, onions, and green peppers. These were chopped in a chopping-machine and mixed, sprinkled freely with salt, and allowed to stand until the next day. The abundant juice was then thoroughly drained off, and enough spiced vinegar prepared to cover the material. No rule can be given for the spice, which may be according to taste. Whole pepper, cloves, mustard-seed, broken cinnamon, or whatever spice is fancied, may be boiled in the vinegar. We prefer it with the addition of sugar. Some mix up mustard and add to the pickle when cold, and others boil turmeric in the vinegar to give it a uniform yellow color. It is a pickle that can be made according to fancy rather than according to rule. In winter, cabbage, celery, and onions treated in the same way make a very fine pickle. As with other pickles, the vinegar should be poured off, and boiled, at intervals of a few days, two or three times before it is put away for the winter.—*Am. Agriculturist.*

TO CLEAN PAINT.—Use but little water at first; keep it warm and clean by changing it often. A flannel cloth takes off fly specks better than cotton. Soap will remove the paint; so use but little of it. Cold tea is the best liquid for cleaning varnished paint, window panes and mirrors. A sharp piece of soft wood is indispensable for cleaning out corners. A saucer of sifted ashes should always be at hand to clean unvarnished paint that has become badly smoked; it is better than soap. Never put soap upon glass unless it can be thoroughly rinsed off, which can never be done to window glass. Wash off the specks with warm tea, and rub the panes dry; then make a paste of whiting and water, and put a little in the center of each pane. Take a dry cloth and rub it all over the glass, and then rub it off with a chamois skin or flannel, and your windows will shine like crystal.

TO CLEAN SMOKY PAPER-HANGINGS.—Taking a piece of wood of the shape of a scrubbing-brush, nail a handle on the back, then upon the face nail a piece of dried sheepskin with the wool upon it, or flax or tow will do, or cotton-flannel of several thicknesses will answer very well. Dip this brush into dry whiting, and rub the smoke lightly with the brush, on the upper parts of the room first—protecting the carpet with matting or newspapers, as the whiting-dust is hard to sweep off a carpet. The whiting that remains on the wall is easily brushed off with a soft cloth attached to a stick. It is very effectual if the room is not damp and the whiting is dry.

HOW TO MAKE TEA PROPERLY.—The proper way to make a good cup of tea is a matter of some importance. The plan which I have practiced for these twelve months is this. The teapot is at once filled up with boiling water, then the tea is put into the pot, and is allowed to stand for five minutes before it is used, the leaves gradually absorb the water, and as gradually sink to the bottom; the result is that the tea leaves are not scalded, as they are when boiling water is poured over them, and you get all the true flavor of the tea. In truth, much less tea is required in this way than under the old common practice.—*James Cuthill, London.*

TO WASH STRAW MATTING.—Take a pail half full of hot water, a perfectly clean long-handled mop, and a dish of dry, unsifted Indian-meal. Sweep all dust off the matting, then scatter the dry meal evenly over the room. Wring the mop so dry that it will not drip at all, and rub hard, one breadth at a time, always lengthwise of the straw, and use clean water for each breadth. When the matting is dry, the meal can be swept off easily; it should always be done on a dry day.

HOW TO KEEP MEAT.—Meat is much better for family use when at least one week old in cold weather. The English method of keeping meat for some time has great merit. Experts say, hang up a quarter of meat with the cutend up, being the reverse of the usual way, by the leg, and the juice will remain in the meat, and not run to the cut and dry up by evaporation. It is worth a trial, and when made will be continued.

PUMPKIN SOUP.—Peel the pumpkin and cut it into pieces, removing the seeds. Put it into boiling water with some salt and leave it to boil until reduced to a pulp thin enough to pass through a strainer. Melt a piece of butter in a saucepan with a wine glass full of cream. Add the pulp when strained, with salt and pepper to taste, and a pinch of flour. Let the whole simmer for a quarter of an hour; thicken with the yolk of an egg and serve.

HOW TO MAKE GOOD CHICKEN STUFFING.—Three teacupfuls of grated bread crumbs rubbed through a colander (don't let a drop of water come near those crumbs, and take out every bit of crust); one teacupful of very finely-chopped beef-suet; two-thirds of a teacupful of chopped parsley; a good pinch of sweet majoram and summer-savory; the rind of one lemon; some grated nutmeg, pepper, and salt. Now bind all these ingredients together with one or two beaten eggs, stuff your chickens, and boil or roast them, and you will not be disappointed in your stuffing.

Rural Home Embellishments

Few things more plainly indicate a sound and profitable progress in farm life than those which are done purposely for embellishment—not for expensive fences and grand buildings, but for those things which make our homes and neighborhoods more attractive.

Tasteful surroundings of our homes have an important influence upon the life. The heart is touched by them, manners and speech are refined, and the old homestead, where the loving relations of life began, will always be remembered with a gush of feeling next to devotion itself.

A single true example of home embellishment will tend to refine the views of a whole neighborhood. It will tend to form ideas of elegance, grace and symmetry in the young, and cultivate in themselves a taste for beauty and refinement in all things. Surrounded by such influences, few of the young would grow up with unfeeling hearts, or coarse or clownish habits.

Most persons have the habit of clearing up and beautifying in the spring—the women to dust and scour and regulate generally in the house—the villager to paint and paper, and repair fences and make the most of the bit of land of which he is the owner. The farmer is also excited to clear up; to remove the rubbish accumulated about the house during winter; to rake over the dooryard or bit of lawn adjoining; make snug the woodpile or place it under cover, and generally to improve appearances by the exercise of a little good taste and labor. All this is commendable, healthful and in every way good; but more may be done so as to give a neighborhood or town the aspect of a well cultivated garden.

It is cheap and easy for the farmer to embellish his home. If the house has no paint it may have a grape vine or rose bush climbing over the porch or a window. If some panes of glass are patched, the defect may be hidden by a blooming fuchsia, heliotrope or verbena in an earthen pot, set upon the window sill before it.

If there is no gravel walk to the door there may be a rose bush or flowering shrub by the side of the carriage path to the house, so that the dusty or muddy way may be unnoticed in the contemplation of the beautiful flower or shrub.

Indeed, it is not the possession of money nor much leisure that will render a farmer's home attractive, but the air of odor and good taste, combined with common sense and judgment which he may possess, pervades everything. His fences near the buildings must be whole and stand erect; his door yards clean, where the cows do not chew the cud of contentment; sink spouts or other offensive objects nicely screened, and here and there a flourishing maple standing, like a good angel, with outstretched arms, to protect the house from summer heat or winter blasts.

Any person who has skill to manage a farm has the requisite skill to embellish the surroundings of the house; hundreds, however, say that they have not the time. Can this be so with the farmer or mechanic? We have rarely known a farmer who did not find time to attend an auction where the cast-off trumpery of several generations was to be sold, or to bring home a wagon load or two of rubbish to increase that already about the doors, or to torment the women by adding it to the stock deposited in the garret.

The pleasure of making our home attractive should be a gradual one. It is too valuable to be prodigal with. A little should be done and well done each year, and whatever is done carefully attended to afterward. Suppose such had been the practice for the last fifty years in any one of our towns, would not such a town now be more attractive than any that can be found in the country?

The first step to take is utterly to forget the old maxim that "money makes the mare go," and remember the higher and nobler truth that "the beautiful makes the soul grow."

Home embellishments would soon lead to the cultivation of a garden where an abundance of early and late vegetables would be produced, and, with a variety of fruits would not only promote health and happiness, but annually save a considerable outlay of money. This saving might then be applied to new paper or paint in the house, carpets, new furniture, clothing or tuition bills for the children.

Let good taste and love for the beautiful prompt us to embellish our homes.—*Grayville Republican.*

UNDERGROUND RAILROADS.—Fourteen miles of underground railway in London, are now in running order.

San Bernardino—A City of Farmers—A Wonderfully Rich Country that is Little Known.

After ground had been broken on the road at San Diego, and the work had been propitiously commenced with a small force of laborers, Judge Hyde, the President of the company, went to San Bernardino for the purpose of setting the ball rolling there on the same legitimate basis. The occasion of his visit afforded your correspondent a favorable opportunity to see that celebrated farming district, which was embraced with eagerness. The pleasure derived from such a trip can scarcely be described without gushing, like the waters that flow in the mountains and valleys, profusely and abundantly.

It is a shame for a San Diegan to admit that there is no stage line through his own county, to San Bernardino, notwithstanding there is now a good road, which could be made first-class with an expenditure of less than \$5,000. The longer route by way of Los Angeles is necessarily travelled, though this must soon change. From the steamer off San Pedro it is 94 miles to San Bernardino, seven of which by water and twenty-two by railroad bring the traveller to Los Angeles. Thence sixty-five miles by stage (daily) complete the journey, between sunrise and sunset.

Though somewhat tiresome on a warm day to ride over great plains and dusty roads, the scenes presented to the traveller richly repay him for the trouble. The valleys of San Gabriel and the upper valleys of the Santa Ana, with their streams of water and groves of willow and cottonwood stretching out into vanishing miles, and a surrounding background, of picturesque, romantic hills and mountains, ribbed and washed by the rains of centuries, afford ever-varying scenes of beauty, luxuriance and promising wealth. Vast upland plains that look like deserts in the fall of the year after countless sheep have nipped the last vestiges of vegetation left by the cattle and horses, are seen with the eye of imagination penetrating the picture dotted all over with farms, vineyards and orchards. The agricultural sceptic, who sees dry lands for the first time and wishes he had remained in the East—soon is surprised when the stage stops in the middle of a great dry plain at Cucamongo. Then he sees with his own eyes what a Paradise lies dormant in the soil. There are thousands of unoccupied, bleak looking acres around this spot of extraordinary wealth, and reputed far and wide for its productions. Looking toward the south, miles over this dry plain, the eye wanders over the distant valley of the Santa Ana, where farms, vineyards and orchards luxuriate in a Summer sun, in running waters and green trees, and where these are unoccupied, thousands of acres ready to welcome the husbandman.

The Temescal tin range lies sleeping between us and the Coast range to the southwest, and east of us the San Jacinto and San Bernardino mountains rise like sullen monarchs of an unappreciated and neglected land.

Twenty-one miles more in a straight line over this plain, with the Santa Ana bottoms at our right in the hazy distance, and we drop from the dry bench to the ever green and moist

San Bernardino Basin.

Here we are, in the land of plenty, and here we see a sight, no where else in California to be seen. The whole valley is a city of farms—not a little contracted basin of orchards and grain fields, but an extensive district, watered by never-failing streams that flow in lavish abundance. Long double rows of willow and cottonwood indicate to the eye the roads that cross at right and separate farms, varying from five and ten to one hundred acres. In the centre is the town, laid out in rectangular blocks of eight acres each. Here is Salt Lake on a small scale, but free from its exclusiveness. Broad streets, shaded with trees under which flow streams of water, are sights that are pleasant; but a self-supporting, industrious community, sufficient almost within itself overflowing with a prodigality of nature's offerings, contented, homelike and independent—such a sight reminds one of a New England town.

There is little trade with the outside world. Arizona receives some of its products, otherwise there is no market for San Bernardino at present. On ten acres of land families are found living comfortably and happy. On one hundred acres—the problem is what to do with the crops. The productions are abundant in everything, from wheat to the orange and the vine. Butter—sweet as fresh cream—retails at thirty cents a pound. Good meat, good flour, almost everything needed for a sumptuous table are found here in abundance. The mountains to the north and east supply lumber at twenty-five dollars per thousand, with supplies back for coming generations. But little adobe here; brick and frame cottages dot the valley in all directions, embowered by trees and vines. Your correspondent counted twelve public schools within an area of six miles square. They live there—in San Bernardino.

Artesian water is flowing from about seventy-six wells, bored to depths varying from seventy-five to one hundred and fifty feet. These are only luxuries and labor-saving expedients. The water that flows off in Lytle Creek, Warm Creek, Santa Ana River and Mill Creek, besides numerous other streams, is sufficient to irrigate all the country adjacent and below, in the Santa Ana Valley. It is only the want of one thing—facilities for transportation to a market

—that prevents the farmers already there, from quadrupling their crops, and deters thousands of others from settling in the vicinity.

Riverside

Is located twelve miles southwest from San Bernardino, on a bench land on the south side of the Santa Ana River. The line of the railroad passes within three miles of this place, and it is now understood that a change in the route will be made, so that it will pass very near or through the town.

This colony has practically settled the question of the value of the bench lands, or dry plains and has shown that with irrigation they are equal, if not superior for cultivation, to the moist bottom lands. At an expense of \$60,000, a long ditch has been constructed many miles, of sufficient capacity to irrigate a large extent of country. By dint of enterprise, pluck, intelligence and coöperation, a little colony has succeeded in making lands, which were considered worthless, marketable at prices varying from twenty-five to forty dollars per acre. This, again, is only a spot in the county. There is room for many more to follow suit.

The water in the ditch was brought into the lands of the colonists one year ago last July. Since then they have accomplished marvels in agriculture. At the residence of Judge North, President of the colony, your correspondent saw the finest nursery of young trees that he ever saw of equal age. The facts are better than the adjectives. There were thousands of lemon trees, raised from seed planted on the 10th of July last year, now flourishing at heights of from one foot to seven feet. Orange trees, lime trees—all in comparatively the same luxuriance. Long rows of peach-seedlings five to eight high. Two large bananas, ten feet high, grown from small shoots set out last February.

The nursery contained nearly all the fruit trees cultivated by orchardists, and all were in a remarkable state of progress and healthful growth.

A large area is being cultivated in strawberries, which appear to flourish well. Corn and small grains are equally successful as crops. But it is useless to enumerate—everything seemed to be growing well, and to Judge North, and his associates, much praise is due for the manner in which they have demonstrated to the world the value of lands hitherto neglected.—*Cor. Alta.*

The Question of Organization.

This is a day of organization, of centralization. Mechanics organize for the purpose of mutual protection, which means, really, for the purpose of controlling the prices of labor. Manufacturers combine for mutual protection and the preventing of competition, which means to fix the price of manufactured goods. Railroad officers organize for mutual protection, which means to adjust rates of freight and passenger traffic.

Other features are involved, it is true, and are put forward most prominently, but the great end to be subserved, though kept in the background, perhaps, is this matter of compensation,—the control of the "almighty dollar." It becomes a question with farmers, the great leading question of the day, whether they shall toil on year in and year out, producing the food for every other class and persuasion of men, furnishing the materials for commerce and manufactures of all kinds, and quietly submitting, not to the laws of supply and demand, which all would agree in submitting to, but to a horde of speculators and monopolists, who purchase at their own agreed price, what is for sale, and to another horde of monopolists, who sell what the farmer needs at prices fixed by an equally potent organization, or whether the farmers, too, shall organize to control the varied products of their labor, skill and capital.

It also becomes a serious question whether or not farmers can and ought to control some of the branches of business that they now support—such as that of commission for the sale of products, the manufacture of implements needed upon the farm, and the conduct of general supply stores.

We are aware that all of these things have been talked of and written about before, but we are also aware that a general discussion of the subject was never so much needed as at the present time. With increasing numbers, intelligence and capacity come duties and responsibilities that must not be ignored. It is to be hoped that there will be a general response to the latter day calls for organization among the farmers of the West.—*Prairie Farmer.*

THE DATE PALM.—There are several date palm trees growing in Mission Valley, and a pair of them stand near the road which leads out of Old Town in the direction of the San Diego river. The last mentioned of these have not borne fruit for a number of years, but two of those in the orchard at the Old Mission are bearing at present. The dates from these trees are by no means as good as some we have tasted which were grown in Mexico. Persons perfectly familiar with the tree and its peculiarities, say this is ascribable to the fact that the female trees, which bear the fruit, are so far distant from their mates—they are nearly one hundred feet apart. The climate of San Diego is exactly similar to that of regions in Mexico where the date is grown with great success. We think that the reason given above explains why the fruit of the tree, in the garden of the Mission, lacks the flavor necessary to make it palatable. It is probably that the age of the trees—they are fully 100 years old—may have some effect in deteriorating the quality.—*San Diego Union.*

Establish Local Manufactures.

Their Importance to Agriculture.

In past days the ancestors of the present generation of farmers were content to scratch the earth, and to leave to the bounty of unassisted nature and to chance, the hope of an abundant harvest. As time progressed, as population increased, wants multiplied, and the struggle for subsistence became more intensified in consequence of increased numbers, men had to set their brains to work, and call in the aid of science to help them in the conquest of the stubborn earth, and snatch from its bosom hidden wealth long locked therein unheeded—nay, undreamt of. Hence it is that agriculture has developed in modern times into a science, and the farmer has learned how to increase, many fold, the production of his land. But he has yet in many instances to make a

Step in Advance.

In such a country, for instance, as California with a limited and scattered population, and where the aim of the majority of immigrants possessed of means, but devoid of any special culture are to enter upon the cultivation of the soil, it is evident that at no distant period some embarrassments to the agricultural community must arise from over production—all are anxious to be farmers, all are anxious to develop the hidden riches of the soil—consequently there results a surplus of production; all are producers—there are few consumers. Foreign markets have then to be sought, not always pecuniarily profitable. Then indeed the cultivator, through excessive competition and excessive charges for transporting to market his produce, becomes reduced as far as the profits of his labors are concerned to the state of his prototype of many centuries ago. Now the farmers of California, although not bearing such a proportion numerically to the total population as they do in some other countries, are seemingly approaching that goal, particularly in the production of wheat. We have

A Surplus of Eleven Million Cents

This year, and will have, probably, one of twenty millions next year. We are thus entirely dependent on the needs of foreign countries for the sale of our wheat crop. Supposing for instance that the crops of England happened to give an extraordinarily good yield, and that there was an excessive influx of cheap wheat from the south and east of Europe, what would become of our farmers? Thousands would be ruined. The

Necessity of a Home Market

Is thus at once apparent, and such a market can only be secured by the encouragement of local manufactures. Instead of sending his farm produce, one or two hundred miles to port, and then from ten to seventeen thousand miles for a market, the farmer should have a market close to his own doors. The question is, can he have such a market, and how? To the first part of the query, we answer, that we think he can; to answer the second is the purpose of this article.

The only way in which a home market can be secured is to foster and encourage home

Local Manufactures.

A very cursory examination of our lists of imports and exports will show what can thus be done. We import every year, for instance, about one million pairs of boots and shoes, worth on an average four million dollars. Now it is a well established fact that the manufacture of boots and shoes has proved to be one of those in which we in California are peculiarly successful, yet we throw away four million dollars yearly, or rather give it to build up the industries of New England, New York and Pennsylvania. Now this industry would give employment to not less than three thousand workmen, who, including the families of the married, would represent a population of not less than seven thousand; and including the tradesmen, etc., ministering to their wants, are of not less than twenty thousand. But this is only a solitary instance; we export leather and hides annually to the value, probably, of two million of dollars. The leather should here be converted into boots, shoes and saddlery, and the hides having been tanned would subserve the same purposes.

We import annually eight hundred thousand gallons of spirits, which would consume one hundred and sixty thousand cents of wheat, and we import the equivalent of between thirty and forty thousand boxes of raisins every year,

while at the same time we are raising the finest raisin grapes in the world. We could go on adding article after article to the list, such as soap, candles etc., for all of which we have the

Raw Material in Abundance.

And in fact ship it away to receive it again in a manufactured state. We export nearly all our wool, when we possess water power equal to that of New England, to whose factories it is taken to be eventually returned in the shape of clothing, etc., to the annual value of, at least, thirty millions of dollars. In this we annually lose at least, twenty million dollars, an immense wages fund, one that would pay the wages of twenty-six thousand operatives, whose families with the families of the tradesmen supported by them would add one hundred and fifty thousand to our population. Now reckoning only those articles, the manufacture of which could be really profitably undertaken in country districts, we would, did we produce them ourselves, add at least two hundred and fifty thousand to our population, but if we included all the articles of import for which we have facilities in San Francisco, as well as in the interior, we would require

Our Population Doubled.

In order to be able to produce them. From the drift of this article, it will plainly be seen that we advise the erection of woolen mills, tanneries, soap and candle factories, and fruit drying houses, etc., in our towns in the interests of our farmers, either by men of capital, who are sufficiently intelligent to be able to recognize the chances lying open to them, or by a union amongst intelligent and enterprising agriculturalists themselves. The farmer of to-day should take another step in advance of his old-time predecessor, and help in his own interest to manufacture the raw material that he himself produces. We think that there is sufficient inducement for co-operation in this matter on the part of our farmers, and we know that unless they do this, or that they encourage some one else to do it for them, that they may long mourn high freights and low prices.

"A Wicked Address."

The *Commercial Herald* of San Francisco, a paper strongly suspected from its tone, of being in the interest of the wheat buying and freighting "ring," speaks of the address recently issued to the farmers of the State by the Committee of the Farmers' Union, as "a wicked address."

We are not surprised that a paper that will pander to the interests of an oppressive monopoly, now weighing like an incubus upon the prosperity of the farmers of California, should endeavor to stigmatize the address with any vile epithet at its command; but we are disappointed that in its attempt to show wherein it is "wicked," it should have made an effort so "thin" and pointless.

The writer finds some ten lines of the address that seem to hit him on the "raw;" they are these—

It is a mortifying and humiliating fact to the farmers of this State, who have this year produced 20,000,000 bushels of wheat for export, that one man by his combinations with capitalists, railroad, steamboat and vessel-owners, has almost as complete control over them and their wheat as though that wheat was his own property, and they his slaves. That that one man has the power to enforce his will or wish in regard to the disposition and price of that wheat with the same absoluteness as though he had the whole force of the Government at his command.

Now we assert that in our opinion the quotation contains a scaring truth, one that just rakes down upon the "tender," and of course hurts; else why the *Herald's* tears? The writer in endeavoring to whitewash the transactions of the "one man" and his accomplices in putting up freights largely above original charters, thereby pocketing perhaps millions, which is just so much extorted from the farmers, says, in a tirade of meaningless sophistry—

"It is clear that ships must be got here by some agency or other. The farmers cannot pursue their avocation and be merchants at the same time. The 'one man' here alluded to has made it a specialty to engage vessels that the farmers might market their crops. The owners of those vessels, and not he, specified the terms for which they would carry grain, and those terms were in proportion to those paid for the same service by the shippers of other commodities. If that 'one man' had not used his most active exertions to secure tonnage for our farmers, they might as well not have raised their crops. He acted simply as broker for a large number of mercantile firms in this city whose earnest desire is to promote the prosperity of agriculturists, who are their steady cus-

tomers. Our merchants and business men are sensible enough to comprehend that the prosperity of our farming community implies the prosperity of all other classes in the State. When the farmers are independent, everybody else prospers, and it is the veriest nonsense to allege that any intelligent business man would give countenance to measures tending to rob or impoverish the tillers of the soil. If that 'one man' had not done as he did, the farmers would have been the first to denounce the mercantile classes of this city for not providing tonnage to market their crops. It is wicked to arouse discord between the farmers and their mercantile factors."

In our opinion the shipping men of San Francisco ought to be sensible enough to comprehend "that the prosperity of our farming community implies the prosperity of the State," and therefore instead of employing the "one man" as their "broker" to raise freights above all former precedent and lessening the profits of the farmer in a corresponding ratio, should have acted in good faith towards the latter, on whose success in their toilsome and uncertain pursuit the prosperity of the State largely depends.

But instead of this, they lend themselves—if the *Herald's* assertion be true—to an alliance with the "one man," employing him to monopolize the carrying business upon the seas and put up freights to the present ruinous and extortionate rates.

The shipping firms in San Francisco, have it just as much in their power as the "one man," to secure tonnage for our farmers, if they are so disposed, and keep the freight rates down to the original charters. But instead of this, they submit to the "one man" as their "broker" to put up freights against the agriculturists, "who are their steady customers."

The country press of the State, representing more directly the interests of the farmers than does the *Herald*, sustain the views embodied in the address, and we are quite sure they are not bribed by any monied influence, but speak their honest convictions. What the *Herald* is writhing under, in common with another paper which draws pap also from the "one man," who needs their support in his stupendous scheming, doubtless is, that the address has brought out some plain facts, perhaps unwelcome truths, showing conclusively that certain "mercantile firms" of San Francisco are not in unison with or acting for the interests of the agricultural classes, as have been by them long and ardently incited.

To use the *Herald's* own words, "it is wicked" that the shipping firms of San Francisco, having ostensibly the interests of the farmers at heart, should allow this "one man" scheme to prevail; and it is simply monstrous that the *Herald* should attempt to whitewash or sustain his extortionate acts; and then in the midst of a sea of crocodile tears exclaim:—"It is wicked to arouse discord between the farmers and their factors."

It is the miserable truckling to a few schemers in San Francisco which has rendered the city so obnoxious in the minds of many of the people of the interior of the State. The *Herald's* apologizing for such high-handed operations as has been practiced this season in preventing the chartering of ships by any but those chosen by the "one man," is entirely unsolicited by the better class of our business men. It is a positive damage to our mercantile interests; an injury to the whole business of the city and of the State.

It is a plain fact that San Francisco can improve only as the varied interests of the State develop. Some organized effort should be made to assist manufactures here which will consume interior products, and to cheapen transportation so that raw products and manufactured goods can be shipped away profitably, rather than to tolerate the damaging practice of a few insatiable schemers.

Excelsior Oats.

EDITORS RURAL:—I wish to suggest to subscriber at Campo, San Diego, that in his next trial with the three varieties of oats mentioned in his article of last week "About Raising Oats," that he sow the Excelsior on the dampest soil, and see how it will change the result. The Norway is about the biggest birk that ever came along, in this section at least. I have tried nearly every new kind of oats, but have not found any equal to the Excelsior for either quantity, quality, or for hay. Pure seed can be obtained of Bray Bros., 226 Clay street, San Francisco.

Oakville, Napa Co., Dec. 24, 1872. H. W. C.

We publish this for the benefit of oat-growers, and as a free advertisement for Bray Bros.

Santa Barbara.

An Ideal City.

Our ideal is within the range of no remote possibility. A city, cool and green, silvery fountains glinting in the golden atmosphere, mimic water-falls, whose musical plash shall pulse to our twilight songs, the hills towering, vine-laden and fair, the mountains crowing all, dreamy and far away, mantled in clouds or glowing and glistening under the sun. Roses whose perpetual bloom shall gladden the senses with rifts of crimson or snowy bloom. O, for the blessed, free, never-failing water. And the sea, changeful and shifting-hued, lifting its stormless reaches far away to where the crescent islands lean against the sky.

Fruits, Etc.

The farmers delight in abundant harvests and fruit-growers in luxuriant present and prospective. The vines are lustrous with the purple and amber of grapes. Apples are no longer a doubtful production, but ripen to perfection in the young orchards. The almond and olive receive much attention from amateur nurserymen. An almond grove, three years old, containing 200 trees, yielded over 1,000 lbs. of nuts. The trees are slight and agile, with a delicate aroma, a long, silvery-green leaf, and in time of blossoming are lovely in softly-tinted, pinky blooms; they are a favorite.

The olive is of slower growth, has a darker, richer leaf, and a lustrous plum. They begin to bear in four years, and are peculiarly adapted to the climate and soil. Several young nurseries are flourishing, and in future may become an available source of income as well as a healthful luxury. The flavor of the olives grown in Santa Barbara is much more delicate than of those imported from the Orient.

The Italian chestnut has proven a success, and is cultivated for its beauty as well as for its fruitage. Walnuts grow to perfection, and will become a staple in a few years. Coffee and tea are beginning to be cultivated, which the future may reveal as successes or failures. Bananas and cocoa are receiving attention, and thus far unlimited encouragement; but as they have not reached the period of fruitage, we may not be over-jubilant. In fact, much pleasure and possibly profit is experienced by amateur farmers in horticultural tests.

And although the seasons are less defined and fruit is longer in perfecting than in warmer places, yet it is certain that most of temperate and tropical fruits will flourish in and about Santa Barbara without irrigation. Oranges and lemons, delighting in dreamy, windless cañons; strawberries in southern, sunny slopes; grapes on the hill-sides—these are the possibilities ascertained by small experiments, and are only the exception which prove what the rule might be.—*Cor. Bulletin.*

Blooded Horses in Oregon.

EDITORS RURAL PRESS.—When at Oregon City some time since, I met your gentlemanly corresponding agent Mr. Frank S. Chapin, who was soliciting subscriptions for your PACIFIC RURAL PRESS. I gave him my address and have received two copies, with which I am much pleased, and I find it a most interesting and useful paper, which ought to be in the hands of every farmer on the coast. Inclosed please find subscription for one year.

I wish to ask a favor of you, and that is to give me some information in regard to the market for horses in San Francisco, or refer me to some responsible party to whom I can apply. I have a lot of carriage horses that I wish to sell; they are blooded horses, and of the best trotting stock on this coast; they took first premiums at the State Fair for carriage and buggy horses. I have thought of getting some one in San Francisco to sell them for me, and any information or assistance you could give me would be thankfully received, and for any trouble you might take I would gladly pay you.

MRS. JANE ARMSTRONG.

Dayton, Yamhill Co., Oregon.

We have made the desired inquiry and find that the present is not a favorable season of the year for the sale of carriage horses in San Francisco, partly because the demand is not what it often is in the Spring and Summer, and partly because of the extra expense attendant upon their keeping at this season of the year. There is usually a fair demand for good trotting stock at fair prices.

COOKING BY GAS.—There are many obvious advantages to be urged in favor of this method of preparing our daily food. In point of economy in the first outlay, preference must be given to it, and the continued saving of expense is all in its favor. Neatness, handiness, and labor-saving may also be urged in its behalf. Later improvements have been made in the construction of gas apparatus for cooking, some of which we shall take occasion to notice from time to time. That there will be an active rivalry between the cooking-stove range and gas-cooking men, for years to come, there can be no question, and it will be observed with a considerable degree of interest by those who "read, mark, and inwardly digest."

CARRIAGES built on the American plan are now used on some of the French railroads.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAF. FRANCISCO, Thurs., A. M., Dec. 5.
FLOUR.—The export trade has not been up to the mark for the last five months. High freights have almost destroyed it. Shipments to China have fallen off sadly. Shipments during the week per mail steamer to China and Japan, as also to Honolulu and Tahiti aggregate 1,016 bbls, 1,130 half sacks, and 18,505 qr. sacks, equal to 6,207 bbls. Shipments for five months ending December equal 97,000 bbls. The tone of the market has improved during the week, the highest brand of Extra having advanced 12c. and the lowest 25c. We quote Superfine \$3.87½@4.12; Extra, in sacks, of 196 lbs. \$4.87@5.37½; Oregon brands, \$4.75@5.37½ in sacks of 196 lbs.

WHEAT.—The price of California Wheat in Liverpool has declined 4d. or 8 cents. This is in consequence of the arrivals of new wheat. The price in this market has increased 7½ cents during the week, and is now \$1.70 to \$1.72½ for shipping and \$1.72½ to \$1.75 for milling. The latter figure is also given for shipping. Receipts for last week aggregate 221,317 cents of Bay and 5,590 Coast, and exports 175,832 cents, per "Rokely Hall," "ly Hall," "Ailsa" and "St. Joseph." Over 4,500,000 cents has been shipped since the beginning of the harvest year. Sales during the week have included 1,700 sacks at \$1.50, 500 do. at \$1.60, 1,200 at \$1.62½, 3,700 do. at \$1.65, 200 do. at \$1.67½, 2,700 do. at \$1.70, 1,200 at \$1.72½ and 12,300 do. at \$1.75; or a total of 24,100. Quotation as above. Latest Liverpool quotation 12s. to 12s. 6d. for average and 12s. 8d. to 13s. for Club.

BARLEY.—Barley is weak in consequence of large arrivals during the week. Of Bay we have received 926 cents and of Coast 11,302 cents, coming from San Buenventura, San Diego, Hueneme and Moss Landing, principally Hueneme. Sales include 800 sacks, 4,150 Coast at \$1.30, 300 do. at \$1.32½, 200 at \$1.35, 1,100 Bay do. at \$1.40 and 300 Bay at \$1.42½. Quotations from \$1.30 for dark Coast to \$1.45 for Breving showing a decrease of 5 cents on higher figures since last week.

OATS.—Oats last week ruling \$1.90@2.10 for jobbing; have this week raised to \$2.10 @2.25; a marked improvement. Sales have aggregated 12,100 cents at from \$2.00@2.20. Receipts have been very light, only 885 cents.

CORN.—Is \$1.25@1.30 per 100 lbs.

CORNMEAL.—Is quotable at \$1.75@2.00 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$2.00@2.25 per 100 lbs.

RYE.—Is quiet at \$1.80@2.00 per 100 lbs.

STRAW.—Quotable at \$8.00@9.00 per ton for cargo lots.

BRAN.—Price has advanced to \$27.50 per ton from the mill.

MIDDLINGS.—For feed, are selling at \$32.50 per ton from mill.

OIL CAKE MEAL.—Is steady at \$30 per ton from the mill.

HAY.—The weather has interfered much with business this week. Quotable at close at \$14@22.00 ordinary to choice.

HONEY.—Best Los Angeles and San Diego sells at 20@23c; other kinds 10@15c in comb; strained, 10c@15c. per lb.

BEESWAX.—Quiet at 35@37½c per lb.

POTATOES.—Receipts include 3,071 sacks of Bay and 3,901 sacks of Humboldt. Sales have been lively during the week, including 3,350 sacks of Monterey, Tomalpas, Humboldt, Bodega, Pajaro and Petaluma. Prices obtained have been Humboldt \$1.40@1.45, Monterey \$1.20@1.25, Tomalpas \$1.50@1.25.

ONIONS.—Quotable at \$3.75 per 100 lbs. for choice.

WOOL.—Market continues dull. Sales in this city of 300,000 Fall at 16c@23c. for fair to choice grades. About 20,000,000 lbs. have been destroyed in the Boston fire, of which 2,500,000 lbs. were Californian. This has caused an advance of 8c. to 10c. and 20,000 lbs. of Fall have been sold at 42½ cts. since the fire. Receipts during the week aggregate 363 bales of Bay and 324 of Coast.

The following is from the Boston Shipping List of November 16th: "The advance in prices since the fire has been about 10c on fleece and pulled, 8@10c on California and 5@7 for Cape and Australia. So far as prices are concerned there is, in fact, no fixed value. Spring California, that has been selling from 40@45c, is held at 50@55c. Montevideo is held at 55c, that could have been bought before the fire at 42@43c. Cape is not offered under 42c, and is generally held at 45c and upwards, 44c having been refused for round lots; and it will be some weeks before we have a sufficient stock of fleece, pulled and California on which to base a price. The advance, however, on all grades may be placed at from 5@10c per lb. and we are satisfied that this advance will be maintained, and later in the season still higher prices. The amount of foreign Wool in bond in New York is 17,000,000 lbs, and in Boston 5,000,000 lbs. Considerable of the Wool is Cape, with a shrinkage of 75 per cent. on the average, so that the above amount would be reduced to comparatively small figures when reduced to clean Wool.

TALLOW.—Good quality of Cal. 8@8½c. **SEEDS.**—Flax 3c.; Canary, 3½@5c. Mus-

tard, ½@2c. for white, and 2c@3c per lb. for brown.

PROVISIONS.—Following are jobbing quotations: California Bacon 13@15c per lb.; Eastern do. 12½@13 for heavy and 14@15 for sugar-cured Breakfast; California Hams 15@17; Eastern do, 18@21c; California Smoked Beef, 12½@13½c. per lb.

BEANS.—The following are jobbing rates: Pea \$3.50; Small White \$3.50; Small Butter, \$3.50; large \$3.50@3.75; Bayo, \$3.25@3.50; Pink, \$3.25 per ctl.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5 Pecan, 20c per lb.; Hickory, 12c; Brazil, 16c. Chili Walnuts, 12½c.; French Almonds, 25 @ 30c.; Princess Almonds, 35@40c.; Cocoanuts, \$10.00@12.00 per 100.

HOPS.—California are dull and nominal at 30@35c. per lb.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 7½@8 per lb.; do. 2d quality 6@7 per lb.; do. 3d do. 4@5c.

VEAL.—Quotable at 7@11c.

LAMB.—Scarce at 9c.

MUTTON.—Quiet at 6c. per lb.

PORK.—Undressed grain-fed is quotable at 5½@6c.; dressed, grain-fed, 8@8½c. per lb.

POULTRY.—Live Turkeys, 18@20c. per lb.; Hens \$7.00@8.00; Roosters, \$7.00@7.50 per dozen; Chickens, \$4.50@5.00; Ducks, tame, \$10.00@11.00 per doz.; Geese, tame, \$14@17 per dozen.

WILD GAME.—Quail, 1.75\$@2.00; Hare, \$3.00@4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, 50c@75c.; Mallard Ducks, \$3.00@4.00; Teal, \$2.00@2.50; English Snipe, \$1.50@2.00; small, 50c@75c.; Venison, 8c.@9c. per lb.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is steady at 30@65c. per lb. Inferior and ordinary roll is dull at 30@40c.; choice at 57½c.@60c. New firkin is quotable at 25@35c.; pickled, 30@40c.; New York, 32½@35c.

CHEESE.—New California, 12@16c; Eastern at 14@17½c. per lb.

Eggs.—California fresh, are sold at 55@57½c.; Oregon, 45@50c.; Eastern, 20@30 per doz.

LARD.—California 1½@13. Eastern in cases 13@13½c.; do in tcs. 11½@12c.; in kegs, 12@12½c. per lb.

HIDES.—Sales for the week embrace 1,450 Cal. dry at 17½@18½c., and 1,670 salted at 8@9c.

FRUIT MARKET.

Tahiti, Or. per 100	60 00	Pomegran. per 100	45 00
Limes, per 100	90 00	Plums, per 100	10 00
Au'n Lemons, h. 10	00 00	Grapes, Mission, 2½	4 00
Malaga do, h. 10	00 00	Rose of Peru, 4	00 00
Bananas, bunch 20	00 00	Bk Hamburg, 4	00 00
Pineapples, doz	00 00	Black Prince, 4	00 00
Apples, Bell, h. 75	00 25	Muscad of Al, 4	00 00
Cooking, 50	00 50	Flame Tokay, 7	00 00
Pears, Eating, 1 10	00 50	Black Morocco, 10	00 12
Cooking, 50	00 50	Wine Grapes, 1¼	00 12
Quinces, h. 20	00 25		

DRIED FRUIT.

Apples, per lb.	6½@8	Pitted, do per lb.	18 @22
Pears, per lb.	8½@9	Raisins, per lb.	6 @12½
Peaches, per lb.	8½@11	Black Figs, per lb.	6 @
Plums, per lb.	8½@9	White, do	15 @20
Apricots, per lb.	6 @7		

VEGETABLES.

Cabbage, per lb.	½@¾	Artichokes, per lb.	4 @
Garlic, per lb.	5 @6	Tomatoes, river, b. 2	00 00
Green Peas, 10	00 00	Sprink Beans, per lb.	8 @10
Green Corn, doz.	15 @25	Lima Beans, 10	00 00
Marrowfat Squash	10 @25	Peppers, 10	00 00
per ton, 100	00 25	Okra, 10	00 00

GENERAL MERCHANDISE.

We note arrivals this week from Glasgow, Liverpool and New York, with large cargoes. Business has been tolerably brisk, particularly in the jobbing line. We note large sales of imported coal. Of Cocoonut Oil, 7,000 gallons have been sold at 55c.; 25,000 lbs. of Bacon at 12c. to 13c.; 20,000 tes. of Eastern Lard at 10c.; 250 cs. of California Lard, at 10½c. to 11c.; 500 cs. Meyers' Oysters at \$3.25, and 10 cs. of choice Citrons at 48c. to 50c. Besides these, large sales of Candles, both Eastern and Californian, are reported for local and interior trade. Teas, Coffees and Sugars remain unchanged. The following are the current rates for some of the principal articles of merchandise:

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES.—There continues a good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING.—There is very little demand for Grain sacks. English Standard Wheat bags, hand sewed, 15¼@15½c.; Flour sacks 8½@9½c. for qrs. and 13¼@13½c. for hlfs. Standard Gunnes 17½c.; Wool 70@75c.; Barley sacks 16c.@18c.; Hessians, 40-inch goods, 12@12½c. per yard.

BUILDING AND FENCING MATERIALS.—Dealers pay for cargoes of Oregon as follows: Rough \$19@20; do. surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35@40; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, per M	20 00	Banded floor, ref. M.	22 50
Rough refuse, per M.	16 00	Half-inch Siding, M.	22 50
Rough Pickets, per M.	18 00	Half-inch Siding r. M.	16 00
Rough clear, refuse, M.	22 50	Half-inch Surfaced, M.	25 00
Rustic, per M.	35 00	Half-inch Surf. r. M.	13 00
Rustic, per M.	24 00	Half-inch Butts, r. M.	22 50
Surfaced, per M.	32 50	Pickets, rough, p. M.	14 00
Surfaced refuse, per M.	22 50	Pickets, fancy, p. M.	2 50
Flooring, per M.	30 00	Pickets, fancy, p. M.	2 50
Flooring refuse, per M.	20 00	Shingles, per M.	3 00
Banded flooring, per M.	32 50		

The last sale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

PUGET SOUND PINE.

Rough, per M.	25 00	Flooring, 2d qual'y, M.	30 00
Flooring and Step, M.	37 50	Laths, per M.	3 50
Flooring, narrow, 40	00	Furring, per lineal ft.	10

REDWOOD.
 Rough, per M. 25 00 Tongued & Grooved, 40 00
 Rough refuse, per M. 16 00 surfaced, per M. 27 50
 Rough Pickets, per M. 18 00 Do do refuse per M. 27 50
 Rough Pickets, p. M. 20 00 Half-inch surfaced, M. 40 00
 Fancy Pickets, per M. 30 00 Rustic per M. 42 50
 Siding, per M. 27 50 Battens per lineal foot. 1c
 Shingles per M. 3 50
 Sugar Pine is jobbing at \$50@60 for clear, \$35@45 for second quality, and \$28@30 for third quality.

COFFEE.—Costa Rica 19@19½c; Guatemala, 18c. Java 23c; Manilla, 18½; Rio 19½@20; Ground Coffee in cases 30c.; Chicory, 10c.

SPICES.—Allspice 14@15c. Cloves, 23c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19@20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod new, in bundles at 7c.; Salmon in bbls. \$5.00@6.00, hf do. \$4.50@5.00; Case Salmon, \$3.75 for 2½-lb. cans, \$3.50 for 2-lb. cans, and \$2.25 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$8.50@9.00; extra, \$10.00, in kits No. 1 \$2.00@2.25; Mess, \$3.00; Extra mess, \$5.00.

NAILS.—Quotable at \$6.00@9.00 for assorted sizes.

PAINTS.—Standard White Lead 10@12½c; Whitening, 2½c; Chalk 2½c; Paris White 3c.; Ochre, 3½c.; Venetian Red, 3c.; Red lead, 11½c.; Litharge, 11c. per lb.

RICE.—Sales of China No. 1 at 5½@6½c. and No. 2 at 5@5½c. per lb.; Japan, 5½@6c.; Patna, 6½@7c.; Hawaiian, 8 @9c. per lb. for choice.

SOAP.—The prices for local brands are 5@10c. and Castile, 10@12c. per lb.

SUGAR.—We quote Cal. Cube at 12½c; Circle A Crushed, 12c. and Granulated 11½c; Golden C. 10c; Extra Golden C. 10½c; Hawaiian 7½@9½c. as extremes per lb.

SYRUP.—Prices may be given as follows: 32½c in bbls, 35c in hf bbls, and 40c in kegs.

SALT.—California Bay sells at \$5@5¼; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$19@20.

TEA.—We quote as follows for bulk descriptions: Oolong—Canton, 19@25c; Amoy, 28@50c; Formosa, 40@90c; Imperial—Canton, 25 @35c; Pingsuey, 50@75c; Moyune, 60c@1. Gunpowder—Canton, 30@42½; Pingsuey, 50 @90c; Moyune, 60c@1.30. Young Hyson—Canton, 30@40c; Pingsuey, 40@70c; Moyune, 65@1. Japan—Half chests, bulk, 30@75c; lacquered bxs, 4½ and 5 lbs each, 45@67c; same 3-lbs, 45@90c; plain 4½-lb bxs, 35@65c; 1-lb and ½-lb papers, 30@55c per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, Dec. 5, 1872.

FRUITS, VEGETABLES, ETC.

Grapes are nearly out of the market, principal kinds now selling being Muscat, Tokay and Black Morocco. Tomatoes will be out next week, none only inferior kinds now coming in market. The same may also be remarked of peas and string beans. Asparagus is very limited. We quote:

Apples, per lb.	5 @6	Carrots, doz.	15 @25
Pears, per lb.	5 @6	Celery, doz.	75 @
Grapes	6 @15	Cucumbers, 10	25
Apricots, 10	00	Tomatoes, 4	25
Pine Apples, each 10	00	Dried Beans, h 25	50
Bananas, doz.	50 @	Garlic, 8	10
Canteleaves, 10	00	Green Peas, 10	10
Watermelons, 10	00	Green Corn, doz.	37
Cal. Walnuts, 10	20	Lettuce, doz.	20
Cranberries, 10	75	Mushrooms, 10	75
Strawberries, 10	22	Horse radish, 10	50
Raspberries, 10	00	Okra, dried, 10	50
Gooseberries, 10	00	do fresh, 10	00
Cherries, 10	00	Pumpkins, 2	30
Oranges, 10	00	Parasnis, doz.	25
Limes, per doz.	25 @	Smoked, new 25	00
Figs, fresh, 10	25	Pickles, gal.	50 @75
Asparagus, wh. 50	00	Radishes, doz.	25
Artichokes, doz.	75 @	Summer Squash 3	00
Brussels sprts, 5	00	Marrowfat, do.	3
Beets, doz.	25 @	Huhard, do.	4
Potatoes, New, 5	00	Dry Lima, sh. 6	00
Potatoes, sweet, 3	00	Sprague, bskt.	25 @50
Broccoli, doz. 1.50	00 00	Salsify, per bunch 10	25
Cauliflower, 1.00	00 50	Turnips, doz.	25
Cabbage, doz.	75 @100		

POULTRY, GAME, FISH, MEATS, ETC.

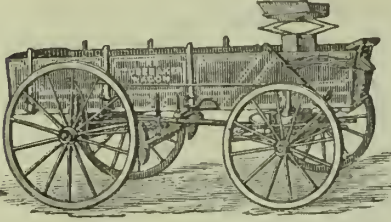
Poultry are in plentiful supply and will be so for Christmas. Fish is rather scarce, and is firm. We quote:

Chickens, apiece 62½@100	Whittaker's, 25
Turkeys, per lb. 20 @25	Johnson's Or., 25
Mal d'Canv's Bk 50 @25	Flounder, per lb. 37½
Teal, per doz. 2.50@3.00	Salmon, per lb. 25
Geese, wild, pair 50 @75	Parsley, per lb. 25
Tame, pair 2.00 @2.50	Pickled, per lb. 6
Snipe, per doz. 2.50 @3.00	Rock Cod, per lb. 12½
Quails, per doz. 2.50 @3.00	Cod Fish, dry, lb 12
Wild, do. 2.50 @3.00	Perch, s water, lb 10
Hares, each 1.50 @2.00	Fresh water, lb 15
Rabbits, tame, 50 @75	Lake Big Trout, 30
Wild, do. 1.50 @2.00	Smelts, large per lb 12½
Beef, tend. per lb. 18 @25	Small do. 10 @12½
Corned, per lb. 8 @15	Silver Smelts, 10
Smoked, per lb. 15 @20	Soles, per lb. 37½
Pork, rib, etc., lb 15 @20	Herring, fresh, 4
Chops, do. 15 @20	Sm'kd, per 100 60
Veal, per lb. 15 @20	Tomcod, per lb. 18
Cutlet, do. 15 @20	Terrapin, per doz. 50
Mutton chops, 12 @15	Maasler, p'k, ea 15
Leg, per lb. 12½ @15	Turbot, 10
Lamb, per lb. 12 @15	Sea Bream, 10
Tongues, beef, ea 75 @100	Halibut, 50 @62½
Bacon, Cal. per lb. 18 @25	Sturgeon, per lb. 4
Oregon, do. 18 @20	Oysters, per 100, 1.00
Hams, Cal. per lb. 18 @20	Chesep, per doz. 1.50
Hams, Cross's o 25	Soft Shell, 1.00
Choice D'field 25	Shrimps, 10
	Prawns, 10 @12½
	Sardines, 10 @12½

MISCELLANEOUS.

Butter, Cal. pr lb	20 @25	Do. Sup. do.	4 50@5 00
Do. Or. pr lb	20 @25	Corn Meal, doz.	2 50@3 00
Honey, pr lb	20 @25	Lard, pr lb	18 20
Cheese, pr lb	20 @25	Sugar, cr, 7½ lb.	1 00
Swiss Cheese, pr lb	50	Brown do, 8 to 10 lb	1 00
Eggs, Cal. pr doz.	65 @70	Beet pr lb.	12
Do. Oregon pr doz.	55 @60		

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IRON AXLE,
THIMBLE SKEIN,
HEADER AND SPRING WAGONS.

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FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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San Quentin, Cal.

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The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,

Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide. This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale by the

SWEEPSTAKE PLOW CO.,

At SAN LEANDRO, CAL., under the personal superintendence of the Patentee, F. A. HILL,

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AMERICAN CHIEF

GANG PLOW.

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This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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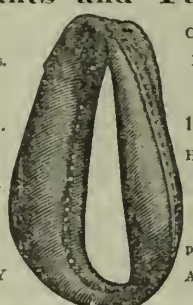
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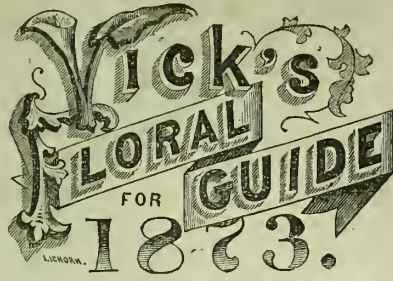
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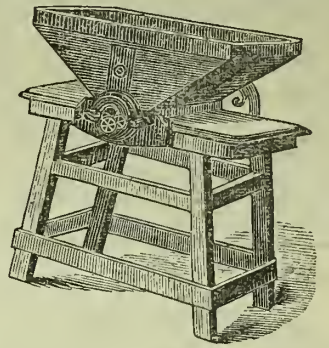
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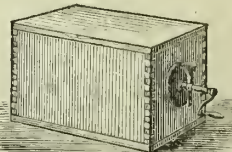
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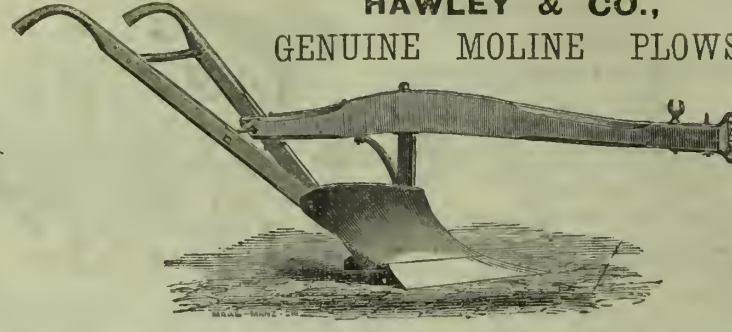
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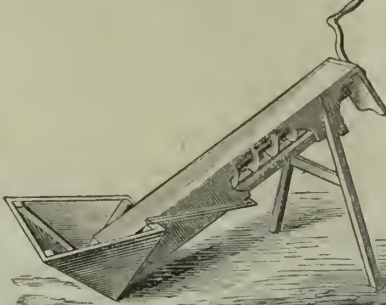
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For samples we refer to the first story of the City Hall, Oakland, erected four years since, and the window caps and sills, and other finished work in the Deaf and Dumb Asylum, Oakland; in the Oakland Cemetery around the lot of J. S. Emory. Also small specimens in the offices of Augustus Laver, (Architect of the S. F. City Hall) Kearny St.; David Farquharson, Architect, Cor. Kearney and California Sts., S. F.

Orders may be left with George W. Thompson, on the premises, or A. T. DEWEY, SCIENTIFIC PRESS OFFICE, No. 338 Montgomery St. S. F., where samples of the stone may be seen.

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Volume IV.]

SAN FRANCISCO, SATURDAY, DECEMBER 14, 1872.

[Number 24.]

Ants at Home.

For the entertainment of our readers we present an illustration representing the home and domestic life of the ant. Familiar as these little creatures are to almost every one, few are familiar with their natural history; and finding an interesting article on this subject in the *School Day Visitor*, we appropriate it entire.

"Ant nests or homes are called ant-hills, because of the hillock which they build up by the dirt which they remove from the tunnels and chambers of the nest. These ant-hills serve as an outer protection of the avenues and halls which are excavated under the surface. The entrance to the nest is simply a hole or tunnel hollowed out in the soil, and which the thrown-out materials conceal. As the excavation goes on, and the tunnel branches out into a labyrinth in all directions, the pile of earth and rubbish grows larger. The interior consists of corridors, landings, chambers, and spacious rooms communicating with each other by long and short passages. All these passages lead to one central and grand gallery, loftier than others, and having its circular ceiling supported with columns. The beautiful illustration our artist has given us represents the interior of an ant-hill drawn from nature; and it will help you better to understand the wonderful construction of the home of the ants. Outside of the hill you will see some ants occupied in drawing milk from plant-lice.

This custom is so strange that I must not pass over it. Ants are very fond of a peculiar liquor which plant-lice secrete and store up in their abdomen. By means of their *antennae*, which I have already described, the ants persuade the plant-lice—called *aphides*—to disgorge this liquor drop by drop, which they immediately appropriate to their own use. These *aphides* are often captured by the ants and taken into their nests, where they are carefully watched and kindly treated, in view of the benefit they expect to derive from them. So you see that ants hold property in stock, as many men do. And they raise them, too. For they sometimes bring into their nests the eggs of plant-lice, and tenderly care for them till the insect is full grown and is able to reward their kind nursing by a rich supply of such milk as the ant likes. Sometimes war arises between two ant republics for the possession of these *aphides*. And when such war takes place, it is very bitter, and the *aphides* are made to suffer many wrongs even from those who pretend to be their friends. There is nothing in insect-life more interesting than the domestic habits of ants, which in the different species are nearly the same. The females live together in the utmost harmony. They have no nests, like birds, in which they lay their eggs, but they deposit them wherever they happen to be while walking about. The workers pick them up immediately and carry them to the chambers set apart for them. Of them the mothers have no care whatever. All their maternal love and anxiety seem to be transferred to the workers, and carefully and affectionately do they take care of the tender and dependent young committed to them. In about two weeks the egg is hatched, and the ant appears in its *larva* state, in which it looks very unlike the full grown ant. The nurses are obliged to gather for the young, each day, the provision destined for their food.

They put them in the open air during the day. And that the nurses may know when the sun appears and shines on the hill, sentinels are placed just under the roof of the nest, who observe the rising of the sun, and when they are assured of the fact, go to tell it to those that are watching the *larvæ*, by touching them in an intelligent way with their *antennæ*. In a few seconds all the avenues are crowded with workers carrying the young out of the nest to put them on the top of the ant-hill, that they

may receive the benefit of the sun's rays. When the sun's heat becomes too great, their careful guardians remove them to chambers not far from the top of the hill, where the heat of the sun is more mild.

When the *larvæ* are ready to change into their *pupæ* state, the workers brush them clean, distend their skin, and thus fit them for the remarkable change they are about to undergo. The *larvæ* then spin for themselves a silken cocoon of a close texture and a gray or yellowish color. When they are ready to escape from their cocoon, the workers tear the silken covering from the *pupæ*, and thus assist to affect its

Ramie and Jute.

In the Report of the Commissioner of Agriculture for 1872, just received, we find an interesting allusion to the value and growth of two of the more recently introduced textile plants, Ramie and Jute, and speaking of them as likely to prove of importance, particularly to the Southern States; and as we have the climate of those States and some advantages they have not, for the growing of the

substitute for cotton, wool, flax, and hair. Each of these, I may safely predict, is destined to occupy an important place in the products and manufactures of this country; and it is not the least important consideration that they may serve largely to diversify the crops of our Southern States, a subject which has commanded much of my attention, because of my conviction of the many benefits which will result therefrom.

Warm Water for Plants.

The temperature of the water used in watering house plants or even those in the open border, is a matter that should receive more attention than is given it. It is too often the case that the temperature is wholly unknown and great injury is often the consequence. There is no mistaking the effect of warm spring rains upon young grass and plants, and its influence upon the germination of seeds; whilst autumn rains—unless they too are warm—produce no such sudden and vivifying effects.

Water should be tempered, should be made temperate, and never be applied to plants when below 60 deg., and had better be ten degrees higher than one lower. Experiments have shown that cucumbers in a hot bed will stand water at 90 degrees without injury; but as a standing rule for all plants and shrubs from 60 to 75 degrees is the right temperature.

Water used in watering plants should be free from sediment. It is not essential that it be pure water; but for showering the leaves and branches should be as near pure as ordinary spring or river water. In watering the earth of pot or border plants, even liquid manure, or water containing fertilizing salts can be used; but it should not be turbid or muddy. Such water soon fills up all the pores of the soil, preventing the ingress of air to the roots of the plant.

Extended Irrigation.

The foregoing, which refers more particularly to the application of water to pot plants, may very reasonably suggest the propriety of understanding well the properties and condition of water used for purposes of more extended irrigation. We not unfrequently hear of injury done to plants and trees by watering; and the charge is laid to irrigation; and at once a sweeping denunciation goes forth, condemning the practice as "worse than useless."

But find out the real truth, and the fault would lie, not so much in the application or use of water, as its nature, condition or temperature. It is not spring water that injures vegetation when applied, but it is cold spring water; nor is it the excess of water, half as much as it is the mode or time of application. The subject of irrigation is one of growing importance to the interests of our agriculture, and our columns are always open to its reasonable discussion.

Dr. FREDERIC W. MORRIS, resident physician of the Halifax Visiting Dispensary, has written to the *American Medical Times* that *sarracenia purpurea*, or Indian cup, a native plant of Nova Scotia, is a remedy for small-pox in all its forms in twelve hours after the patient has taken the medicine. However alarming and numerous the eruptions, or confluent and frightful they may be, the peculiar action is such that scarcely a scar is left to tell the story of the disease. If the vaccine or variolous matter is washed with an infusion of *sarracenia*, they are deprived of their contagious properties. The medicine has been successfully tried in the hospitals of Nova Scotia, and will be continued.



AN ANT'S NEST.

deliverance. They then watch over the newly born, feed it, teach it to walk, and never abandon it till it can help itself.

Lecture on Fish Culture.

Mr. Livingstone Stone, Deputy U. S. Fish Commissioner, will lecture before the Oakland Farming Club, Friday evening, Dec. 13th. Mr. Stone is now in San Francisco, writing up the report of his official visit to the Pacific States.

I. O. G. T.—We have received a pamphlet containing the proceedings of the 13th Annual Session of the Grand Lodge—I. O. G. T. of California, from Geo. B. Katzenstein, G. W. S.

plants alluded to, we extract from the Report as follows:

Ramie and jute, fibrous plants which promise great value, have recently been introduced into the United States, and to some extent have been distributed by the Department in the Southern States, the climate of which is alone adapted to their successful production. Of the former, little progress has been made in its use, because machinery has not been invented by which its fiber may be separated; but its value, in view of its fineness, strength, and beauty, will yet command an exercise of ingenuity which will make its culture a profitable industry.

The latter has already taken its place in the manufacture of carpets and other fabrics as a

CORRESPONDENCE.

Notes of Travel in Washington Territory.

[By our Traveling Correspondent.]

There are three ways to get to Washington Territory by public conveyance. One by ocean steamer to Portland, Oregon, distant from San Francisco by ocean route 650 miles, 48 of which is up the Willamette river. From Portland via Oregon Steam Navigation Co.'s Steamers and railroad, to Wallula, Washington Territory, distance 254 miles. This is the head of navigation on the Columbia river for nine months of the year.

From thence east 31 miles by the North Western Stage Co.'s stages and we reach Walla Walla, whole distance from San Francisco 935 miles. Fare by this route \$46.

Another Route.

This is by C. P. Railroad, east to Winnemucca, Nevada, 462 miles; thence north via Boise City, Idaho, to Walla Walla, distance 500 miles, traversed by stages of the North Western Stage Co. Total distance from San Francisco 962 miles, cost of fare about the same as by the Portland route.

Still another route is by rail and stage to Portland direct, distance some 700 miles; thence by river route mentioned above; and which at this season of the year probably the most preferable of either route. No more beautiful scenery is presented in any part of the world than is found on the river route from Portland to the head waters of the Columbia, of which mention will be made hereafter.

Towns of Walla Walla Valley,

The principal of which are Walla Walla, Waitsburg and Dayton; the former is the county seat of Walla Walla county, Washington Territory; situated in lat. 46° 10' north, and long. 118° 25' west from Greenwich, and contains about 2,000 inhabitants, and where 700 votes were polled at the election in November.

The town has two hotels; the principal one is presided over by N. R. Packard; he will soon remove, however, to a new structure of brick, costing \$30,000, the property of Frederick Stine, an old schoolmate of ours. A. H. Reynolds does the banking business of the place and is otherwise interested in manufactures in other portions of the county.

There are three or four grist mills in the vicinity of Walla Walla, the principal of which is known as the Standard mill, and owned by I. T. Reese, Esq., merchant of this place. The mill is run by water power, its size 46x54 feet on the ground and has five floors, with two run of burrs, and a capacity to manufacture 200 barrels of flour every 24 hours. Sixteen thousand barrels of flour were made at this mill last year. At this writing, wheat is quoted at fifty cents a bushel, and flour at \$3.50 per barrel. Middlings are worth \$20.00 and bran \$10.00 per ton.

Besides the above, as merchants, there are Paine Bros. & Moore; Jas. Jones; Baldwin & Whitman, and others we might mention if time permitted. Suffice it to say, it is one of the liveliest towns in the "far west;" its residents are alive to all the interests around, and 65 copies of the PACIFIC RURAL PRESS are taken at this place.

Waitsburg.

This place is nearly 20 miles east of Walla Walla and contains about 200 inhabitants; it has some half dozen merchants, of whom Paine, Preston & Co., and W. Whitmer are among the most prominent. The former are also the proprietors of a fine flouring mill at this place. The town contains also a very good hotel and manufacturing interests to correspond with the number of its inhabitants. It is beautifully located on the banks of the Touchet river and surrounded by an intelligent community of farmers, who, by their improvements seem to have settled here to remain.

Dayton.

This town is located on the Touchet river some 10 miles east of Waitsburg, or 27 miles direct from Walla Walla, the county seat. The first house in this place was erected in April last, and it now contains 200 inhabitants. Among its principal merchants are J. N. Day and Messrs. Wait & Matzger. The town was named in honor of Mr. Day and Waitsburg of Mr. Wait.

Wait & Matzger are also the proprietors of the Dayton flouring mills, which are run by water through two 24-inch turbine wheels, has two run of burrs and a capacity of making 80 barrels of flour daily. The same men are also the proprietors of an extensive planing mill and manufacture everything usually turned out by such an establishment. They are also heavily interested in the Dayton Woolen Factory, an incorporated company with a capital of \$40,000. Jesse Day is President and F. D. Frary is Secretary.

The mill is 40x80 feet, is to be run by water, but steam power will be used for drying purposes; it is to be a "two set" mill, and will be in complete running order next spring. Among

the enterprises of the place, note worthy, are, the store of Wait & Matzger, a fine fire-proof structure; and a new hotel, 40x60, in process of erection, J. M. Hunt proprietor, and will probably be completed before this will be in print; and not to be omitted is the fact, that here is an organization of Good Templars with one hundred members.

We are also informed by the principal business men here, that within a circuit of 15 miles north and east of here, there are a thousand and 160 acre farms open for entry and settlement. Of the land tilted in the vicinity, from 25 to 70 bushels of wheat per acre have been raised.

Walla Walla Valley.

In writing of this valley it is impossible to give anything more than an outline sketch, in the limited space you allot me. In order to appreciate its excellence one must visit it.

In speaking of the Walla Walla Valley we include all that portion of the country drained by the Walla Walla river, which comprises the greater portion of Walla Walla County, W. T., and a large portion of Umatilla County, Oregon, and is divided by the line separating W. T. from the State of Oregon. It is bounded on the north by the Touchet river and its tributaries, on the east by the Blue mountains, on the south by Pine Creek, and on the west by the Columbia river. From north to south this valley is about 50 miles long, from east to west from 30 to 40 miles wide.

The Walla Walla River,

With all its tributaries, heads in the Blue mountains, it flows in a general westerly direction for about 40 miles, and there empties into the Columbia river near Wallula, the present head of navigation at low water. In passing up the Walla Walla from its mouth the farming land for the first 18 miles, is just the width of one ranch. But the hills on both sides of the stream, are covered with bunch grass for miles in either direction, a reality, but equal to a stock raiser's dream of paradise. At 15 miles from the Columbia the Touchet empties into the Walla Walla river from the north, and a little farther up Pine Creek joins in from the south. The valley begins to widen out at the junction of these two streams very rapidly. The source of the

Touchet River

Is northeasterly from its mouth, and that of Pine Creek is southeasterly. These two streams head in the Blue mountains, some 40 miles apart they enter the valley and from two sides of a triangular shaped portion of this valley, while the above mentioned range of mountains forms the third side. All along the upper portion of the Touchet it is excellent farming land, and very fair its entire length. The bottom land varies from one hundred yards to a mile or more in width. Along the upper portion of this stream the farming land is not confined to the bottom, but the hills are equally productive for the growing of cereals. Above the mouth of this stream a perfect network of small creeks put into the same, thoroughly watering the valley in every direction. The Walla Walla river and

Mill Creek,

Each where they enter the valley, branch out in a dozen different directions, furnishing an abundance of water. Along the banks of the above mentioned streams there is more or less timber, and bunch grass grows everywhere. As a general thing the soil is very fertile, producing grain, vegetables and fruit in quality and quantity, equal to the best average of your State. The rains furnish all the necessary moisture, although we noticed a few who were irrigating.

We are informed that the best portion of this valley for agricultural purposes is that lying along the base of the Blue Mountains, and since visiting the same we are of that opinion.

There is from one end of this valley to the other a belt of beautiful sloping land adjoining on the east side of the Blue Mountains, averaging about ten miles wide, that is a rich, moist soil, some of which is now bearing crops, the largest portion, however, is not even claimed, let alone tilled. Farther away from the mountains, and nearer the Columbia River, the land is drier and not so productive, except as above mentioned close along the banks of the smaller streams.

Character of the Land and Climate.

This portion of the valley is similar in character to that of a great portion of the best grain land in California, and will produce as well with less irrigation. At present it is only fit for grazing purposes. As a general thing, fuel can be obtained without going far, but there are spots where it is wholly wanting. Fencing and building lumber has to be brought from the Blue Mountains. Forest timber has been set out in groves by a few, with good success. This valley is located between 45° and 46° North latitude, and we are informed that the winters are as mild here as they are in the Eastern States six degrees more to the Southward. The snow seldom falls more than two or three inches deep, nor does it lie on the ground any length of time, although last winter they did have six weeks sleighing.

Transportation

For their products is one of the greatest disadvantages the farmers of this valley have had to labor under in the past, but it is now settled almost beyond a doubt that the crop of 1873 will be borne to market via railroad car. At the present writing, all or nearly all the products of this valley, not consumed here, finds its way to Portland, down the Columbia. Wallula, situ-

ated 31½ miles distant from Walla Walla, is the point on the Columbia River to which place all the products of this valley are transported on wagons.

[To be continued.]

A Gobbler in Trouble.

EDITORS PRESS:—As is well known to you, it sometimes happens in the world's history that the males of God's Creation take it upon themselves to act the part of the females, and vice versa.

The following is an account of the doings of a gobbler in Stanislaus County, who attempted a practical illustration of such notions.

The incident actually occurred upon a quiet ranch but little more than a hundred miles from San Francisco, and excited considerable interest and a hearty laugh among all who became acquainted with its circumstances.

A gobbler, to all appearances as sensible as any other gobbler, and the only one on the ranch, all at once concluded to renounce strutting, gobbling, and all other pastimes of a gobbler, and seriously, of his own free will and accord, went to setting on hens' eggs. Efforts were made to keep him from the nest, but all in vain. He'd peck you while taking him off, and would creep back and cover the eggs, affecting most ridiculously all the airs of a matronly turkey-hen.

The lady of the house, when she found he was bent on setting, concluded to give him a fair showing. So she set him on thirty eggs well marked in pencil, and determined to see what would be the result of this novel experiment. He was as proud a looking gobbler, Messrs. Editors, as you ever saw. He sat as naturally as any hen. About the same hour every day, he would leave his nest to eat and drink, but was never observed to leave for more than half an hour at a time. He determined to do the thing in proper style.

Every visitor to the ranch went to see that reformed gobbler. The ladies were particularly interested in his successful imitations.

He was an object of interest even to the poultry. It was not uncommon to find a half dozen chickens watching him in his cozy corner, their outstretched necks the very expression of wonderment. The turkey-hens never deigned to go near him. Could they have considered his actions a rebuke? They had been very unsuccessful all the season in raising turkeys. Pullets would frequently get into the nest with him, and leave a fresh egg for him to try his skill upon it. But all such eggs were carefully removed.

While his slow work was going on, numerous were the guesses at his motives and his chances for success. Some thought he was "rattle-headed." Some suggested that as his hens had been so unsuccessful in raising their young, he became suddenly alarmed lest his race should become extinct, and considered it high time to learn to hatch turkeys himself by experimenting on hens' eggs. Others concluded he was seized with the spirit of the woman's rights reformers, and was setting to all husbands a noble, self-sacrificing domestic example.

All agreed that his odd actions justified the belief that he would be the happiest gobbler in the world, if he could only get to laying eggs.

It was the general opinion that he could not hatch. Some insisted that he was not shaped right for it; others, that he did not have enough animal heat; while the ladies contended that he "didn't know enough about it anyhow." Others guessed that if he did hatch, it would take him longer than a hen.

In spite of all notice and remarks, that gobbler went on undisturbed in his arduous undertaking, until he had set several days more than the three weeks necessary to hatch chickens.

Before the result is given, let us note a fact or two. Like all great reformers, our gobbler found grave difficulties in his way. His feet were large, and he was so heavy and awkward that when he stepped into his nest, he occasionally broke an egg or two. The place he had selected in the barn for his nest was such that the harvest hands would frequently cover him with straw. This compelled our hero to work his way to the surface and to get his eggs up with him the best way he could. In this way other eggs were broken. At last, when his setting had continued more than three weeks, but seven eggs remained.

On examination they proved to be spoilt, and were removed. He had no eggs. What then? Did he stop? No indeed. He found twelve eggs in another nest, and went to setting again as earnestly as ever. He continued on these a week or more, when the eggs mysteriously disappeared one night, and were supposed to be the prey of some worthless dog.

And did not this satisfy him? No. He was as determined as ever. He found a few eggs in his old nest, and crept back upon them, nothing daunted. Did not the persistence of that gobbler, as a hero in the poultry-yard,

smack of the perseverance of a Bismarck or a Grant?

He seemed resolved "to fight it out on that line, if it took all summer." As a reward for his perseverance, he was allowed to set to his heart's content on fifteen more well-marked eggs. Every one began to wish success to that gobbler. He commenced this third attempt as earnestly as he did the first. Two weeks passed. He had managed to get rid of all of the eggs but three. For several days he showed signs of weakening. He would leave his nest a longer time than formerly. He began to forget himself, and gave an occasional strut. After six weeks earnest trial, he finally abandoned his nest, and "Richard was himself again." Our hero seemed to be fully convinced that for a gobbler to hatch eggs is on the list of impossibilities. After six weeks of honest effort and complete failure, his look of humility seemed to say, "Don't expect a gobbler to hatch eggs."

About this time, a patent medicine peddler came along, and made a diagnosis of the case. His sage conclusion was, that the gobbler did not hatch the eggs because they were not his own. Please say to him, if he will only believe it, that by chance a bottle which he left of that cure-all, the Australian Blood Purifier, was thrown out of a window, and its contents mixed with the water of a chicken trough. Our gobbler got a sip of it, and from that day to this he has been sound and sensible.

Stanislaus, Dec. 2, 1872.

W.

Best Twenty Apples.

EDS. PRESS:—In response to your call for a list of the best twenty varieties of apples for an amateur garden or orchard, I send you a list for this locality.

In the first place, I think the number much too large for the amateur or market grower. After going through with the 130 to 140 varieties that I have fruited here, I select ten that fills the season, from earliest to latest, and which will give better satisfaction than a larger list within a district of twenty miles bordering on the coast.

It is but little use to give a list for the market fruit grower because climate and soil make such a very great difference with some varieties. Time of ripening is the most important point that should determine the selection for a particular locality.

Amateur list: Red Astrachan, Benoni, Gravenstein, King of Tompkins Co., R. I. Greening, Yellow Bellflower, Esopus Spitzenburgh, Wagener, Monmouth Pippin, Newtown Pippin.

The varieties ripen in succession as given in the list. Additional list: Early Harvest, for the coast section, Carolina Red June, for the interior, American Summer Pearmain, Melon, Lowell, Canada Reinette, Fall Pippin, Rox, Russett, Baldwin, Ortley, White Winter Pearmain.

A selection of 50 trees for family use, to ripen in succession: 4 Red Astrachan, 2 Benoni, 5 Gravenstein, 6 King of T. C., 5 R. I. Greening, 6 Yellow Bellflower, 6 Esopus Spitzenburgh, 4 Wagener, 12 Newtown Pippin, (yellow).

The market orchard should contain but very few varieties, the less the number the greater the profit, provided the best only are selected.

W. H. PEPPER.

Liberty Nurseries, near Petaluma, Sonoma Co., Cal.

Carpinteria, Santa Barbara.

EDITORS PRESS:—We, of La Carpinteria, think we have one of the best little "nooks" on this whole coast. I am sure there is no clime more pleasant, or soil more fertile than ours. One fault, (if it is a fault,) we are very limited in territory. The mountains came near drinking from the Grand Pacific all the way along here, but left a little nook where a goodly number of happy homes could be raised, where we can rest under our own vines and fig trees.

We have had no rains yet, but we have plenty of time to get wet. But few of us are any ways uneasy, although we seldom get too much rain. Our crops were good and farmers are very well pleased with the products of their labors. Corn is mostly harvested and we can show "cribs," that would do honor to any place in the State, and I think no State could well be ashamed of as good.

Our lima beans are good and pay well. Friend Robt. McAllister planted nine acres and harvested eleven tons which sold on the ground at five cents per pound, clearing one hundred dollars per acre. That is doing a little better perhaps than will average one year with another, but the lima bean is as easily raised as other beans and usually yields as much or more. McAllister picked and shelled the product of one vine which weighed four pounds. If there is or was a bean vine in the State that will beat that, we should like to hear from it.

Some of the fruits do not do as well here as further north. The apple, pear, peach, and plum cannot consider themselves at home, but choosing varieties most suitable we can raise enough for home use. As to garden vegetables we can have them fresh from the ground all the year. Taken altogether, we think there is no place where one can have more of the comforts of life than in this genial clime.

O. N. CADWELL.

MISCELLANEOUS.

The Lion and Tiger Trade.

In the course of my wanderings around the city, I came, the other day, across a monopolist, *pur et simple*. He is a trader on a large scale, but is generally very careful not to handle that live stock in which he deals; nor, for that matter, do any of his employers. His business is the importation of every variety of wild beast and bird, from an elephant to a guinea pig, from an ostrich to a Java sparrow. Does the proprietor of a menagerie lose his elephant, he repairs to this gentleman's repository. He states whether he would prefer an African or Asiatic elephant. He gives an order according to his fancy, and in due time the animal arrives, and is immediately shipped to wherever his new owner's caravan may happen to be. If an African is wanted, a dispatch is at once sent to Cape Town; if horned horses, giraffes, or rhinoceroses are in demand, orders are at once sent out to New York for all that can be bought or found. The fact is, this gentleman has some fifteen employers, who are scattered over Africa and Asia, whose sole business consists in collecting rare wild animals for him. So complete are all his arrangements that none are found to compete with him in the business. He has the entire trade to himself, and supplies every menagerie in this country with such animals as they need, from time to time. There are over thirty menageries travelling about the country every year. Every year they lose a certain percentage of their animals from natural death or by accident. Some of the more rare animals are generally delicate and never become acclimatized, and consequently do not live long. This makes them very costly. Others again, like the giraffe, often die of sea-sickness on the voyage. The giraffe, too, is so awkwardly built that it does not lie down with its legs under it like others of the antelope tribe; consequently if the vessel rolls at sea, it loses its balance, is swung against its cage and frequently breaks its long, ungainly neck. This risk runs up the price of giraffes to a high figure. A year or two ago a well known showman, who had imported four giraffes through this gentleman's agency, but who took the sea risk on himself, lost them all on the voyage. He could not now get four equally good specimens under \$25,000. But when a cargo does come safely across, the profits to the importer are very large.

It is a great mistake to suppose that any of these animals are captured when full grown. A full-grown lion, could he be trapped and put in a cage, would soon pine away and die. A full-grown, wild elephant is the most savagely treacherous of animals. Even when captured young, and trained in a circus, the elephant betrays these inborn traits more and more as he grows older. It is only of late years that elephants have been imported from Africa. Many persons will recollect P. T. Barnum's advertisement of the first one—a dwarf—which was to appear in his menagerie. The animal, however, died on the voyage, and was consequently never seen in this country. Our monopolist dealer in wild beasts soon after obtained four young elephants from Africa and retailed them here to different showmen at about \$8,000 apiece. They were "babies." The elephant is an animal of very slow growth. When five years old it does not stand more than three feet high; and one out of the four alluded to above was only thirty inches high. They were, however, a perfect godsend to showmen in the way of startling novelties. One, the thirty-inch one, was coolly exhibited as a dwarf. Another was shown as the offspring of an old female elephant which had been in this country years before the youngster first saw the light in his native African jungle. Three of these young elephants are still alive and in this country, but they have grown out of all knowledge, especially the dwarf. The showmen who exhibited the young calf, asserted to have been born here, made a great hit, as it is pretty generally known that elephants will not breed in this country. Lions breed freely. In fact, there are few menageries which do not have a litter of cubs every year. But the mothers always destroy or desert them, and they are obliged to be brought up on milk given to them in a bottle, similar to that used in raising babies by hand. The hippopotamus has also been known to breed in the Zoological Gardens, in London. Like the lioness, she destroys her young as soon as they are born, but the attendants in London did once succeed in rescuing a young one from its mother, and in bringing it up by hand. But animals brought up in this artificial way and born in a confined cage never grow up to be such fine specimens as those born in a state of nature.

As a general thing, all animals are captured when young, by natives, acting under instructions from the white agents. If lions are wanted, the natives sally up the country, and either kill the parents and then secure the cubs, or track the lioness to her den, and then, waiting till she goes hunting for food, seize the opportunity of stealing the cubs. In capturing elephants, they drive them, old and young, into an enclosure, hamstring the old ones so as to disable them from protecting their calves, and then easily secure the young ones. An African lion commands a higher price in market than

an Asiatic lion, on account of his more noble and commanding appearance; his mane is much thicker and longer than that of his Asiatic brother, and is black. The quantity and length of the mane is the test of the value of lions. An African lion sells for \$3,000; an Asiatic only \$2,000. The same with tigers. Royal Bengal tigers will command \$6,000 a pair; Brazilian only \$4,000 a pair. Camels and dromedaries bring about \$1,200 a piece, but white camels have been sold at \$2,500 each. A good ostrich can be bought for about \$405; elephants from \$6,000 to \$8,000; horned horses, so-called, though they are really only a variety of antelope, from \$1,500 upward.

The importation of animals is only a branch of the business; but it is, in this case, very extensive, for the last fifteen years, the value of the animals imported having averaged over \$100,000 a year. Of course, the needs of every menagerie are known; and when one wants to sell a surplus animal or two, or to replace them with finer specimens, they are almost invariably sold direct to this gentleman, or through him, on commission to the proprietors of other menageries. A very fair menagerie may be stocked for \$50,000; but some few of the giant shows value their stock of animals at two or three times that figure. The aggregate value of all the wild animals in the different caravans in this country must approximate \$2,500,000. In no other country in the world are there so many kept in confinement. The show business is essentially American, and, as a general thing, is a very profitable one.—*Prairie Farmer*.

EPICHRICKENIC.—New York dispatches say: Lately there has been a very noticeable decrease in the markets of this city, and especially at the poultry stalls in Washington Market. In many instances, chickens which are dressed and sent to market, have dark streaks in the neck, and the head is swollen to an unusual size. A terrible disease has broken out in the poultry pens in several places throughout the State, and has caused a considerable amount of commotion among the poultry and game-dealers in this city, notwithstanding some of the dealers in fowls in Washington market, recently denied all knowledge of the disease. They were disposing of hens and chickens bearing evidence of having died of the disease. One dealer admitted the existence of the disease, and said that a few days ago he was in Pennsylvania and all along the banks of the Susquehanna the poultry were dying in thousands from the disease, and nothing has been found to arrest it. Fowls are taken with staggering fits, running at the beaks, and, in fact, bearing all the symptoms of the epizootic. These fits renew with decreasing intervals and increasing violence until death, which generally ensues in a few hours after the attack. As soon as chickens are attacked they hide in holes or crawl off to some corner.

CARE OF TOOLS AND IMPLEMENTS.—The injury done to hand tools and implements by long exposure to rain and sunshine often amounts to more than the wear and tear. Even when implements are made entirely of iron and other metal, the scales of rust that will form on smooth and bright surfaces in a few days will often injure the parts more than the wear during the season. A hand hoe is frequently left with the bright blade covered with wet earth pressed down on the surface, thus facilitating the formation of a thick scale of rust, which wears out the steel and makes the tool work unaccountably hard. It should be one of the inflexible rules of the garden to wipe the bright surfaces of all tools clean, and cover the parts with any kind of oil or grease that contains no saline matter. The wood-work of hand tools and implements, even when painted, is often seriously injured by rain, dews and sunshine. Water and dampness will raise the grain of the timber, settle in the joints and hasten their decay; and the hot sun will crack the surface, and warp, contract and twist the wooden parts to such an extent as to cause more damage than all the work that has been done with it.—*Canadian Farmer*.

THE *American Rural Home* says that an editor or commercial writer who can give advice as to the exact time when to sell farm produce, which is reliable in most cases even, had better quit his pen and take to trade. He has mistaken his calling. The knowledge that would secure such a result would enable a man to accumulate millions of dollars by manipulating grain in the great central markets of the world. Information as to the state of the markets and the prospects of crops, an editor can place before his readers, but then his mission is done: direct advice as to acting, he should chary in giving, and his readers wary in following. The producer must be governed largely by circumstances.

DISCOVERIES AT TROY.—The latest excavations at Troy have led to the discovery of a burnt house, at the depth of forty-seven feet, which contained the complete skeleton of a Trojan woman with her gold ornaments. The bones of a child were also found in the original soil. Of the highest importance are the terra cottas with prehistoric symbols. No museum in the whole world, except that of Parma, which has two, possesses terra cottas of this kind. Now thousands of them have been encountered at once.

GAS WELL.—Another gas well has been struck in Salinas City. Whenever artesian wells are bored in the vicinity of the town, they find a flow of gas. The place will, no doubt, be eventually lighted from one of these wells.

A New Theory for Volcanoes and Earthquakes.

There are few things less satisfactorily accounted for than the phenomena connected with volcanoes and earthquakes. The chemical theory; the theory of a molten interior; the theory of isolated subterranean lakes of molten matter, and lastly the electrical theory, have each had their advocates, but have all failed to meet the conditions required to establish them on anything like a scientific basis. But a new theory has recently been brought forward by Mr. Robert Mallet, a scientist, who has long made the phenomena of volcanoes and earthquakes his special study, and whose publications upon these subjects have obtained much favor from the scientific world. This theory seems quite competent to explain most, if not all the facts which have hitherto appeared most perplexing. His theory has been put forth substantially as follows:—

It is recognized by physicists that our earth is gradually parting with its heat. As it cools it contracts. Now, if this process of contraction took place uniformly no subterranean action would result. But if the interior contracts more quickly than the crust, the latter must in some way or other force its way down to the retreating nucleus. Mr. Mallet shows that the hotter internal portion must contract faster than the relatively cool crust; and then he shows that the shrinkage of the crust is competent to occasion all the known phenomena of volcanic action. In the distant ages when the earth was still fashioning, the shrinkage produced the irregularities of level which we recognize in the elevation of the land and the depression of the ocean-bed. Finally, as the globe gradually lost its extremely high temperature, the continuance of the same process of shrinkage led no longer to the formation of ridge and table-lands, but to local crushing down and dislocation. This process is still going on, and Mr. Mallet not only recognizes here the origin of earthquakes and of the changes of level now in progress, but the true cause of volcanic heat.

The modern theory of heat as a form of motion here comes into play. As the solid crust closes in upon the shrinking nucleus, the work expended in crushing down and dislocating the parts of the crust is transformed into heat, by which, at the places where the process goes on with greatest energy, "the material of the rock so crushed and of that adjacent to it are heated even to fusion. The access of water to such points determines volcanic eruption."

Now, all this is not mere theorising. Mr. Mallet does not come before the scientific world with an ingenious speculation, which may or may not be confirmed by observation and experiment. He has measured and weighed the forces of which he speaks. He is able to tell precisely what proportion of the actual energy which must be developed as the earth contracts is necessary for the production of observed volcanic phenomena. He is able to show, by calculations which cannot be disputed that less than one-fourth of the heat at present annually lost by the earth is sufficient to account for the total annual volcanic action, according to the best data at present in our possession.

It is worthy of notice, that Mr. Mallet's theory of volcanic energy is completely opposed to ordinary ideas respecting earthquakes and volcanoes. We have been accustomed vaguely to regard these phenomena as due to the eruptive, outbursting power of the earth's interior; we shall now have to consider them as due to the subsidence and shrinkage of the earth's exterior. Mountains have not been upheaved, but valleys have sunk down. And in another respect the new theory tends to modify views which have been generally entertained in recent times.

Our most eminent geologists have taught that the earth's internal forces may be as active now as in the epochs when the mountain ranges were formed. But Mr. Mallet's theory tends to show that the volcanic energy of the earth is a declining force. Its chief action had already been exerted when mountains began to be formed; what remains now is but the minutest fraction of the volcanic energy of the mountain-forming era; and each year, as the earth parts with more and more of its internal heat, the sources of her subterranean energy are more and more exhausted. The thought once entertained by astronomers, that the earth might explode like a bomb, her scattered fragments producing a ring of bodies resembling the zone of asteroids, seems further than ever from probability; if ever there was any danger of such a catastrophe, the danger has long since passed away.

TO KEEP AWAY FROST.—A congress of vine-growers was recently held this autumn in the south of France, whose members, before separating, tried a most interesting experiment. This is a plan to counteract the destructive effects of frost—which, at certain critical periods, is fatal to their crops—by the creation of clouds of warm smoke, which shall hover over the ground. Iron vessels containing a preparation principally of tar, having been disposed at intervals over the vineyards, were set fire to, and produced thick clouds, which hovered over the land and spread for miles around. An important point in the plan is its cheapness.

MONSTER DERRICK.—Some months since, the Delamater Iron Works constructed, a 100-ton floating derrick, which is now in successful operation, and is the most powerful structure of its kind in the world. It was constructed for the purpose of transporting and laying under water the huge monoliths of artificial stone or beton which form the lower part of the river wall which is to surround the waterfront of the city, and has a lifting power of upwards of 100 tons. The float which carries the derrick is of rectangular form, 66 by 71 ft., and 13 ft. in depth. It is put together in the strongest manner, in order that it may stand, without twisting, the heavy loads it carries on its deck, as well as the strain caused by the great weights which are lifted by its boom. The tower, which is placed upon the float, and which carries the derrick proper, consists of a king-post supported by 12 legs or braces of Georgia pine, 63 ft. 3 in. in length, and 14 in. square, stiffened from one end to the other by struts and braces; their lower ends are bolted into a heavy, cast-iron circle, which, in its turn, is held down by numerous bolts, which pass down through the bottom of the float. At their upper extremity, these legs are brought close together and inserted into a heavy cast-iron cap, to which they are bolted. The tower thus described accordingly forms a frustum of a cone 40 ft. in diameter at the base, 62 ft. in height, and 12 ft. in diameter at the top. The cast-iron cap which surmounts it is made with a circular hole, through which the king-post passes.

IRON BUILDINGS.—The *American Manufacturer* says: "It would be difficult to trace back and fix the date of the earliest employment of iron in house structure. Certain portions of buildings, such as beams, supporting columns, and pillars, have been used exclusively for many years, both abroad and at home; but the idea of constructing a building, of which the whole external frame work should be in this material, is, we believe, an American one, originating with, and first practically accomplished by Mr. James Bogardus, of New York. To the best of our knowledge, the first building in this country or elsewhere, having front and rear of iron, was erected in the city of New York, and occupied as a business place by this gentleman about the year 1844. In spite of many adverse criticisms and prophecies of the impracticability and failure of his plan, Mr. Bogardus, shortly after the erection of his first building, entered definitely into the business of erecting iron buildings, and from the realization of his earliest attempt, succeeded shortly in establishing upon a firm, practical basis a branch of industry, which has now grown to colossal dimensions, and in really inaugurating what has since developed into a revolution in the construction of large buildings for business or other purposes, designed to be secure against fire.

COLUSA SHEEP RANCHES.—It would be worth while for those unacquainted with sheep raising to visit the "sheep county," Elk Creek, Colusa county. In this locality, situated some thirty-five miles from Princeton, the soil is "rather thin," and consequently large tracts are held by each rancher. The locality to which we refer is sparsely settled but represents an immense capital. Each settler has 640 acres upwards, and really lives under the shade of his own vine and fig tree, though there are but few vines and fig trees in that locality. We learn from J. Williams, of Elk Creek, that this locality is rapidly improving. They now have a public hall, 24 by 60 feet, which is at the service of the public. Stores, school houses, etc., have sprung up, and in place of the barren section of a few years since, a lively and prosperous neighborhood and thriving village now greet the eyes of the traveler, and this change has been wrought by the enterprising sheep ranchmen. The great want of this section is surveyors' work and settling of titles. As soon as the land shall have been surveyed properly and the settlers can tell where their lines run, they will proceed to improve their property, and cause their sheep ranches to resemble easy, comfortable homes.—*Marysville Defender*.

A MAMMOTH BEET.—We saw a nice specimen of a large sugar beet at Mason's vegetable store on Clay street. The specimen demonstrates that sugar beets can be raised in altitudes much above Sacramento and Alameda, the two places where they have sugaries. The specimen was grown on a ranch in Sierra County and it has more than twenty-five per cent. of saccharine matter in it according to an analysis of the vegetable. This is proof that sugaries can be extended—even to the highest mountains of California with a fair profit.—*Republican*.

PATENTS IN JAPAN.—Mr. Mori, the Japanese minister at Washington, has been making particular enquiries with regard to the American patent system, and expressed the hope that he may be able to prevail upon his Government to introduce a liberal patent system into Japan—one that would stimulate the skill and industry of the people. In view of the intelligent and progressive spirit shown by this people, such a policy would be of much advantage to our inventors and mechanics.

It is estimated that China will be a market for American butter and cheese to the amount of 5,000 tons annually.

FARMERS IN COUNCIL.

Farmers' Club of Sacramento.

The club met at the usual hour. Vice President Manlove in the chair. The minutes of the last meeting were read and approved.

Steam Cultivation.

Some time since, A. Campbell, a member from Yolo county, in the interest of the club wrote a number of letters to farmers in England, asking information in reference to the success of steam cultivation in that country. He lately received the following very interesting letter, which he to-day submitted for the consideration of the club:

WIKOT MANOR FARM, PEWSEY, WILTSHIRE, }
November 9, 1872.

To A. Campbell, Esq.—Sir: I will try to answer your letter respecting "steam cultivation," and to give you a few particulars from personal observation and use. Is steam thrashing a myth? If so, steam cultivation may be considered a myth. But when I tell you that there are between 500 and 600 sets of Fowler's make alone at work already in England; that the number is increasing daily; that the firm of John Fowler & Co. have in their employ more than 1,000 hands, for the sole purpose of making engines and implements for steam cultivation, it cannot be said to be an unusual thing. There can be no question but that this firm is the first and largest makers of this class of engines, etc., and that the "double engine sets" are the best and most economical, varying in power from twelve-horse to thirty-horse, according to the nature of the soil and the nature of the work to be done.

This firm have sent many sets of their tackle to Egypt and our Colonies, and I am surprised that the Americans, who are generally a far-seeing people, have not adopted this cheap and expeditious mode of husbandry, especially where the tracts of land are so suitable for its operations. I have a brother with a set of tackle on his own farm, who occasionally lets it out to his neighbors; also two nephews, each with a double set of tackle. There is a company near Oxford with six sets of double tackle let for hire, and indeed you may see many of them in every county in England, and some in Scotland.

I first commenced with the steam plow in 1858, and have continued its use ever since on light land as well as on heavy land. Last year a nephew and myself took two adjoining farms in the Pewsey Vale, when we embarked in a double set of twelve-horse engines and tackle; this was set to work in March last; we have cultivated up to the present time over 2,000 acres. It is evident that no other method could have accomplished this. The land could not have been cleaned, consequently could not have been cropped.

Expedition of work, when the land is in a proper condition, is one great benefit derived from the use of steam in the cultivation of the soil, and the land ought not to be touched when otherwise. During the rainy season the engines can be put to any purpose required, so giving employment to the hands and bring in a return for the outlay. Messrs. Fowler & Co., of Leeds, would, on application, give any information respecting prices, etc. If this information is of any use to yourself or others it is at your disposal. I am, sir, yours, very obediently.

T. H. REDMAN.

Labor.
This subject being called Mr. Rutter remarked as follows: Labor is the key note to greatness and happiness. It develops the man and elevates the mind. An elevated mind is one of God's noblest works. Expressions from such minds sometimes thrill multitudes with joy. What I mean by labor is for every person to do that he is best adapted to either mentally or physically. There is a complaint that our rising generation are not inclined to work, especially to do hard work, such as farm or mechanical. A people who look upon labor as degrading are much to be pitied. The fruits of idleness are famine, sin and shame. Such a state of things is one of the causes of the labor troubles to day.

A few weeks ago I asked a Sacramento manufacturer why the Sacramento boys were not induced to learn trades more? He said he tried them and found them a failure. He gets his boys from the country as far from the city as possible. But even the country boys are slightly affected with the same disease. Where does this trouble come from? Mostly from the parents. The parent that encourages idleness in his offspring is an enemy to them and to the community. I see more manliness in him that saws wood or scrapes the streets than the fine kid-gloved man without an occupation. He that has not the knowledge of labor, and fortunate or unfortunate, has money left him and lives entirely on that money, in one sense of the word, is an impostor or burden to mankind.

All men that are able should help to produce as well as to consume. Most everything in nature has a progressive tendency, and he that lives by the labor of his neighbor is a drone and an incubance. The question is how we shall improve the condition of the employer and employé. There is too much wild speculation. How shall we avoid it? I think we could avoid it to some extent by repealing some of the obnoxious laws. The bankrupt and homestead laws should be modified. They

induce men to go into reckless speculations, get control of large sums of money and hire men for high wages because it is a special job.

All at once they fail, the laborers are paid enough to quiet them, and in many cases the failures turn out to be really bankrupt benefits. The pretended bankrupt is freed from all his debts and has plenty of money left. Labor, business, and the morals of the people are seriously affected by the operation. Such a law makes and encourages bad men. Once out of ten times men do good, but the good is not enough to counteract the evil. How common it is to see fine homesteads built with an idea to bankruptcy and fraud. Honest men do not need such laws only when they are very unfortunate, and they should be modified to meet such cases.

Concerning farm labor it would be better if farmers would grow a variety of crops so as to keep men employed all of the time. That certainly would induce immigration from the Eastern States. There is some dissatisfaction with white laborers on account of Chinese labor. I appeal to reason whether it will pay to raise a crop of fruit and sell it for one and a quarter cents a pound and pay one and a half for cultivation, irrigation and gathering; or whether it will pay to raise grain for one cent which cost one and a quarter for plowing, sowing, harrowing, cutting, hauling, threshing, sacking and marketing.

I think the laborer should be reasonable, and not exact more than the business of his employer will allow. Labor unions should consider these matters. I would choose white labor all the time if my business would justify it. If I had employed white labor entirely the past years, my business would have failed. But the greatest grievances of the day are monopolies and rings. Every person and interest outside of those grasping enemies of mankind are crushed by their grinding process. No autocrat ever exacted so much tribute from his subjects as the people of California pay him to-day.

The laboring man that helps to save the farmers' crops at \$40 per month makes more money than the man that hires him, because he is entirely at the mercy of the monopolists. How shall we obviate the difficulty? I think when we can make lasting impressions on the minds of our rising generation that honesty is the best policy; when we can frown down corrupt rings; when an ableman can get redress from the courts of law, without money and without price; when national and State legislation has more power over the corporations of the country, and promptly and honestly use it, then, my fellow-laborers, we will have more rights. Outside of political and other rings, the price of labor will be governed by the supply and demand.

Mr. Greenlaw said: All that benefits society and advances civilization is the product of labor. When labor is properly employed it will promote the advancement of human happiness. But if misapplied may become the scourge of a people and the downfall of a nation. We read a chapter of Divine displeasure on the page of history when we seek the cause of the total destruction of those nations that were once so noted for genius and the arts and sciences. But the oppressive plebeian undermined the palladium standing of the patrician, and to-day those national monuments are but the index fingers pointing to our fate if we make such broad distinctions in classes.

We need not turn back the page of time to that period that marks the age of Egypt, Greece and Rome, but view that other lesson of recent date that gives us the apparent prosperity of our own sunny South, and read the history of our ruinous system of labor and the penalty that came and laid waste that beautiful country—the strife, the cost and the blood, all the horrors of civil war. History is filled with facts demonstrating the truth that the oppressions of the poor reach to heaven and are answered, when all the grandeur that an aristocracy may accumulate is swept away by the whirlwind set in motion by the uprising of the maddened lower classes.

But history stops not here, but opens a brighter page when philanthropy, kindness and charity sparkle like rich jewels as they are; when divine Providence, who knows no distinction between the rich and the poor, the honest laborer and the most kindly of the land, looks kindly on a people and makes them great in the land; when the chain is united that binds all classes together, when the humblest born can ascend the highest pinnacle of fame. It was this element that took the humble-born Faraday and elected him to the foremost rank of scientists. It was this element in our social and political organizations that opened the way for the late Horace Greeley to bound forward from the rocky New Hampshire farm to the profound thinker and leader of advanced civilization.

Whatever eminence a nation may enjoy is due to this element, this link that binds the lower and the higher classes in a common interest, a common aspiration. This element in our country is what we call liberty and freedom. Now, since it appears that a people, to become great, prosperous and happy, must be a unit, that whatever is in the way to hedge up the advancement of the poor is oppression, it becomes necessary that we look well to that class that gives us so many superior minds, for I believe that history will bear me out in saying that among all those who have become eminently great, the larger number were born to labor not to wealth.

We, as a nation and as a State, have provided schools and endowed colleges, that all may have

a fair educational start; but, as a people what have we done? Let the Boston fire tell you. The telegraph speaks. The fairest portions of the city is in ruins; eighty millions of property destroyed; ten thousand sewing girls thrown out of employment, and suffering with hunger. The property losers are wealthy and need no assistance. Laboring men will find enough to do, as the work of rebuilding will commence immediately.

How is it that the proprietors are so well off, while the sewing-girls are so poor as not to have one day's rations in advance of their work, or the means to procure one? Was it from too high wages the wealthy proprietor was obliged to pay that causes loud calls for charity toward the needy laborer, when his work stops and public soup must be doled out at the corners, to keep men and women from starving? And, sir, this rich State of Massachusetts, where her lower class of laborers are compelled to work every day in the year to keep want and hunger from the door, sends up the cry that labor is too high, and old South Adams sends off to China for hundreds of shoemakers, not because they were really needed, for no one will deny that South Adams had plenty of shoemakers, but the proprietor wished to procure help that could live at a less expense, and wages become a little reduced from its exorbitant demands.

And I would not doubt but that the old Bay State has already commenced to raise up hoodlum and poor white trash to do the mental work the Chinaman would be too proud to do. Let us see how this question presents itself to us. We look over the field and see the harvest is great and laborers are few—many of our resources are undeveloped. Important is it to us to know why this heaven favored land is not blessed with a thriving yeomanry and dotted over with busy manufactories. Many are the reasons to be assigned, and not among the least is the want of good reliable help. Some practical men would dispose of this question by employing such help as presents itself, and push the country ahead.

Such thoughts better become the ox, that receives nutritious food from the owner's hand, than his carcass might tickle the palate of some proud epicurean, for a country developed by the labor of an inferior race would be like Russia before the freedom of her serfs, or the South when her laborers were slaves. Now, by a hasty glance over this important matter, we infer that capital always says labor is too high; that the patronage of an inferior race in any business or position turns our own people from those branches of industry; that it is sound policy that all people inhabiting the same country should have the same and equal rights to secure tranquility.

Hence we should discourage the immigration of any people whose political equality would be detrimental to us as a people. That while it is our duty to discourage Chinese labor we should use great exertion to promote the interests of the white laborer. Not by inviting him here as a common laborer to compete with Chinese laborers, whom we are taught are our inferiors, but to come to our shores as a citizen to engage in exalted labor. Then will our house servants and our farm servants be of such a class as we should most desire.

Rutter—I don't like Greenlaw's theory—it is too narrow.

Greenlaw—My theory is simply this, that a nation can only be prosperous when that nation does its own labors. If we depend on an inferior race to do our labor, we destroy the great distinction of our government from monarchies; we destroy the link between the lower and laboring classes and those whom fortune has favored with wealth, refinement and influence; we destroy the ladder by which the poor and humble born can climb, and introduce into our country a race that cannot become citizens, and that must always remain surfs—not exactly African slavery, but something so near like it that it must eventually have the same baneful influence on society and the Government.

Were it not for the Chinese labor among us we should have plenty of white labor of a better class and even at cheaper rates. What inducement is there now for a laboring man or woman from the Eastern States or Germany, or any other Caucasian country, to come to California—where they must work by the side of a degraded race—degraded, because they are as the slaves formerly were, deprived of social and political privileges? Look at the former position of the poor whites at the South—such would and will necessarily be the condition of white labor here so long as we encourage Chinese importation and employ Chinese degraded labor.

Rutter—My views are based on broader and more liberal views of mankind. I agree with the statement that nations are of one common origin and that he who is a good citizen of any country is entitled to be a citizen of the world. We should treat the less civilized nations with kindness and consideration, that we may assist to elevate them to our own level.

I like the sentiment advanced by a distinguished statesman not long since, at a dinner in London—that when Europe and America come in counsel together, let them not plot the injury of weaker nations.

Aiken—Greenlaw's position would lead one to infer that the farmers of California employ Chinese labor from choice—which is not the fact—we employ them from necessity. Our white labor is of that unreliable class that we cannot depend on it to perform our work. They are, as a general thing, insolent, exacting and

unreliable, not of a class that we can introduce into our houses and seat at our tables with our families. I will employ no white labor that I cannot seat at my table without insulting the bitter feelings of my family and corrupt the morals of my children.

Refuse the white laborers we now have in California work, and your crops may be burned, your property destroyed or your family poisoned. I would like to employ white labor exclusively, but I cannot; were I now compelled to do so, I should have to quit farming or become bankrupt.

Campbell—There is a reason for the debased and unreliable character of the white labor of this State, and that reason is found in the manner in which that labor is almost universally treated; the better classes of laborers cannot and will not suffer it. For example, I had two young friends come here from Scotland a few years ago and then circumstances compelled them to seek employment as common farm laborers. They went into San Joaquin county and hired out on a farm, and they were required to labor more hours than was reasonable and were shown their beds in the barn with the hogs and cattle.

The result was, they both became disgusted with California and returned to Scotland, and such has been the result with many a young laboring man who has come to California. They are put to work with Chinamen, are put to sleep with the cattle, and required to carry their own beds from place to place. This is not the way to encourage a good class of immigrants, or to reform and improve the white labor of the country.

The subject was discussed at considerable length by Aiken, Manlove, Campbell and others, and finally laid over for further consideration.

Farmers' Clubs Organizing.

Secretary Hoag said he had received applications from five different counties this week for forms of constitutions for farmers' clubs and had supplied them, and that every agricultural county in the State would soon have its organization of farmers.

Annual Election.

The election of officers for the coming year will take place on Saturday, the 21st instant, and all members are requested to be present on that occasion and hear the report of the retiring officers and to elect their successors.

The club adjourned for one week.

San Joaquin Valley Agricultural Society.

Recently, the old Board of Managers of the San Joaquin Valley District Agricultural Society, held their final meeting and balanced the accounts. J. D. Doak, Esq., who has been President of the Society for five years, retires from that position, the chief management of affairs falling into new hands. Mr. Doak was a tower of strength in the organization, and the fact that the Society have successfully overcome numerous difficulties and almost insurmountable obstacles, is in a great measure due to the good management and unremitting activity of its chief officer. He has performed his duty faithfully and well, and retires leaving the affairs of the organization in a prosperous and flourishing condition. Following is the portion of the report of the Managers to the State Board of Agriculture.

To the honorable the Board of Agriculture of the State of California—Gentlemen.—In pursuance of an act of the Legislature of the State of California, entitled "An Act for the Encouragement of Agriculture and other industries," approved March 21, 1872, the undersigned, Managers of the San Joaquin Valley District Agricultural Society respectfully submit the following report of the transactions of the Society for the year 1872 and other matters provided for in said Act.

The transactions of the society consist only of frequent meetings of the Board for the purpose of transacting ordinary business, the principal of which have been in reference to the care and improvement of the Fair grounds and track, and the arrangement and circulation of a premium list for the Fair, and making suitable provisions for holding the annual Fair for 1872, the detailed proceedings of which according to the records of the Society, would be too voluminous for this report.

Total receipts.....	\$7,282 55
Total amount of expenditure.....	\$7,236 77
Balance in treasury.....	\$45 78

INDEBTEDNESS.	
Bills audited and unpaid.....	\$68 00
Premiums awarded.....	311 25
State and county taxes.....	77 75
Total.....	\$457 05

The result of the fair, considering in a financial point of view, has much disappointed the expectation of the Board. They felt confident that the great success which had been achieved by the farmers of the valley in this year of plenty, would contribute in a great degree to the success of the fair; but this very fact, on which they relied as a source of encouragement, proved to be a drawback. Our fair was held at a time when every farmer in our broad and fertile valley was busily engaged in securing the fruits of his labors, so that no one could absent himself from his duties without great inconvenience and prejudice to his interests. Besides this many of the religious denominations in the city selected the time of the fair for hold-

ing fairs in the interest of their respective churches, which necessarily withdrew a great number of our people from attendance on the fair of the Society.

The partial failure this year does not by any means discourage the Managers from continuing their efforts for the future success and prosperity of the Society. All they ask is an earnest co-operation and sympathy on the part of their fellow citizens, and they feel assured of success.

The "new industries inaugurated, and new products produced" in this district, are required to be embraced in this report. Among the new industries the cultivation and preparation of chicory for market, seems to be one of great importance. Messrs. Raab & Meine, both of them natives of Germany, where this is a leading branch of industry in certain districts, are the pioneers of this enterprise, and are provided with all the necessary apparatus for drying, grinding and packing the article for shipment. When in full operation they can turn out about two tons per day.

They find a ready market for all they can produce. The different establishments in San Francisco, engaged in grinding and preparing coffee and spices, generally give it a decided preference over the imported article, which is frequently found to be adulterated by the admixture of beets and other substances, while the article produced by them is perfectly pure and fresh. This branch of industry, so happily inaugurated by Messrs Raab & Meine, is certainly destined to become a leading interest and to contribute largely to the wealth and resources of this district.

The cultivation of cotton has of late attracted the attention of many of the settlers in the southern counties embraced in this district, and the results have been so satisfactory that it may be considered henceforth that cotton culture is to be classed among the leading industries, and to be regarded as another important item in the catalogue of the resources of this glorious State.

Another branch of industry, which is beginning to attract attention is the culture of hops. Mr. Joseph Putnam, whose farm is on the Mokelumne river, exhibited some fine specimens at the late fair. He represents that the bottomlands on the Mokelumne, Calaveras, and other rivers, as admirably adapted to their growth, and that they yield a better profit to him than any other crop he could cultivate on the same land.

Among other new industries, Messrs. R. B. Lane & Bro. have established a paper mill, with all the modern appliances and improvements. It will be operated by the same machinery employed in the flouring mill immediately adjoining. They propose to manufacture every description of paper, from the common wrapping to the finest note. The enterprise will doubtless prove a success, if worth and capacity on the part of the proprietors are any guarantee of success.

The managers believe that the foregoing embraces all matters required by the law to be included in this report, and respectfully submit the same to your honorable Board.

(Signed) J. K. DOAK, President.
H. T. COMPTON, Sec'y.

Stockton, November 18, 1872.

—Independent.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

Meeting of Dec. 7th, President Casey presiding.

The following preamble and resolution was read and adopted:

WHEREAS, All of the property in the incorporated towns of this county is exempt from road tax, and

WHEREAS, We believe such exemption unjust and illegal, and

WHEREAS, It is known that good legal ability can be obtained for a contingent fee to contest were the matter in the courts, therefore,

Resolved, That a special committee of three be appointed to investigate the subject at an early day.

Messrs. Holloway, Chipman and Burgland were appointed a committee to consider the subject.

Mr. Hobson, from the committee appointed to confer with the managers of the New City Market, reported that the managers offer to give the Club a room for its meetings and two stalls in which to sell their produce free of rent for one year. On motion, Mr. Spencer was added to the committee, and they were given one week further time to report.

Mr. Erkson for the Committee on the Sale of Railroad Stock, made a report giving a full history of the transaction, and expressing the opinion that the action of the County Supervisors was illegal, but at present recommended no action; may recommend action at no distant day. Report accepted and placed on file.

Under the head of asking questions, Mr. Holloway wanted to know how a plant takes its support from the atmosphere? Through its roots or through its leaves? Mr. Burgland said it was principally through respiratory organs in its leaves. Mr. Herring said the salts and moisture were principally taken in through the roots—but the principal materials are taken in through the leaves. Mr. Cadwell said plants must breathe as well as

man. Mr. Dubois thinks we make ourselves ridiculous by asking such questions.

Mr. Herring thought it might as well be called ridiculous to ask about feeding cattle. Mr. Holloway said he inquired for information. Mr. Hobson thought it an important question and that our children should be taught chemistry and botany to give them light on such subjects.

Mr. O. Cottle thought it a scientific subject beyond our reach, and it was about as important to us as which is the mother of the chicken "the hen that lays the egg or the one that hatches it."

W. W. Kennedy said, as a further answer to the question, he would state that a continual circulation of fluids goes on in plants as in animals, and that by a vital action of the plant the fluids while in the leaves inhale or become impregnated with the materials necessary to build up the plant, which by the circulation are carried to, and deposited in their proper places.

Mr. Neuman, by invitation extended at previous meeting, addressed the Club. He first spoke of the State Union. He said it was bound to be a failure with such a man as I. N. Hoag at its head. He said Mr. Hoag had discouraged silk culture, because he failed to get his hands in the State Treasury*. He thought the only way for successful co-operation was by means of the farmers at the different places clubbing together and starting stores of their own. He said wheat was not going to answer as our staple. It had failed—our gold fields have failed—all things have failed, even the diamond business has proved a humbug, but silk has not failed, and will be our great staple in time to come. Cotton will also be another staple which will prove profitable. He intends to spend the rest of his life in the silk business.

State Farmers' Union.

The Club next took up the State Farmers' Union, the constitution of which was read.

Mr. Holloway moved that we discuss the constitution article by article.

Mr. Cottle thought that would take too much time.

Mr. Ware moved that we suspend the rules in regard to adjourning at three o'clock; carried.

Mr. Herring said the Club would have to excuse him then, as he was not going to lose his dinner, that being his dinner hour.

Mr. York moved that we adopt the subject matter as a whole.

The President urged the members to proceed with the discussion, but no one seemed willing to begin.

W. W. Kennedy moved the previous question. Mr. Cottle said he would second the motion. The motion was carried.

The President then put the question: "Shall we join the State Farmers' Union?" which was carried by a majority of over two to one.

Mr. Holloway said that now we may consider according to Mr. Ware's calculations, that the next State Convention will cost this Club the sum of \$325.

Mr. Ware replied that he never said so, and that if this Club would be economical, they need not send but one delegate.

Mr. Hobson hoped that the matter of moving into the new market would be settled by next Saturday, as we were now in debt, and he did not know how we were going to raise money to pay our rent, but he thinks that if we move to the market building, we may make out to live another year.

The Club adjourned.

*A wild assertion, harmless, however, with those personally acquainted with Mr. Neuman—or Mr. Hoag either.

WHERE TO ADVERTISE.—A weekly family paper has great advantages for advertisers over a daily. It is generally on the table ready to be perused by one and another for a week, and often several weeks at a time. Each copy is also read by a greater number of persons, often being loaned from family to family. Besides, the number of advertisements being limited and generally of an interesting character, the chances of each one being read are much greater than in a daily. A weekly also reaches all classes in all sections, who can scarcely be reached in any other way, as they do not take any other papers. These facts will be evident to any one who reflects upon the subject.

The PACIFIC RURAL PRESS as a weekly has a larger circulation than any other paper on the Pacific Coast; it goes into every State and Territory west of the Rocky Mountains; to Australia, China, Japan, and to the Sandwich and Somoa or Navigators' Islands, and has a large list of subscribers in the Atlantic States and Europe; it is therefore the medium, for advertisers to make known their business to the world.

"POTTER'S COMPLETE BIBLE ENCYCLOPEDIA." A Universal Dictionary of Biblical, Ecclesiastical and Historical Information, from the earliest times to the present day is now in press by John E. Potter & Co., Philadelphia. It has been carefully edited by Rev. William Blackwood, L.D., L.D.D., author of "Blackwood's Comprehensive Aids to the Study of the Holy Bible," etc., etc., with valuable contributions by other eminent divines. Comprised in about 2,000 brevier pages, quarto, with nearly 3,000 illustrative engravings.

DIVINE discontent must pursue all human lives.

The Culture of Jute.

While the balance of the State is going wild about growing wheat, and before the people of this county get too much occupied with cotton culture, we would like to call the attention of our farmers to the development of a new agricultural resource—the raising of jute. The immense demand for grain and wool sacks will ever insure a ready market for this product. Mr. Brereton, a gentleman well versed in the growing of the jute, having resided in India, says that the climate and soil of this valley is peculiarly adapted to its growth. Without further comment, we submit the following facts and figures taken from the United States Agricultural Report for 1871. It gives all needed information regarding the plant:

Hon. E. H. Derby of Boston, who has long been interested in this subject sends to the Department the following communication:

Ten years since, I was led to appreciate the value of this plant, and to write an article in the *Atlantic Magazine*, in which I pointed out its merits. Soon after this I sent an order to Calcutta for a supply of seed, and when it arrived I planted a portion of it in my garden on the sea-coast, where it grew, but it did not mature. A portion of the seed, planted further from the sea, germinated, and the plants rose to the height of two or three feet, but the season proved too short for them. The residue of the seed were sent to the Department of Agriculture for distribution in the more Southern States; but being then in its second year, it either failed to germinate, or did not reach its destination.

While acting at Washington as a commissioner of the Government upon our relations with Canada, I made it my business to visit the Department of Agriculture and inquire after the jute-seed. The result of my visit was a second and more successful order, transmitted by the Department to India, for a new supply of seed in 1869, and followed by another order sent to France. I have now to congratulate you upon the success of the Department in obtaining the seed, upon its distribution at the South, and upon the production of jute in our Southern States, where it is now acclimated.

Letters published by the Department, and others addressed to me, give the gratifying information that the jute attained its full height of ten to twelve feet, and ripened its seed last year in Texas and Louisiana. The planters, however, were still at a loss as to the best mode of planting, the season for gathering, and the steps to be taken to separate the fiber from the stem. To obtain this information, I addressed a letter to the agent of the Tuder Ice Company, at Calcutta, Mr. R. Macallister, and received a very full reply, as follows:

Mode of Culture.

"Seeds are sown in the months of March and April, broadcast, on plowed land, preference being given to moist high ground, situated if possible on the bank of a river, and somewhat sandy. As a general rule manure is not used, but animal dung has been employed to advantage; nor is it necessary to irrigate the ground, as no more water is required than is sufficient to keep the roots moist, for which the ordinary showers of this country generally suffice. It is allowed to grow three or four months, and is cut in the months of June, July and August, when it has attained the height of seven and a half to twelve feet, the size depending, of course, on the fertility of the soil and the season.

"The time chosen for cutting is just after the flowers have turned to seed, and before the seeds begin to ripen; for it is found when cut thus early to be the better color and to have less root. When the seeds are allowed to ripen it appears that the fiber becomes stiff and hard, and the interior portion of the stem changes color, becomes blackish or reddish.

"When cut, the stalks are tied in bundles and thrown into tanks of dirty water and allowed to remain there five to eight days to rot, (the dirtier the water the faster, I believe, the rotting process takes place,) at the expiration of which time they are taken out and the fiber falls from the stick. The fiber is then hung up to dry, and when dry is assorted, packed in round bundles called drums, and sent off.

"The finer qualities of jute sometimes attain a height of fifteen feet. The smaller the plant the lower the quality. The seeds are used for cultivation only. They contain very little oil, and no one ever thought it worthwhile to crush them, neither have they ever been tried for feeding poultry or cattle. Small plants yield more seeds than the larger ones, and supposing all the plants on an acre to be allowed to ripen, the yield of seeds would be about 120 pounds, as I am informed."

Jute in Other Countries.

The production of cotton in India was greatly stimulated by the high prices incident to our late war; but, since its conclusion, it has been checked by a decline of prices; Jute, on the contrary, though it also received a stimulus from the war, still continues to increase. It is the cheapest fiber produced, and on that account has been and still is extensively used as a substitute for cotton. In India the field which in ordinary years returns but 69 pounds of cotton to the acre, yields 552 pounds of jute and is more easily cultivated when in jute than in cotton. Jute-seed is sown broadcast in the spring, and when the plant has attained its full height, but before the seed ripens, it is ready laid for a week in some pool or river when the outer bark peels off. The fiber is then shaken from the stem, and as soon as it has been dried by the sun it is ready for sale or use. The

stems, like willow branches, are used for basket-work.

The cotton fabrics from the looms of England have broken down the cotton manufacture, once carried to great perfection in India, but the manufacture of jute is replacing it. Its manufacture requires little capital, skill or machinery. "The Indian widow" still sits upon the ash-heap, and weaves the sack-cloth largely used in America to envelop both grain and cotton. Although the export of cotton from India continues nearly stationary, the export of jute from that country shows an increase from about 300,000,000 pounds in 1870, to 450,000,000 in 1871, thus showing the remarkable gain of 50 per cent in a single year. Should such gain continue for another year, the export of jute in 1872 will exceed in weight the export of cotton. This conclusion is sustained by the following tables. The British one is taken from the *London Economist* of Nov. 11, 1871, and the American from the last annual report of the Bureau of Statistics for the fiscal year ending June 30, 1871.

Importation of jute from the East Indies into Great Britain during the first ten months of 1871 and 1870: In first ten months of 1871, tons 134,228; value £3,296,384. In the first ten months of 1870, tons 98,309; value £1,912,492. Imports of jute into the United States in fiscal years ending June 30, 1871, and June 30, 1870: In 1871, jute raw, tons 26,450. In 1870, jute raw, tons 19,049. Jute imported from India in gunny-cloth and bags into the United States, in 1871, 30,124,456 pounds; in 1870, 8,781,753. The whole value of jute, both raw and manufactured, imported from India into the United States, was, in 1871, \$5,362,988; in 1870, \$3,155,271. We may safely infer from these tables that the exportations of jute from India to the United States during the past fiscal year increased more than 70 per cent, both in volume and value, and that the entire export from India to Europe and America now exceeds \$25,000,000.

Its Varied Uses.

Jute is applied to a variety of uses. Much of it is used in carpets and other fabrics as a substitute for wool, cotton, flax, and hair. When it is landed in the United States, jute and the fabrics composed of it are increased in cost by heavy charges for freight, insurance, duties, profits and interest; and the bale-cloth is more than doubled in cost by these and other charges before it reaches the cotton press. Most of these expenditures may be avoided by the planter, if he will devote to jute a part of his cotton-fields. By doing so he will accomplish several important objects: First—Its culture will introduce a diversity of pursuits. There is a strong tendency to over-production in cotton. Three millions and a half bales of cotton yield larger returns than four millions; and if he diverts from the cultivation of cotton to jute a force sufficient to produce half a million bales, the crop of jute will be nearly a clear acquisition, and will save a large outlay for freight, bale-cloth, and compression of cotton. Second—Cultivation of jute will save several millions sent out of cotton States every year to purchase gunny-cloth, and will furnish a surplus for home consumption and exportation to Europe. Third—If in India jute can be produced for one-eighth of the cost of cotton, while it sells for one-fourth of the price of cotton, it must yield large profits, and can be raised with still larger profits at the South where it escapes freights, duties, and other charges, and commands a higher price. It has been in very quick demand, and now sells in Boston from six to seven cents per pound. Fourth—If jute is fast gaining upon cotton and superseding it to some extent, the Southern States will surely be in the rear if they do not keep pace with India in this branch of agriculture. Fifth—Apart from the preceding considerations, jute would employ the female labor of the South, which retires from the cotton-field under the system of free labor. It would give employment also to the field-hands when driven from the fields by the inclemency of the season.

The simple machinery used in Kentucky for spinning and weaving hemp might be applied to jute, and be in many cases set in motion by the power now used for ginning and compressing cotton. In the present posture of affairs it is the policy of the South to save all the jute-seed raised the present year, and to send a large part of it to the Department of Agriculture; while it should pay particular attention to the production and manufacture of jute in the coming season. The following is a statement of the imports of jute, and similar fibers, in the fiscal year ending June 30, 1871:

Raw, 26,450 tons, valued at	\$2,131,056
Manufactures of 228,873 sq. yards valued at ..	28,556
Gunny cloth, and other bagging, 30,124,466 pounds valued at	1,468,302
Other manufactures, valued at	1,724,474

Total

Here is an importation amounting to \$5,362,988, most of which might be obviated, and a new agricultural industry created which might eventually become an important ally of, and complement to the cotton interest.

The quantity of coarse fibers required in this country become larger annually. A large amount of the fiber, of the heavy flax of the West, which is grown almost exclusively for the seed, has of late years been utilized as a substitute for jute in cotton bagging and other cheap material for bags. Should jute culture become a naturalized industry a wonderful enlargement of its present list of uses would occur, and a great development of its production would be assured. The Department of Agriculture will foster this enterprise by every available means.

THE DAIRY.

Best Feed for Milch Cows.

The following is from an Essay read before the Vermont Dairymen's Association, by Alexander Hyde, of Massachusetts:

But the circumstances that most affects the quality and quantity of the milk is the food. The luxuriant and succulent grass of June produces a great flow of milk, but the per cent. of water in it is much above the average of 87. Take a cow from a green pasture and feed her on dry hay, and the quantity of milk will be greatly diminished, while the quality may be improved. Everything a cow eats affects her milk directly. We have great faith in cabbages as producing an abundance of rich milk, but unfortunately, the lady who presides over our household has keen senses, and detects in the milk the least flavor of cabbage or turnip. We have sometimes evaded detection by feeding cabbage leaves moderately at first and immediately after milking, but the increased quantity and quality of the milk, if not the taste, are apt to call out the sly question, "What are you feeding your cows on now?"

Sweet corn fodder, we are confident, gives a richer milk than common corn. Indian meal all farmers agree, gives a rich milk, while buckwheat increases the per cent. of water more rapidly than it does the more valuable properties. Clover, cut green, greatly improves the quality of milk. Being a leguminous plant, it should add to its casein rather than to its butter. Pea vines, also leguminous, are extensively used at the South, where the grasses do not flourish, as food for cows, and are said to produce excellent milk. There can be no question but that grain cut before it goes to seed will produce more and better milk than after all its virtues have been spent in their legitimate purpose of producing seed after its kind. If the hay has been made from grass as dry and woody as oat straw, it may be benefited by being cut and moistened, but can never be restored to its original nutrition any more than the daughters of Tobias could rejuvenate their aged father by cutting him up and boiling him.

All the roots add to the flow of milk and improve its quality. They furnish both food and drink, being largely composed of water. The feeding of roots do not save so much hay as some suppose. They keep the animal in good health and appetite, and are valuable in their sanitary and manurial effects rather than as an economizer of hay. The increase of milk and manure is very manifest from the feeding of roots. Potatoes make the best of milk, but at present prices we can hardly afford to feed those of a merchantable size and quality. The small potatoes can be put to no better use than food for young stock and milch cows. They furnish much saline matter, thus adding to the specific gravity of milk and to the material for building up the frame work of the young animal. As an observing dairy woman once said to us, "Potatoes give body to milk."

It is cruel to tax cows in winter for milk and give them nothing but dry hay from which to manufacture it. If cut before maturity the hay contains all the elements of milk, but it is dry fodder, and if it constitutes the only food of the cow, day after day, for six months, there is a sameness about it which is not provocative of a good appetite. As men crave and need a variety of food, so do cows. A few beets or turnips, or carrots should be fed to them each day, and the sleek coats of the animals and the improved quantity and quality of their milk will indicate their appreciation of these roots. One of the best and most economical kinds of food for cows, both in summer and winter, is the bran of wheat and rye. The organic part of grain resides chiefly in the husk or bran, as may be seen by burning similar quantities of fine flour and bran. The ash of the latter, will, on the average, be six times that of the former; the ash of dry, fine flour being about one per cent., and that of bran six per cent. of the weight of the whole. Bran, therefore, though a dry-looking sort of fodder, is rich in these elements which form the frame work of animals, and Dr. Graham was doubtless correct when he advocated making bread from unbolted flour. Many dairymen practice putting a couple of quarts of wheat bran into six or eight quarts of whey, and feeding it to their cows night and morning, thereby improving their milk, their cows and their pastures. The improvement of the latter is specially manifest, as the bran restores to them the phosphorus, sulphur, potash, lime, soda, etc., of which our old pastures have become exhausted, these essential constituents of good soil having been carried off in the bones of the animals and the grain and dairy products sold.

Gilt Edged Butter.

The Iowa Homestead gives an account of the way in which a lady in Iowa makes "gilt edged" butter. It says:

Her husband keeps but few cows, but always in good order, so that their food may not only yield them support but make rich milk. The milking is done rapidly and quietly, each milker having a bucket and stool, no tin cups and coffee boilers; then the milk is strained immediately into well-cleansed, sweet crocks, made so by thorough scalding and rinsing with lime water. The milk is kept in a cool, clean, dry

cellar in summer; a warm room in winter. The skimming is done in warm weather as soon as the milk becomes sour, not curdled, — in the winter never allowed to stand more than twenty-four hours, — the cream crock covered with a fine sieve, and a cloth lightly thrown over, never covered closely. The churning is done every day, slowly and carefully, that the butter may "come" in minute solid grains; still more carefully gathered and washed until free from every trace of butter-milk, — salted by weight, one ounce of salt to a pound of butter. After standing five or six hours it is again worked carefully, pressing out the moisture until nearly dry. If it be made in rolls, it is done and stamped with a peculiar brand, each roll wrapped in a clean cloth, wet with weak brine. If to be packed for present use, it is kept cool and solid, and taken to town before the heat of day spoils its fine appearance. If packed for winter, when the jars are filled to within one inch of the top, a piece of muslin, cut to fit the jar, is placed next the butter, then one inch of fine salt, and the whole secured by another cloth tied over all, and kept in a cool, dry cellar. All this is no more trouble than the first method and pays infinitely better. We have seen farmers' wives, whose intelligence would lead us to hope for at least good butter, who yet are very careless in its manufacture. We know that dairying is not profitable in some localities, for the reason that so much poor butter comes to market, there being no discrimination by the grocer man, that it keeps down the price a good article ought to bring. One-half the butter that comes to town is not worth one-half the money paid for it; and a great deal of it never finds its way to the table as butter, but is manufactured into articles that require grease. The making of good butter is a consummate art, and most earnestly do we wish that our farmers' wives and daughters would perfect themselves therein. No wonder that the town lady expressed her astonishment when informed that butter could be kept sweet twenty-four hours.

Form of Constitution for Farmers' Clubs.

ARTICLE I.

SECTION 1. This Association shall be called the Farmers' Club of _____.

SEC. 2. The objects of this Association shall be the promotion and protection of the individual and collective interests of its members, and of the agricultural interests of the State generally; the collection and dissemination of useful information touching the art and science of agriculture and the promotion of closer social relations among the members and their families.

SEC. 3. Any person interested in the objects of this Association may, upon being proposed, become a member of this Club by signing the Constitution and paying to the Secretary a membership fee of \$____, and annual dues in the sum of \$____, payable _____, for the use of the Club.

ARTICLE II.

SECTION 1. The officers of this Club shall consist of a President, two Vice-Presidents, a Secretary and Treasurer, who shall constitute a Board of Directors, and who shall have the general management of the business of the Club. The officers shall be elected annually by ballot, on the third Saturday in December, and shall hold their offices until their successors are elected and installed.

SEC. 2. At the annual meeting for the election of officers, the Board of Directors shall make a report of the transactions of the Club, including the receipts and expenditures for the year.

SEC. 3.—The President shall preside at all meetings of the Club, when present, except when he may wish to take part in the discussion. In the absence of the President, or when he takes part in the discussion, one of the Vice Presidents shall perform the duties of the President. In the absence of President and Vice Presidents, any other member may be elected President, *pro tempore*.

SEC. 4. The Secretary shall keep a record of the proceedings of the Club, in a book for that purpose; shall collect and pay to the Treasurer all moneys due the Club, and shall keep a true account thereof, and shall perform such other duties as are usually performed by Secretaries of similar Associations.

SEC. 5. The Treasurer shall receive and receipt for all moneys of the Club paid him by the Secretary, and shall pay the same out only on the order of the Board of Directors, signed by the Secretary.

ARTICLE III.

SECTION 1. The business of each meeting of the Club shall be transacted in the following order, unless changed by a vote of the meeting:

- 1st—Calling to order.
- 2d—Reading and approval of minutes.
- 3d—Report of Standing Committees.
- 4th—Report of Special Committees.
- 5th—Discussion of the Order of the Day.
- 6th—New business.
- 7th—Adjournment.

SEC. 2. This Constitution may be altered or amended at any regular meeting by a vote of two-thirds of the members present, notice of the intended amendment having been given and spread upon the minutes of the preceding meeting.

[Printed slips containing the above can be had on application to this office, or of I. N. Hoag, Sacramento.]

The chestnut came from Italy.

The Stanton Ruby (?)

Through the kindness of Mr. Tucker we are enabled to present a natural sized cut of the famous \$250,000 ruby(?) which Mr. Stanton brought from the diamond fields of Colorado, a short time since. Its shape is irregular, and its color amethystic blood red. After the exposé of the diamond fraud, people who had firmly believed in the value of this gem, began to have some doubts concerning it. It



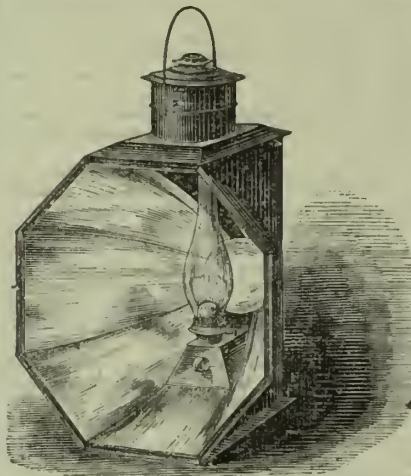
was accordingly sent to be tested so as to settle the question. Mr. Stanton has in his possession a number of other stones from the same locality.

Mr. Henry G. Hawks pronounced it a "spinelle," being without doubt of considerable intrinsic value, but not possessing the specific gravity or hardness of a ruby.

J. S. Phillips, M. E., expresses the opinion that these stones are Pyrope and Almandine, otherwise known as Ancient Hyacinths and Carbuncles, or the Precious Bohemian Garnet, Garnet Ruby, etc., which are "much esteemed as precious stones."

Boesch's Reflecting Lantern.

By the economy of nature our earth is covered with darkness one-half of the time, and were it not for the benefits which we derive from artificial lights, a large portion of our existence would be passed in a most unprofitable and unpleasant manner. But thanks to the scientific and inventive world which have



A NEW REFLECTING LIGHT.

so thoroughly overcome the darkness as to permit the light, in a great measure, to be turned out day.

Although the facilities for lighting our dwellings, our streets and our ordinary places of business and pleasure are and have been abundant and cheap for years, yet we have never had a light such as would be suitable for lighting up a large area with a single burner without entailing a large expense for its maintenance. This want was particularly felt in our hydraulic mines where it is necessary to light up large and high banks during the night to enable the miner to direct the hydraulic stream effectively against it. Mr. Emil Boesch, of this city, knowing that such a light was required has invented and secured letters patent through the MINING AND SCIENTIFIC PRESS Patent Agency for the improvement represented by the accompanying cut.

The chief advantages of this lamp are first the employment of an ordinary coal oil or other burner for giving the light; secondly, in providing an abundant ventilation at the bottom, top and rear so as to properly feed the flame with air and prevent the interior of the lamp from becoming so hot as to break the glass front; thirdly, in the employment of a focal reflector which can be adjusted up or down or to either side according to the direction in which it is desired to concentrate the light, and fourthly, in constructing the entire lamp in a convenient portable form so that it can be moved from place to place readily when required.

This lamp is mechanically constructed and is admirably adapted for lighting up depots, mills, halls, wharves and other open spaces. The inventor, Mr. Emil Boesch, is a practical lamp manufacturer, and is proprietor of the Pacific Lamp Factory on the corner of Pacific and

Kearny streets, in this city. This, we believe, is the only lamp factory on this Coast. Mr. Boesch has procured a number of patents for improvements on lamps, lanterns and reflectors within the past few years, through our Patent Agency, and has met with merited success as a pioneer in his business. The lamp represented by the engraving is meeting with a fair sale, and is giving much satisfaction. For further particulars address Emil Boesch, N. W. corner Kearny and Pacific streets, this city.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention:

SEWING MACHINE.—A. D. Hopkins, San Francisco. In this machine the needle bar is operated by a long lever which is pivoted at one end and has the other end connected with the needle bar. A link from the lever at some point between its points of attachment, connects it with one end of a bar, the other end being attached to a crank. This bar slides through an oscillating block when the crank is turned, and through the link, operates the lever and gives it the peculiar motion necessary to form the loop and maintain it so that the shuttle can pass through to make the stitch. In a good sewing machine the old principle (the cam movement) must be maintained, of causing the needle bar to remain stationary during a portion of each stroke to give time for the shuttle to pass through the loop formed by the needle so as not to draw undue slack while passing through the loop which has to be taken up by springs. This principle has hitherto been obtained by means of irregular grooves formed on the disk or periphery of a wheel or curved slots. All such machines must have great wear and tear from the great friction, and at the same time cause considerable noise. This machine is the only one which produces this movement by the aid of levers, without cams, curved slots, or cog wheels. This principle can be applied to a machine of any size from the ordinary size up to one with an arm six or eight feet long, without increasing the bulk of the machine. This one is comparatively noiseless, and does not seem liable to get out of order easily.

SUBMARINE DREDGER OR EXCAVATOR.—A. J. Gove, San Francisco. This invention relates to that class of submarine dredging machines in which a bucket is used, made in two sections and united by a joint at the upper corner of their meeting edges so as to open and shut. These are more commonly known as the clam-shell dredging machine. The improvement of Mr. Gove consists of a novel arrangement for suspending and operating these jointed buckets, by which they can be more easily controlled and by which they are rendered more effective than by the means at present used.

IMPROVEMENT IN VENEER CUTTING MACHINES.—E. S. Gilmore, San Francisco. This is an improvement in machines for cutting or slicing off thin veneers or strips from a previously prepared block of wood, and it consists principally of a device for automatically feeding said block to the cutting knife without requiring the attention of the operator, and capable of doing a greater amount of work than is usual in a more perfect manner and with less trouble.

TELEGRAPHIC SIGNAL KEY.—Arthur B. Shearer, Davisville, Yolo Co. Cal. This is a telegraphic signal key of novel construction, which will be more direct in its action, and its operation more positive than the usual lever key, which is mounted upon a horizontal axis. The especial novelty connected with this invention is its vertical arrangement by which the action and reaction of the key is freely produced without danger of an imperfect response to the manipulation of the operator. The device is simple and not liable to get out of order, and has all the necessary appointments for convenience in operating.

MEDICAL COMPOUND.—D. Mayon and E. Champlain, Cloverdale, Sonoma Co., Cal. These gentlemen claim to have discovered a cure for dyspepsia, which is called Mayon, Champlain's Ligneous Extract, and as its name implies is extracted from wood by a peculiar process. These gentlemen have opened an office on California street, between Montgomery and Kearny, in this city, where dyspeptic persons can test the merits of the invention.

LOCKING DEVICE FOR WINDOWS.—Henry Polley and A. Rosenfield, San Francisco. This is an improved locking device to be employed chiefly upon windows, but which is also applicable to any sliding frames. It consists mainly in the employment of a plate which is moved from the side of the window casing against the edges of the sashes, so as to bind either one or both firmly against the opposite casing. A cam or suitable lever is employed to operate the clamping plate.

One hundred and twenty-one patents have been granted on windmills in the United States since 1854.

USEFUL INFORMATION.

Power of Comprehension.

It is said of Thoreau, that he could take up any given number of lead pencils without counting. A celebrated trapper once assured us that he could tell how many balls he had in his bullet pouch by placing his hand on it, and without stopping to count them, and added: "I can tell the number of bullets instantly, without stopping as you pronounce a word without spelling it." Southey was accustomed to take in the substance of a book in turning the leaves over continuously, glancing down the pages. Houdin, the magician, trained himself to quickness of perception, when a boy, by running past a show window at full speed, and then trying to tell what was in it. We once saw a man on a canal boat who was amusing himself by going from passenger to passenger and telling almost every one where he had seen him before, on such a train, in such a hotel, in such a street, giving date and place to people with whom he had never exchanged a word. This training of the faculties in particular directions is carried to a marvelous extreme by backwoodsmen, trappers, and men who guess the weight of animals. Perhaps the most remarkable instance are the markers who leap from log to log at the mouth of a boom, standing on a log and translating instantly an old mark into a new one, remembering what equivalent to give for each of a hundred marks, and chopping it upon the log in the time that it floats its length. It is said that Thoreau knew the relative order of flowering of all the plants in the Concord woods, and knew the note of every bird, and a thousand out-of-the-way things besides.—*Hearth and Home.*

THE USEFUL AND BEAUTIFUL.—There are really two ways to do a thing well. The one studies utility and economy without any regard to how it will look. The other includes both, and in addition, the doer is often influenced by taste, giving the preference ever to that way of doing a thing which shall most directly promote the beautiful in union with the useful. Taste displays itself in the selection of the site for building, the plan and style of architecture, planting trees, making fences, laying out grounds, the color of buildings, etc. Some in these display taste; others seem to show an utter want of, or disregard of it, everything seeming to be done with reference only to the short-sighted utility. Attention to matters of the kind mentioned, would soon produce a favorable change in all our rural regions. Much has indeed been already done, toward the bringing about of this desirable change, but much more can be done. What we would say then is—let every owner study to make his home beautiful and attractive.

CURIOUS AND USEFUL CROW.—J. Snyder of Virginia, owns a crow which serves as a substitute for dogs, cats and all other domestic sentinels. He destroys every frog about the well; allows a mouse no chance for his life; drives away hawks from the poultry; and bids fair to act as the best squirrel dog in the country. He readily spies the squirrel, either upon the fence or on the trees, and with a natural antipathy to the squirrel tribe, his shrill, keen note is readily detected by his owner, accompanied by rapid darts up and down, and the owner is thus led to the game. The most remarkable feature about the crow is, that he invariably keeps five or six day's rations ahead of time, well concealed.

TO GET RID OF FLEAS.—Mr. Ely said at a late meeting of the New York Farmers' Club that there are two or three substances that are obnoxious to the flea—he does not like the smell of them, or they remind him of something he does not like to think about—these are carbolic acid and sulphur. If you want a barn thoroughly purged of weevil, or lice, or fleas, the best way is to fumigate it with sulphur. But if you whitewash all around the stables and posts of the yard with a whitewash made by adding carbolic acid to the lime, it will drive most of these pests away. Washing an animal thus infested with carbolic soap-suds will give relief.

CHARCOAL AS A PURIFIER.—The *Country Gentleman* says: All kinds of utensils can be purified from disagreeable odors by rinsing them out with charcoal dust wet into a soft paste. Putrid water is immediately deprived of its bad smell by its use. When meat flesh, etc., are liable to become spoiled from long keeping, charcoal dust will keep them sweet; and if there is a single taint to meat, it can be taken out by putting three or four pieces of it as large as an egg into the water in which it is boiled. This will effectually purify what seems too far gone to use.

A USEFUL HINT.—A tin tube made like a syphon, driven into the vent of a barrel of wine or cider, and the other end inserted into a vial of water, will prevent the air from entering the barrel, while the gas escapes through the water. Make the barrel otherwise tight. When the cider or wine in the barrel is done working, the water in the bottle will cease bubbling. It requires no filling up, as there is no loss. The tube can be made by any tin-plate worker, and when once made can always be kept for future use.

What is "Black Heart" Redwood?

In the first place no such kind of wood exists. It is a difference based on the slightest of distinctions. Ordinary redwood and "black heart" will be found to come from the same tree. It is a small part of the lower extremity of the tree, which, on account of its near approach to the roots, is more than usually tough and compact, to which is given this name. In some trees it is not even to be found, owing to the local peculiar formation, and in those where it is the amount is very small. It is a task of great labor to get even enough to lay even a simple block, as was the case with that put down in front of the City Hall, and to speak of repairing the large amount of damage which now needs to be attended to in many streets of our city with this scarcely obtainable species of wood, is something of which it is ridiculous to consider. But even with "black heart" redwood, E. T. Crane, writing from San Lorenzo, has said that from his personal experience he had found planks of the best "black heart," after eighteen months, "were so decayed that you could stick a spade half way through them," and none were found but what had commenced to decay. As to the amount of water, which is a primary means of decay, that it will evaporate normally, and afterwards take up, twenty-nine and a half per cent. has been found to be an ordinary percentage.

From this it will be seen that every way, both on account of its non-usefulness, adaptability, and by reason of the impossibility of obtaining a quantity sufficient for the contemplated repairs, that the use of the so-called "black heart" redwood is out of the question.—*Alta.*

BEST TIME TO PAINT HOUSES.—The *Technologist*, a good authority, states that paint applied to the exterior of buildings in autumn or winter will endure twice as long as when applied in early summer or in hot weather. In the former it dries slowly and becomes hard, like a glazed surface, not easily affected afterward by the weather, or worn off by the beating of storms. But in very hot weather the oil in the paint soaks into the wood at once, as into a sponge, leaving the lead nearly dry and nearly ready to crumble off. This last difficulty, however, might in a measure be guarded against, though at an increased expense, by first going over the surface with raw oil. Furthermore, by painting in cold weather you escape the annoyance of small flies, which invariably collect during the warm season on fresh paint.

HOW TO OIL A HARNESS.—A correspondent of the *N. Y. Tribune* says:—Linseed oil is sometimes applied, or sweet oil which is not made from olives, or other adulterated oils, which dry on the leather and cover it with gum. To properly oil a harness it should be taken apart and washed with a sponge and warm soapsuds; then wiped, and while damp greased with clean tallow mixed with lampblack; this should be rubbed in while warm until the leather is filled; it should then be rubbed with cloths until it does not stain the hands. After one complete dressing an occasional application of the tallow and lampblack will keep the harness in good order, and there will be no gum for dirt to stick to.

SELLING STUMPS.—Walnut stumps are getting valuable as articles of merchandise at the East. Some one has discovered that the curly grains of the roots can be used for veneering purposes with great success, and the result is that they are in demand, and are worth one hundred and fifty dollars per stump. Some of the backwoodsmen of the forests of Iowa, Minnesota and Wisconsin are getting out the stumps rapidly, and are creating a new and valuable trade. The veneering made of these roots is said to be most beautiful, and can be used in the finest work, and is particularly adapted to use in the manufacture of musical instruments.

THE OHIO FARMER says more injury is done to carriages by greasing too plentifully than the reverse. Tallow is recommended as a better lubricator than lard for wood axletrees, and castor-oil for iron; lard is apt to penetrate to the hub, and work its way around the tenons of the spokes and spoil the wheel. Just enough grease should be applied to the spindles of a wagon to give it a light coating. To oil an iron axle, first wipe clean with a cloth wet with spirits of turpentine, and then apply a few drops of castor-oil near the shoulder and end. One teaspoonful is enough for the four.

TO PRESERVE POLISHED METALLIC ARTICLES FROM TARNISHING IN THE AIR.—M. Pascher says: Melt in an open glass vessel heated in warm water 15 parts of paraffine to which has been added about 45 parts of petroleum; after becoming almost cool, it may be applied to the object to be protected.

COTTON AND ASBESTOS FIBRE.—A company has been organized in Philadelphia to operate a series of patents granted recently to Mr. Rosenthal, of England, for manufacturing textile fabrics upon his plan, of mixing with the wool or cotton fibre a variable quantity of asbestos.

A new preventive for boiler scale is announced in England, in the shape of the leaves of the barberry, a wild, trailing plant, common in this country, and also found in England and Scotland. The leaves are said to contain gallic and tannic acid.

GOOD HEALTH.

Bee Sting—How to Treat It.

The sting of a bee is naturally more violent than that of a wasp, and with some persons is attended with fatal effects. Two deaths from such a cause have recently occurred. The sting of a bee is barbed at the end like a fish-hook, and consequently is always left in the wound; that of a wasp is pointed, so that it can sting more than once, but a bee cannot. When a person is stung by a bee let the sting be instantly pulled out, for the longer it remains in the flesh, the deeper it will pierce and the more poisonous it will become. The sting is hollow, and the poison flows through it, which is the cause of the pain and inflammation. The extracting of the sting requires a steady hand, for if it break in the wound the pain will continue for a long time. When the sting is extracted, suck the puncture, and thus prevent inflammation.

Spirits of hartshorn, if applied to the affected parts, will more fully complete the cure. The poison is acid, and the alkali will neutralize it. If the hartshorn is not at hand saleratus can be wet and laid upon the place; and soft soap will often ease the acute pain. On some people the sting of bees and wasps have little effect, but it greatly depends upon the state of the blood whether it will prove injurious, and these simple remedies if applied at once, will soon effect a cure.—*Ex.*

CAUTION TO ATHLETES.—In a paper in the *Lancet*, Dr. Cornelius Black, of Harley street, Cavendish square, London, thus refers to the effect of violent exercises on the heart: They hurry the heart's action to an inordinate degree; they cause it to throw the blood with force into the extreme vessels, and as there is almost always one organ of the body weaker than the others, the vessels of this organ become distended, and remaining distended, the organ itself becomes diseased. Running, rowing, lifting, jumping, wrestling, severe horse-exercise, cricket, foot-ball, are fruitful causes of heart disease. Those which require the breath to be suspended during their accomplishment are more fruitful causes in this respect than those which require no such suspension of the breathing. Rowing, lifting heavy weights, wrestling, and jumping do this; and of these rowing is the most powerful for evil. At every effort made with the hands and feet, the muscles are strained to their utmost; the chest is violently fixed; no air is admitted into the lungs; blood is thrown by the goaded heart with great force into the pulmonary vessels; they become distended; they at length cannot find space for more blood; the onward current is now driven back upon the right heart; its cavities and the blood vessels of its walls become in like manner distended; the foundation of disease is laid. Hypertrophy, hæmoptysis, inflammatory affections of the heart and lungs, are the consequences in the young; valvular incompetency, rupture of the valves or of the muscular fibres of the heart, pulmonary apoplexy, and cerebral hemorrhage, are too frequently the immediate consequence in those of more mature years.

AGUE SPORES.—In a communication to the French Academy, M. Bolestra, states that, in examining marsh water he always finds, in proportion to its degrees of putrefaction, a granular microphyte, somewhat resembling in form the Peruvian cactus. It is always accompanied by a considerable quantity of small spores, greenish-yellow, and transparent. This plant grows on the surface of the water; when young, it is rainbow-like in tints, and looks like spots of oil. At the low temperatures of cellars containing no vegetation and in winter, it develops slowly, but in contact with air and exposed to solar rays, it grows fast, disengaging small air-bubbles. M. Bolestra thinks that those spores constitute ague poison, and that they can be found in marsh air. He himself caught ague twice during his researches—once after being exposed to air from water in fermentation covered with fresh algae in full vegetation, mixed with an extraordinary quantity of spores.

ABSORBING POWER OF THE HUMAN SKIN.—Dr. Thomson of Edinburgh relates some experiments which he tried on his own person to ascertain the truth of the statements made as to the curative power of mineral water baths, depending on the absorption by the skin of certain salts and other substances which they hold in solution; and further, to ascertain whether certain substances applied in the form of ointments, etc., pass through the skin and reach the blood before they produce any beneficial effect. His conclusions are that not only has absorption by the skin been greatly exaggerated, but in the case of substances in aqueous solution it seems to be the exception, not the rule, for absorption to take place; and that, in the case of ointments, etc., some of the substances so applied seem to be absorbed and others not.

DEATH FROM A PIECE OF NEEDLE IN THE HEART.—According to the Cincinnati *Lancet and Observer*, at the post-mortem examination of Miss Hoag, of Evanston, Ill., it was found that death was caused by the presence of a piece of needle in the heart. The needle was driven in by a sudden fall when she was about seven years old. The portion of needle extracted was about an inch and one-eighth long.

UNDER-CLOTHING FOR COLD WEATHER.—For children of three years and over there is nothing better, perhaps, than an under-garment clothing the body from the neck and wrists to the heels, much like the night-drawers children wear. They may be made with a plain, easy, high-necked waist, with long, straight sleeves, and with open drawers sewed to the waist. The drawers should be rather full at the top, but small enough at the lower part of the leg to go inside the stocking, reaching to the heel, or leaving no gap above the shoe. "Doctors disagree" about the material of this under-garment, some recommending woolen and some cotton. Taking into account the difficulty of washing woolen without shrinking it, and the disagreeable sensation many skins experience in wearing it, probably the best way in most cases is to have this under-garment made either of cotton flannel or of thin cotton-cloth, with a similar garment of warm woolen material over it. Buttons at the waist support the other under-clothing.

FRENCH THEORY OF FATAL REMEDIES.—According to M. Alphonse de Candolle, when a fatal malady has seriously affected the younger portion of a population, the succeeding generation, descended from persons who escaped the disease or were but little affected by it will be found less liable to attack, as an ordinary effect of the law of descent, this continuing to be the case from generation to generation. This, therefore, constitutes one cause of the weakening of epidemics, and may serve to explain the reason why a disease is most injurious when it first attacks any people, and why it subsequently becomes rarer and less dangerous, as has frequently been observed. After the lapse of several generations, however, a population moderately affected by disease approaches the condition of one which has never had it, and increased intensity may then ensue.

RELATIVE VALUE OF DISINFECTANTS.—In the Central Chemical Department of Public Health at Dresden, numerous researches have lately been made with various disinfecting materials for the purpose of disinfecting liquid manures; the chief results are appended below. The value of chloride of lime and sulphuric acid, which form the most effectual disinfecting material, is here expressed by 100; while the remaining numbers show the value of the other materials as compared with this standard:

Chloride of lime with sulphuric acid.....	100.0
Chloride of lime with sulphate of iron.....	99.0
Luder and Liedloff's powder.....	92.0
Carbolic acid—disinfecting powder.....	85.6
Slaked lime.....	84.6
Alum.....	80.4
Sulphate of iron.....	76.7
Chloralum.....	74.0
Sulphate of magnesia.....	57.1
Potassium permanganate with sulphuric acid.....	51.3

THE MEDICAL BOTANY OF CALIFORNIA.—Dr. W. P. Gibbons, of Alameda, has been devoting considerable time and labor to the investigation of the medical properties of the plants peculiar to this Coast, and solicits the aid of his professional brethren in different quarters. In a paper, lately read before the State Medical Association, he describes a number of cases showing marked benefit from the *Grindelia* in Asthama, and thinks it will prove a valuable remedy, if employed with proper discrimination. There are two species which appear equally active, the *robusta*, growing in low places, and the *hirsutula* on dry fields and hills. The infusion he regards as the best preparation.

POISON OAK.—Experiments with animals go to prove that poison oak (*Rhus toxicodendron*) may be eaten with impunity. Indeed we have frequently heard it asserted by persons in California that they have seen it eaten by men, with a view of its acting as an antidote to its poison externally, or from mere braggadocio. All Californians are aware of the violence with which its juice acts when applied to the skin of most persons, many being severely poisoned by its slightest touch. It is also claimed that some people are so sensitive to its action as to be seriously poisoned by its exhalations, without any contact whatever with either its juice or foliage.

HAY FEVER.—so-called, has not yet generally been recognized by physicians as a separate disease, but a recent writer on the subject seems to have established its individual identity. "Autumnal catarrh" is the scientific term given to the disease. No cure has been found for it; but it has been observed that there are many places where the disease is not contracted, and where it disappears from those suffering with it in a few days. Most of the White Mountain and Adirondack regions are free from it, nor is it known in Germany or France.

THE GROWTH OF THE HAIR.—The durability of its color, its flexibility, elasticity and gloss—depend solely upon its sanitary condition; and there is nothing under the sun that so effectually promotes the health of the fibres and of the integuments from which they spring, as correct hygienic habits.—*Science of Health.*

A MAN will die for the want of air in five minutes, for want of sleep in ten days, for want of water in a week, for want of food at varying intervals, depending on constitution, habits of life and the circumstances of the occasion.

COLIC.—One or two heaped teaspoonfuls of common salt in cold water will sometimes relieve; repeat, if necessary. A teaspoonful of turpentine and twenty drops of peppermint is also good.

Turkey Breeding.

There are thousands of the animals or birds we call turkeys, sold every year in our markets, that are not *turkeys*, any more than a gosling is a goose the first year of its growth. They are simply turklets, and if sold then, are sold just two years before they have reached their maturity.

Audubon, the distinguished American ornithologist says: "The third year the male may be said to be an adult, although it increases in weight and size for several years more. The females at the age of four are in full beauty." The naturalist was then speaking of the wild turkey; but as all our families of domestic turkeys have descended from the American wild ones, not more than about three hundred years ago, and frequent crossings of the wild and the domestic are known to have been made during that time to the present, it is but reasonable to suppose that the law of growth that governs the wild turkey, also to a great extent controls the domestic.

Indeed domestication has only changed the color of the plumage; and the history of the turkey is remarkable for this fact, that it does not sport in variety of form or size. Now no breeder of swine would think of improving his stock in size at least, by killing off every year his old or more than one one year old sows, and breeding only from pigs a year old; yet he would be quite as wise as he who annually retains only his turklets or one year old turkeys for breeding purposes.

Old turkeys do not lay as many eggs or as early in the season as younger birds; but the turklets are so much stronger hatched from the eggs of old turkeys, that more can be raised from them in a season than from the eggs of younger ones.

How to Select.

Select the earliest hatched, largest and best formed turkeys for breeding purposes, securing a gobbler not related to them, if convenient. Keep the hens until seven or eight years old, or so long as they continue to lay well, but keep the males no longer than the fourth year, and the breeder will be satisfied with the result, for we have seen it tried.

Feed moderately during winter till the laying season, then plentifully, and good turkeys will lay from 15 to 25 eggs the first litter. These may be hatched with advantage under large hens, especially any of the large Asiatic family noted as good setters. Very soon the turkey will commence her second litter of eggs, which in number nearly equal the first.

Young turkeys of a year old will sometimes, if well kept during winter, lay as many as fifty good eggs. Let the turkey set on her second litter of eggs. When the young turklets or poults come off, which will be in from 27 to 29 days, do not commence stuffing them with dough, allspice, pepper or anything else, for they need nothing but warmth for the first 24 hours.

The second day, give a little hard-boiled egg grated finely, 4 or 5 times and nothing else. Continue the egg daily for 3 or 4 weeks. The curd of sour milk, made by scalding the milk with a little water, letting it settle and straining off the liquid, makes an excellent food to alternate with the egg after the poults are a few days old. A little stale bread broken finely can also be mixed with the curd or given separately.

After the young are four weeks old, they may be fed with soft feed to advantage, such as scalded corn meal, oat and barley meal scalded; but these meals are poor feed wetted with cold water. Any person can raise turkeys who feed often when young, and only fresh nourishing food; and will also keep the drinking cups clean, and the poults out of rains and dews until at least two months old.

Gathering Almonds.

In a previous number we made a sort of comparison between the cultivation of an acre of almonds and an acre of wheat and assuming that the almonds by the help of the boys and girls and perhaps others of the household might be gathered cheaply.

Now a correspondent, C. T. Y., very properly calls upon us to put the matter into a more definite and reliable shape, as to the actual cost of gathering an acre of almonds. Well, we must acknowledge that while we can arrive at very nearly the actual cost of harvesting an acre of wheat, we cannot give the cost of gathering and fitting for market, an acre of almonds. We doubt whether there is to be found in the

State, a single entire acre of almond trees together, five years old or in full bearing.

If there is, and the owner has ever made the experiment of the cost of gathering a matter of fact, we would like to benefit our readers by giving the result.

After the foregoing was in type we received a note from Mr. Clough to the following effect, that the best way of gathering almonds is by employing Chinese boys, some of whom after a little practice can pick 500 pounds a day, whilst another can clean 500 pounds. By allowing the almonds to get very ripe, the shucks can be rubbed off very readily between two boards corrugated like wash-boards.

As near as observation has been made it is believed that in large quantities, one cent a pound will cover all the expense of picking, drying, and sacking the nuts ready for market.

Grains of Science.

[Written for the Press.]

Among the Birds, or Facts for Darwin.

The natural wants of most animals explain their habits. Habit denotes law. Voluntary motion denotes object. What that object is, is frequently less plain than the fact of it. Not a few of the maneuvers of animals puzzle the beholder.

Mounds had their builders in jejune men.

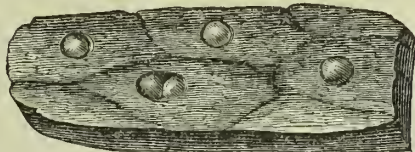
Fig. I.



Coral reefs by insects. Did you ever suspect birds were tree-planters?

During the past summer I saw a young oak tree a little over one foot in height, in its second summer's growth. It was in the garden of Mrs. H., of Contra Costa County. She informed me she saw a blue jay (*garrulus cristatus*) plant the seed of that little oak. The bird came with the acorn and dug a hole in the soft earth near a bunch of pinks, two or three inches deep, put the acorn into the little pit, small

Fig. II.



end downwards, and drove it well into the ground, striking it with its beak as with a hammer. The strokes were strong, rapid and loud. The jay then carefully covered it with loose dirt and departed. My observing informant remarked she had often seen the blue jay plant acorns in different places about the garden, but had never noticed one return to recover the buried fruit.

We are accustomed to believe winds, floods, and water currents are the natural transporting agents of seeds, nuts and fruit buds. Here witness the beautiful jay, good creature, a benefactor to desolate plains. Trees encourage comfort and civilization. The blue jay anticipates both by planting trees. Did that bird work for itself, for man, or for posterity?

In Stanislaus County, Mr. Dicky gave me report of his observations that may explain the origin of dried meat. He had noticed a butcher-bird (*Lanius excubitor*) engaged in its remorseless pastime. This tiny bundle of cruelty in feathers is the guerilla of the air. Mr. Dicky saw one impale lizards, small snakes, crickets, and horned toads on the terminal spines of the century plant leaf and on the sharp points of limbs of trees. (See Fig. I.) Soon each carcass became dry and hard, and swung with the fitful breeze to and fro, in small imitation—or suggestion it may be—of the vane to a spire. If he knocked off the transfixed specimens, in a few days others were replaced. Persistent assassin! Cut-throat industry! It contemplates death feasts with vulgar satisfaction. The bird was never seen to resort to, or remove them for food. The sight of the slain seemed to nourish its taste for blood. Fear, revenge,

or love of murder might prompt to kill; but to expose the hapless victims high in open view, is to hint at punishment after death, or at dried beef.

Woodpeckers dig holes in trees, and deposit acorns in them. (See Fig. 2.) Acorns are supposed to afford worms, which are of interest to woodpeckers. I saw specimens of old wood and thick oak bark—obtained in the vicinity of Stockton—having dozens of holes dug in them. Each hole contained one, sometimes two—not acorns—but smooth pebbles. The stones were nicely selected to fit the holes, and squeezed in so tightly as not to fall out, though the bark be turned with the openings upside-down. As you inspect the curious pieces, you decide it is the work of crude art and of native tools. Woodpeckers doubtless made the holes. For what? Not in search for worms, for there are no tortuous worm avenues, nor worm tracks, and none of the holes pass through the bark to reach the wood beneath. Why are pebble stones placed there; by whom or what? Did the same creature that made the openings, pave them?

These questions are unimportant, but not uninteresting. They wait for solution. Yet do we not find them paralleled in the coarse instincts of humanity? The acorn planted by the jay may have been plundered and thus concealed. The butcher-bird is probably not a fallen angel, but nature's exhibit of a compact genius of cruelty, and loves the trait. Magpies may have put stones in the artificial bread-baskets of oak bark, in place of acorns, as a joke on woodpeckers.

A. S. HUDSON, M. D.

Oakland, Nov. 25, 1872.

Kentucky Shorthorns.

By letter from Carlin under Date of Dec. 2d, we learn that Col. Peter Saxe is now on his way to California with a splendid selection of improved Shorthorns from some of the best Kentucky herds. From the Cynthiana (Ky.) News of Nov. 21st, we gather the following:

The sale at Wm. Warfield's, in Fayette county, on the 12th inst., was largely attended by buyers from the States and Canadas. There were 91 head sold, at about \$30,000, bringing satisfactory prices.

London Duchess 6th, sold for \$2,050; Duchess of Sutherland 4th, for \$1,050; Lucy 18th, for \$775; a calf, six months old, for \$510; a calf, five months old, for \$410; Laura, six months old, for \$395; Mary Leslie, six months old, at \$315. Of the bulls, the highest were \$650, for London Duke 8th, one year old, and Lord of the Manor, one year old, for \$500; Jack Tar, six months old, for \$505; a three months old calf for \$360.

From a letter of a correspondent—J. A. Gano—to the *Farmers' Home Journal*, under date of Nov. 2d, 1872, we learn the sources from whence Col. Saxe has obtained his present herd of fine animals. Mr. Gano says:

I have just returned from a visit to Cynthiana. Col. Peter Saxe, now of San Francisco, California, is there collecting together and preparing to ship to the far West, nearly sixty head of Kentucky Shorthorns. About one-third are highbred bulls and the rest are promising young heifers of the best stock. They were selected with care from the herd of Gen. Lucius Desha & Sons., and the Bros. James and Noah Patterson, and others in Harrison county; and of Samuel Patterson, my own, and the herds of my sons R. M. Gano and J. Allen Gano, Jr., of Bourbon county. Many of these choice animals were selected with care to fill orders from gentlemen of wealth and prominence in Nebraska, Utah, California and Oregon. Mr. Hunter, of Woodford, with much taste and judgment, and with untiring patience rode from county to county, and from one herd to another, and assisted the Colonel in making selections for one of the gentlemen, a friend of his, Mr. J. B. Haggins, who resides in San Francisco, Cal.

Col. Saxe deserves well of Kentucky and the "Far West," for pioneering the way through so much of risk and danger, so much of expense, toil and labor in opening up this trade; not only in fine cattle, but also in sheep, both Merinos and Cotswolds, during the past and present year. He has not only led the way, but is now taking the largest shipment ever made, to the knowledge of the writer, and at an outlay of many thousand dollars. My sons and I furnished some thirty-two animals for this exportation. I have never before permitted any one to select so many of my choice and promising heifers at one time. May great success crown the labors of the noble pioneer.

I am truly yours,

JNO. ALLEN GANO.

This fine herd of the indefatigable Col. is expected to arrive soon, and though the writer as above seems to give him, the Col., the credit of almost pioneering the introduction of Shorthorns to California, we can only conclude that he was not fully posted as regards the importation of blooded stock to our State. Still the Col. deserves well of his country for the efforts

and zeal in the introduction of much fine stock.

Since the above was in type, the Col. has arrived; and at Twenty-second and Mission street stables, his splendid stock, including thoroughbred cattle and a car load of the best Spanish Merino ewes, can be seen.

More Fine Shorthorns.

Our stock growers are alive to the importance of introducing the very best breeds of cattle known in the herd-books of the world; and there seems a commendable rivalry to see who shall possess the best, regardless of cost. This promises well for the future of our farm stock and we are glad to make a note of any instance of importation in which the animals seem to excel.

We were fortunate yesterday in dropping in upon a recent importation of Durhams—or as they are more generally called—Shorthorns, brought out at large expense by Page Brothers, of 321 Front street, San Francisco; purchased for the estate of Thos. S. Page. This splendid importation of Shorthorns is probably unsurpassed in this State for purity of blood and everything that constitutes point and symmetry in the perfect animal.

We think we can be permitted to speak thus confidently of the superiority of this splendid importation, when we assert that not a single animal of the herd is for sale, and therefore what we say cannot be misconstrued as an advertisement; but the expression of our real sentiments in regard to the merits of the stock here introduced to the notice of the public.

The following is a list of the animals with their pedigree, which may interest others of those who are engaged—as are the Messrs. Page—in the growing of thoroughbred stock:

Bulls.

MAZURKA'S ROYAL OXFORD—Red; calved Sept. 20, 1872; bred by A. J. Alexander, of Spring Station, Ky. He is by Royal Oxford (18,774) out of Mazurka 29th; weighed on removing from the cars 1,135 pounds.

DUKE OF SUTHERLAND—Red and white; calved Sept. 21, 1871; bred by Wm. Warfield, of Lexington, Ky. He is by imported Robert Napier, (8,975) out of Duchess of Sutherland 3d.

BARON HUBBACK, 3d—Red, with white star; calved Oct. 20, 1872; bred by Glen Flora Stock Breeding Association, of Wanaken, Ill. He is by imported Baron Hubback, 2d, (11,337) out of Mimosa.

Cows.

CAROLINE AIRDRIE—Red, with white spots; calved March 12, 1869; bred by J. H. Pickrell of Harriestown, Ill., and purchased of J. H. Kissinger, Mo. She is by Sweepstakes, (6,230) out of Caroline 3d; weight on removing from cars, 1,730 pounds. This cow is in calf to Red Duke (7,167) the noted sire of Fannie Forester, a heifer that has taken the sweepstakes and other premiums against all competitors.

NONIE RICHARDSON—Red; calved April 20, 1871; bred by J. H. Kissinger of Clarksville, Mo. She is by Starlight, (11,018) out of Rose of Elkhill.

OPHIE PIERCE—Red and white; calved March 31, 1872; bred and purchased of J. H. Pickrell, Ill. Is by imported Baron Booth of Lancaster, (7,535) out of Nettie Pierce.

GOLD LEAF—Red; calved in March, 1871; purchased of J. G. Kinnaird, Fayette county, Ky. She is out of Gilt Edge by Muscatoon, (7,057.)

DAUNTLESS—Red roan; calved May, 1870; bred by Col. L. G. Morris, Fordham, N. Y., and purchased of Glen Flora Breeding Association. She is by Mariner, (5,933) out of Mimosa.

MARY BELL 6th—Red and white; calved March 1, 1872; bred by Wm. Warfield, Ky. Is by imported Robert Napier, (8,975) a pure Booth bull out of Mary Belle 2d.

MARY 4th—Light roan; calved June 10, 1868; purchased of J. H. Pickrell, Harriestown, Ill. She is by Ike, Marvel (5,803) out of Mary 2d. In calf to Baron Lewis, (9,484) a bull sold at auction on Nov. 24th last, for \$3,000.

LAURA 13th—Red; calved Dec. 7, 1869; purchased of J. H. Pickrell, Ill. Is by 5th Duke of Geneva, (7,932) out of Laura 8th.

These fine animals costing, from \$1,000 to \$2,000 per head, are intended particularly for the Sonoma county rancho "Cotate," and are a magnificent acquisition to the former herds of introduced thoroughbreds, of this class and breed of cattle, in California.

AMERICAN AGRICULTURIST FOR DECEMBER.

We have just received this sterling agricultural monthly, published by Orange Judd & Co., 245 Broadway, New York. We class this monthly among the very best on our list of exchanges. We always find something crisp and new among its numerous and varied original articles and illustrations, keeping fully up with the improvements and innovations of the times.

Thus we find in the present number in two illustrations, that the driver of an ox team, takes the opposite side to that in vogue, when "we" was a boy in New England 40 years ago,



Little Fingers.

Ah! I should have wandered far
Down sin's wild and lonely track,
Only clinging firm and fast,
Little fingers held me back.
Little fingers, soft and fair,
Little fingers, clinging tight,
Led me from the evil way,
Held me to the true and right.

When a heavy midnight gloom
Hung above my whole of life;
And the battle and the storm
Made each hour a fearful strife;
When in beauty of the May,
I had neither love nor part,
And the roses of the June
Brought no fragrance to my heart;

When the love I doted on
Fell like ashes in the dust,
And the leprosy of sin
Touched the anchor of my trust;
When so full of selfishness,
Every lip filled every word,
And all souls seemed icy founts
Where sweet waters never stirred;

All the world a weary way,
Woary, weary, and so long!
With no justice but in might,
And no hope but for the strong—
Oh! I should have faltered then,
Wandered down sin's blood-red track,
Only clasping soft and close,
Little fingers held me back.

Sallie's Bed-time.

A father, not very far from here, read in the paper the other morning that the "Utica girls who wait their beaux to go home the same night they call, pull a string at the proper hour, which reverses a picture, on the back of which appears the words, 'Ten o'clock is my bed-time.'"

This father, who had a daughter given to late hours when a certain youth sits up and helps her keep them, thought he would try this Utica plan; so he wrote in large characters on the back of a huge portrait of George Washington this inscription:

"10 O'clock is Sallie's Bed-time"

Then he arranged the picture so that when he attached a string to the frame he could reverse it from his bed-chamber. But when Sallie entered the room an hour later, her aesthetic eye was outraged by observing the portrait of George hanging slightly out of plumb, so to speak, and, in adjusting it, her father's little game was revealed in all its subtle ingenuity.

Sallie was not a Utica girl, however; so she just went to work and neatly effaced the figure 0, leaving the one standing solitary and upright,—which, you will observe, made a few hours' difference in her bed-time. That night, as usual, Sallie received a visit from her young man—which his front name it was Henry—and her paternal parent attached his string to G. W.'s portrait, and retired to his downy couch.

About ten o'clock, while Henry and Sallie deeply absorbed in some knotty problem, with their heads so contiguous that you could not insert a piece of tissue paper between them, the Father of his Country suddenly turned his face to the wall, as if he was ashamed to gaze upon such doings. Henry, with a sudden start, glanced at the picture and saw the handwriting on the wall, as it were, which read, "10 o'clock is Sallie's bed-time." Then Henry looked at Sallie with an interrogation in his eye, which was partly dispelled by the fair maid murmuring, "It's all right." Henry said of course it was all right; that he had long known one o'clock was her bed-time, and he thought it was plenty late enough, too, for a young girl to be out of bed; but what business, he said, had Washington's portrait to be flopping about in that way? Then Sallie explained; and the twain resumed work on the problem, Henry putting his arms around Sallie to prevent her falling off the chair.

Meantime the old man was listening for the front door to open, and his would-be son-in-law's footsteps pattering over the pavement with the toes of his boots pointing from the house. These sounds not falling upon his ears, and thinking the old thing didn't work right, he gave the string another pull, and George W. again faced the audience. Then he listened, but he heard no footsteps—nothing but a peculiar sound, something resembling the popping of champagne corks. Then he grew cross, and gave the string another jerk, causing G. W. to turn about with violent suddenness, just as if he was dreadfully out of humor, too.

And still all is quiet below—except the popping sound. Then the string was pulled again—and again—again—indicating that the old fellow was just ready to explode with rage. And for fully fifteen minutes did he have the portrait of the man who couldn't tell a lie turning excited flaps, like a bewitched gymnast, until he fell asleep exhausted—Sallie's father fell asleep, not the portrait.

Henry kissed Sallie good-night at one o'clock A. M., remarking, as he did so, that it would seem like a long, long, weary year ere he would

see her again—because, you know, he didn't expect to see her again until the evening of that day.

The next morning, her father examined the portrait, and when he fully understood the situation he was pained. He shed a silent tear, detached the string, sponged out the inscription and walked away with the weight of fifty-five years on his shoulders—that being his age. He says a girl who will go back on her father that way would just as lief as not disgrace her parents by marrying a Congressman.—*Morris-town Herald.*

Politeness.

The practice of politeness, like that of every other virtue, is its own reward. If, by word or kindness, or simple act of benevolence you can bring the smile of joy to the face that is worn with care or shaded by sorrow, you have not only done good to others, but the reflex influence of your act will open a new fountain of happiness in your own heart. A whole life spent in taking careful heed of the rights and feelings of others—which means politeness—and always carrying smiles instead of frowns into the daily intercourse with society, will stamp the living virtues in the face, and make even an ugly man handsome. Right here is to be found the first, and at the same time the cheapest cosmetic that was ever used to restore or perpetuate the lines of female beauty. If young ladies would come to understand how they can mar their beauty, not for an hour or a day, but for lifetime, by supercilious manners, fits of pouting, anger, or thoughtless feelings or selfish words or acts toward their associates, there would be many more beautiful women than there are at present. If they could be convinced how many fresh touches of spiritual beauty would be added to their charms by the constant use of this cheap cosmetic—which is warranted not to wash off—how very few really ugly women there would be in the world.—*E. C.*

How LONG SHOULD A MAN LIVE.—According to Professor Faraday, the crime of suicide is very common in this age of the world, and he intimates that all who die under one hundred years of age may be charged with self-murder. Providence having originally intended man to live a century, would allow him to arrive at that advanced period if he did not kill himself by eating unwholesome food, allowing himself to be annoyed by trifles, giving license to passions, and exposing himself to accident. Flourin advanced the theory that the duration of life is measured by the time of growth. When once the bones and epiphysis are united, the body grows no more, and it is at twenty years this union is effected in man. The natural termination of life is five removes from these several points. Man being twenty years in growing, lives five times twenty years, that is to say, one hundred years; the camel is eight years in growing, and lives five times eight years, that is to say forty years; the horse is five years in growing and lives twenty-five years, and so with all other animals.

"IF I ONLY HAD CAPITAL."—"If I only had capital," we heard a young man say a few days ago, as he puffed away at a ten cent cigar, "I would do something." If I only had capital," said another, as he walked away from a dram-shop where he had just paid ten cents for a drink. "I would get into business." The same remark might have been heard from the young man loafing on the street corner. Young man with a cigar, you are smoking away your capital. You from the dram-shop are drinking yours and destroying your body at the same time—and you on the street corner are wasting yours in idleness and forming bad habits. Dimes made dollars. Time is money. Don't wait for a fortune to begin with. If you had ten thousand dollars a year and spent it all, you would be poor still. Our men of power and influence did not start with fortunes. You, too, can make a mark if you will. But you must stop spending your money for what you don't need, and squandering your time in idleness.

A CHEERFUL VIEW OF THINGS.—"How dismal you look!" said a Bucket to his companion, as they were going to the well.

"Ah!" replied the other, "I was reflecting upon the uselessness of our being filled; for, let us go away ever so full, we always come back empty."

"Dear me! How strange to look at it in that way," said the other Bucket. Now, I enjoy the thought that, however empty we come, we always go away full. Only look at it in that light, and you'll be as cheerful as I am."

Give a Little.

There is nothing harder for a man with a strong will and a stronger "won't" in his composition, than to make up his mind not always to have his own way—to submit to a thousand little wrongs and impositions rather than quarrel with neighbors. A man who had been a clergyman, physician and lawyer, was asked which profession was the most profitable? He replied, in substance, that "where a man would be willing to pay twenty-five cents to secure his salvation, and fifty cents to be made well when he was sick, he would willingly give five dollars to have his own way."

Now this willfulness is, of all kinds of business, the most unprofitable. One well says that a man needs a long purse who determines, come what will, to have his own way. We must learn to turn sharp corners quietly or we shall be constantly hurting ourselves. Two men with mills on the same stream quarreled over the water power. There was not probably five dollars difference between them at the start, but neither would yield an inch. The case was thrown into the hands of smart lawyers, who aggravated the difficulty for their own ends, and worried the case along year after year, until one lawyer took the upper mill for his dues, and the other the lower. They probably were contented not to quarrel over the trifles that proved so disastrous to their clients.

Before you go into a lawsuit, carefully calculate your cost if you should not gain it, and see if you had not better put the money into a flock of sheep, a new carriage for your family, a young cow for your son or daughter, or a thousand other things that might give you much more profit and happiness. The malicious delight you feel in gloating over a neighbor's discomfiture, is not happiness, but only its miserable counterfeit. It is a disposition near akin to that which lost spirits feel. Root this out of your heart if you would not be forever miserable.—*Country Gentleman.*

A LADY AT WORK IN A MACHINE SHOP.—Miss Knight, of Boston, has invented a machine for making paper bags, and is having a number of them manufactured at Chicopee under her own supervision. The workmen employed were at first skeptical as to her mechanical ability, but she has cured them of this by going daily and working among them, detecting mistakes and improving plans with a keener eye than any man in the works. Her invention is said to be an invaluable one, and she will make a handsome fortune out of it. When a friend ventured to wonder a little at her present vocation, and couldn't explain how a woman should ever do anything in machinery, she said: "It is only following out nature. As a child I never cared for things that girls usually do; dolls never possessed any charms for me. I couldn't see the sense of coddling bits of porcelain with senseless faces; the only things I wanted were a jackknife, a gimlet and pieces of wood. My friends were horrified. I was called a Tom-boy, but that made very little impression on me. I sighed sometimes because I was not like other girls but wisely concluded that I couldn't help it, and sought further consolation from my tools. I was always making things for my brothers; did they want anything in the line of playthings, they always said, 'Mattie will make them for us.' I was famous for my kites, and my sleds were the envy and admiration of all the boys in town. I'm not surprised at what I've done. I'm only sorry I couldn't have had as good a chance as a boy, and been put to my trade real early." And yet she knows as much about machinery as though she had made it a study all her life. It is a genuine gift, and she can no more help making machinery than Anna Dickinson can help making speeches.

GOOD TEMPER AND GOOD COOKING.—It is astonishing how much the cheerfulness of a wife contributes to the happiness of home. We remember hearing a husband say that he could gauge the temper of his wife by the quality of her cooking; good temper even influenced the seasoning of her soups and the lightness and delicacy of her pastry. When ill temper pervades, the pepper is furiously dashed in as a cloud, perchance the top of the pepper box is included, as a kind of diminutive thunderbolt; the salt is all in lumps and the spices seem to betake themselves all to one spot in the puddings, as if dreading the frowning face above them. If there be a husband who could abuse the smiles of a really good tempered wife, we should like to look at him! Among the elements of domestic happiness, the amiability of the wife and mother is of the utmost importance—it is one of the best securities for the happiness of home.

DEATH OF THE GOOD.—Sometimes in the season of drouth, you may stand upon a hill-top and look on the parched and yellow fields. Presently you say: "What is the meaning of that riband of green, that winds down the slope, and through the meadows, till it is lost in the distance? Ah! now I remember. There is where a brook ran once. Its waters have been dried up, but the verdure which they nourish remains." And so, how often does it happen, after a good man's life has exhaled to heaven, that the beauty and glory of its beneficence abide.

WHAT is every man's business, is no man's business.

Young Folks' Column.

How Little Allan Punished Himself.

"Allan! Where is Allan?"

A moment ago he was playing with his little cart in the yard, hauling dirt to the currant bushes. I cannot tell how many cartfuls he carried. He was busy as a little man. But Allan is gone. There is his cart.

"Allan! Allan!"

"I see here!" at last said a small voice from the back parlor.

"What are you there for?" asked his mother, opening the door and looking in.

Allan did not answer at first. He was standing in the corner, with a pretty sober look on.

"Come out to your little cart," said his mother; "it is waiting for another run."

"I see not been here long 'nuff," said the little boy.

"What are you here for at all?" asked his mother.

"I punishing my own self. I picked some green currants, and they went into my mouth," said Allan.

"Oh! when mother told you not to? Green currants will make my little boy sick," said his mother, in a sorrowful tone.

"You needn't punish me," said Allan, "I punish me my own self."

His mother often put him in the back parlor alone when he had been a naughty boy, and, you see, he took the same way with himself.

"Are you not sorry for disobeying mother?" she asked Allan.

"I sorry; but sorry is not 'nuff. I punish me. I stay here a good while and have thinks."

Is not Allan right? Sorry, if it is only sorry, is not enough.

Always Speak the Truth Boy.

Tom Quayle had come to spend his holidays with his grandfather, who was an old soldier, with a pension for good and faithful service. Grandfather Quayle lived in a pretty cottage, to which he and his good old dame often welcomed their children and grand-children. Grandfather Quayle had a good many strong feelings, and perhaps one of his strongest feelings was his hatred of anything like a lie.

One day Tom was telling him a story of a scrape that some of his school-fellows had got into, and how they escaped punishment by making an excuse, which the master understood, as they intended he should, in one sense, in which it was not true, though the actual words could bear another meaning which was true.

Tom chuckled over this cleverness, as he thought it, of his companions, but his grandfather looked grave and said, "Tom, my boy, never laugh at a lie; and remember that the essence of a lie is the wish to deceive. If you purposely use words that you know others will take in a meaning that misleads them, that is as much a lie as if you spoke a plain falsehood. There are no such things as 'white lies'; all lies are black, and stain your own soul. Believe the word of an old soldier, Tom, no really brave man will stoop to tell a lie. It is a mean, cowardly vice which is very displeasing to God, and which all good men hate. Speak the truth, whatever happens to you and you will please God and gain the favor of your neighbors."

WHAT HURTS THE EYES.—The eyes are made to see with. We ought to be very careful where we look. It hurts the eyes to look at the sun, and we should not look directly at it. It does not hurt the eye to look at cake or candy. But it might hurt a little boy to look at cake. Suppose mamma should put a rich cake into the cupboard and tell you not to touch it. Then suppose you should go and look into the cupboard when mamma was out. You would say, "I will not touch nor taste the cake." But when you saw it you might say, "It looks very nice. I guess it is not so rich as mamma thinks. I do not think it would hurt me to eat a little piece." Then you might break off a piece and eat it. It might make you ill, and then you would be made ill just because you looked. If you had not looked you would not have eaten the cake; besides, it would have made you naughty to look, because you would have done what your mamma told you not to do. You had better be careful where you look.—*Apples of Gold.*

A BOY'S WISH REALIZED.—When Charles Dickens, the celebrated writer was a small boy, he once, accompanied by his father, passed by Gad's Hill Place, even then a lordly villa. After admiring it awhile, he said he would like to live there. His father replied—"So you shall my boy, if you stick to your books and grow up a good man." He never forgot the wish or word of encouragement, and in middle life he found himself able to buy the place, and did so. Gad's Hill Place as the home of Dickens, will be but little less memorable in history than the historic name of Shakespeare. There are few attainments possible to man, to which he may not reach by steady and persevering efforts rightly directed.

We are apt to believe what we wish for.

DOMESTIC ECONOMY

Isinglass.

Many of our readers have no doubt noticed the disappearance of an article which years ago was no small item in the ordinary diet of the people of New England—fish sounds. Though tongues are found in the markets as plentiful as of yore, sounds have entirely disappeared. This mysterious disappearance is now explained by the increased production of fish-gel or isinglass, for the manufacture of which fish sounds are used. The principal seat of the manufacture of isinglass is at Rockport in Massachusetts. The manufacture of the glue was commenced there in a small way many years ago, at a time when sounds could be purchased at two and a half cents per pound. With the introduction of steam power and the enlargement of the factories, came a greater demand for sounds, causing prices to advance to their present rates of from 60 to 85 cents per pound, according to the quality of the article.

So great has the demand for isinglass become that the factories of Rockport have not only for some years absorbed all the sounds to be procured on the North American coast, but have imported largely from abroad. The rivalry of the different firms has caused prices at different times to rise above the figures we have mentioned, and a dollar per pound has often been paid in busy seasons when the supply was light and the demand brisk. Of course, with such prices as we have mentioned readily offered, the fishermen cannot be expected to bring their sounds to market, where they cannot realize a price anywhere near that paid at the factories, and hence the consequent disappearance of sounds, which has puzzled so many persons.

HOW TO MAKE MINCE MEAT.—Boil six pounds of lean beef until tender, let it get cold, and then chop it very fine with your cleaver. Pick three pounds of beef suet and chop that fine. Stone four pounds of raisins, and cut them up. Wash two pounds of currants, and dry them. Cut in bits one pound of citron, and chop one peck of peeled apples. Have two teaspoonfuls of fine cinnamon, one of allspice, one dozen cloves, one large nutmeg, one teaspoonful of black pepper and large spoonful of salt in separate papers, all nicely powdered, three pounds of nice brown sugar, and the syrup from the peel of two oranges preserved; chop the peel up fine. Put in your tray a layer of beef, then suet, then salt and pepper, next sugar, apples, and other fruit, then your spices and chopped orange peel. When all are in, pour the syrup of peel over it, with one quart of French (or some other good) brandy. Work it all up with the hands until well mixed. This will keep in stone jars until the spring and cannot be surpassed, if made strictly by directions. When you wish pies made of it, line your baking plates with a rich puff paste, and fill with the meat; then add sweet cider and a little wine to moisten the meat. Cover with a top crust and bake a pretty brown. Serve them hot.

THE PLAGUE OF FLIES.—A lady writer in *Hearth and Home* has faith to believe that "the plague of flies will not last always." She thinks that before long machinery will almost entirely supersede our teams of horses, mules, and oxen, and that will empty or do away with our stables, which are the principal breeding-places of our house-flies; and she says that however necessary beef-steak and mutton-chops may seem to our present over-worked and over-excited population, making vast herds of livestock seem a necessary source of various necessities which encourage the breeding of flies; she does not believe that slaughter-yards and meat-shops will always offend our senses as now, "and as for pork, you do not yourself believe that swine will form a part of the diet of enlightened people much longer, do you?" she asks. And she thinks that even the dairies will find their occupation gone some day, and mankind be none the worse for eating Graham gems without butter when they have plenty of fruit. "Then will the plague of flies come to an end," saith she.

HOW TO MAKE APPLE WINES.—We give below the recipe used by Mr. J. C. Lary, for making a fine apple wine. As we have been asked for it by several persons of late, we would advise our friends to preserve it for future reference and use:

Sixty pounds of brown sugar, one pound of sulphate of lime, put into sweet cider from the press, enough to fill a forty gallon barrel; leave the bung out forty-eight hours, bung it up and leave a small vent until fermentation wholly ceases. It should be kept in a cool place. When it has ceased to ferment it is ready to use.

DISH WASHING.—Miss Mary D. writes to the *N. Y. Tribune* that she has washed dishes for a living for four years, and spends two-thirds of her time at the sink. She has tried all the improved methods but sees little good in them. She is discouraged and thinks life a burden. She is advised to learn how to run the sewing machine and vary her industries a little. And we say to her that she who washes dishes does good service to her race. What would the best of bread or the nicest roast be served on a dirty plate. Magnify your office Mary, and when you are wiping long rows of plates and saucers, have some interesting book to think about and time won't hang so heavily.

HOME AND FARM.

Producing a New Variety of Wheat.

Perhaps some of your farmers' sons would like to know the origin of the variety of wheat that is most largely cultivated in England today. It will show the advantage of keeping eyes and ears open, and of remembering that "Providence helps those that help themselves." About eight and twenty years ago this month, a Norfolk farmer was walking about among his reapers. A greater amount of personal oversight was probably needed then than now, for reaping machinery was not the order of the day.

In going along by the standing wheat, his eye was caught by the appearance of an ear somewhat different from the rest, fuller, and more equally developed from top to bottom, without dwindling away toward the apex. It was a good stiff-strawed stem, and second thoughts led to its being plucked up and carried home. In another month each grain was dibbled singly, six inches apart, in the farmers' garden. Towards harvest it had to be threshed to keep off the birds, for they like small patches best.

But the new wheat—for a new variety it certainly proved to be—well repaid the pains and care bestowed upon it, and retained all its original characteristics, of full plump grain, square equable ear, and clean stiff straw, with little liability for being lodged or sprouted in a wet season. In two years a small field was sown with it. It proved more prolific than any sorts tried alongside; neighbors wanted to try it, and readily paid a large price for it.

This occurred on a farm at the hamlet of Bowick, and parish of Wymondham. The painstaking grower was Mr. Robt. Banham, who is, we are glad to say, still alive. May many happy days be in store for him! It was first offered to the public in 1848, and has annually been so ever since. From this small beginning Bowick wheat has extended itself far and wide, until it is probably the most extensively grown wheat in England. Nor has it confined itself to this country alone; for a wheat grower near Dieppe informed us sometime since, that he every season purchases 80 quarters of it in Mark Lane, to be sent over for his own sowing. Ten years ago we were requested to send to a French Marquis in the department of Vaucluse, one quarter of it for trial, and had only half its produce year by year been sown since, it would now supply seed wheat sufficient for France. Let no one despise the day of small things.

The secret of Mr. Banham's success is probably this: He has repeatedly re-selected his stock, starting afresh from the largest ear he could obtain, thus getting in the highest sense of the word, a "pedigree" to his wheat. And hence also the oft-noticed fact is accounted for that seed obtained direct from him has a greater robustness of growth than when grown for several years on the same farm without a change of seed.

On this principle any farmer has it in his power to obtain fresh seed, as it were, on his own farm, by simply taking the proper pains. The oft-repeated quotation about the man who makes two blades of grass where only one grew before being a benefactor to his race, is surely applicable, in a high degree, to Mr. Banham. Therefore "honor to whom honor is due."—*English Cor. Country Gentleman.*

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

It is a great pity if the farmer or stockraiser believes very strongly in luck. There are several occupations that suffer seriously—even to the loss of a good name—simply by falling into the hands of devout believers in luck.

But in farming and stock raising the disasters are so general, the suffering so severe, "even unto death" among the dumb beasts, that I hasten to put in my plea for them while the first cool and cloudy days remind us of the approach of winter.

The pen seems feeble; and I am wishing for Gabriel's trumpet, or something loud and fierce enough to startle these dull souls into the line of duty; these men who dare to assume the care and ownership of meek and lowly brutes, and can look on coolly, day after day, and see them starve and shiver and die!

Common humanity pleads for them; religious feeling forbids such cruelty; and the shrinking purse of the proprietors of dead carcasses is a ghastly reproach of his theory of "luck"—a dismal exponent of the leanness of his practice.

But a whole cloud-burst of scolding will do no good unless it can reach and touch

The Real Sinners.

Our readers of the *RURAL* are, let us hope, already on the alert; "mixing brains" with the work of their hands; planning the winter campaign with an eye to health and comfort in every department.

If our wealth (or our poverty) consists of horses, cows, calves, sheep, pigs, hens, cats or

dogs, let us do enough thinking and providing to prevent any prolonged discomfort or suffering among them. Let us not think it is good to own more than we can take care of. That is a losing business and brings reproach upon our land of plenty.

Dr. and Mrs. K. came to make us a visit at Springvale, and after dinner we went out in good old farmers' fashion to look at the young stock. Twenty-four sleek and shining heifers were ambling along to their p. m. cud-chewing under the pine trees, and the Dr. called out: "See, wife, they are like young ladies of sweet sixteen!"

We laughed at his enthusiasm and explained that these had not yet arrived at the dignity of "two-year-olds," although at a little distance we must often look sharply to distinguish them from the cows.

"But how does it happen that they are so large and fine—all large and mature-looking and yet so young?"

"Well, it did not exactly happen. We took care of them through the season of wet and cold. For two months or more they were stabled at night, and had all they could eat of good hay and corn-stalks. Rapid growth is not the only good result, for they are tame and gentle, like to be petted, and will never have to be 'broken' for milking. Another lot of calves just as good as these were taken by a man who trusted to 'luck' to bring them through, and he don't like to tell how few were left when the starvation period was over. But let us introduce some of the Dr's 'young ladies.'

This is Dainty—next comes Ruby—Speedy—and here is little Twinkle with a friendly nose for everybody. The dark-mixed is Shoddy, and right over there is Bounty."

"What nice names!" said Mrs. K., as we walked back to the house. So much better than to give them women's names. That is so awkward." Yes, indeed, very few young ladies feel complimented when their pretty names are given to the calves. One little girl went home grieved and indignant because she heard the neighbor's boys laughing at the tricky ugliness of "Rachel," and was hardly comforted when told that they had given her name to a perverse young calf. A cow should have a name that will express something of her looks, or actions, or character."

This talk reminded me of a promise I had made to send to the *RURAL* a part of our list of names.

When my husband bought cows and proudly entered them upon his herd book, I had a good laugh at the expense of the milky mothers and their sponsors.

"Amie," "Gentle Annie," "Marianus," "Murphy," "Whisky Hill," "Nellie," "Alice," "Doherty," and so on with tiresome repetitions. "What names for cows! And what poverty of fancy! I could do better than that, although new at the business."

So I set my wits at work and soon had a list of 150 names of this sort:

Amble.	Fashion.	Lofty.	Slipshod.
Autic.	Fussy.	Matron.	Silver.
Amber.	Frolic.	Mermaid.	Speckle.
Broadside.	Frisky.	Marble.	Speedy.
Brilliant.	Fairy.	Moppet.	Spunky.
Bounty.	Fancy.	Noole.	Shoddy.
Buxom.	Favorite.	Nimble.	Stately.
Busybody.	Fayaway.	Nettle.	Thrifty.
Buttercup.	Faithful.	Nosegay.	Trusty.
Blossom.	Fearless.	Poorwill.	Tally.
Blonde.	Ginger.	Paragon.	Tiptoe.
Brunette.	Gentle.	Puzzle.	Tardy.
Bramble.	Grimble.	Pansy.	Twinkle.
Clover.	Greedy.	Pearly.	Tidy.
Clipper.	Gossip.	Pepper.	Tousle.
Chestnut.	Grundy.	Princess.	Topknot.
Cherry.	Gipsy.	Prosby.	Trixy.
Cosy.	Golden.	Prude.	Topsy.
Comfort.	Graceful.	Plucky.	Turvy.
Clever.	Garnet.	Peggothy.	Uppercrust.
Caper.	Gazelle.	Peri.	Undine.
Creamy.	Homespun.	Queen.	Venus.
Coquet.	Huntress.	Quickstep.	Vesta.
Dainty.	Hasty.	Ramble.	Vixen.
Dapple.	Jewel.	Russett.	Velvet.
Dally.	June.	Ribbons.	Wonder.
Dimple.	Jolly.	Ruby.	Wayward.
Duchess.	Laurel.	Rustic.	Wrinkle.
Empress.	Leader.	Senorita.	Witch.
Ebony.	Lady.	Starlight.	

Then it was suggested that the unlucky steers and lords of the herd were kept on a very short allowance of names, and "Billy," "Broad" and "Lord Byron," are about worn out. So here is a list that may be enlarged by any farmer boy who tends the lowing cattle and calls each by his name.

Ajax.	Druid.	Magnet.	Romanoff.
Arab.	Gulliver.	Mogul.	Ranger.
Albino.	Grandee.	Minstrel.	Sagamore.
Adonis.	Gladiator.	Monarch.	Sampson.
Buffalo.	Hector.	Nestor.	Sinbad.
Baritone.	Hero.	Nimrod.	Sultan.
Boanerges.	Hercules.	Nickleby.	Sancho Panza.
Bunker.	Hernut.	Pickwick.	Tammany.
Bludso.	Jupiter.	Patriarch.	Templar.
Cardinal.	Jubilee.	Pathfinder.	Tornado.
Cavalier.	Junbo.	Pontif.	Taurus.
Chieftain.	Lucifer.	Pilgrim.	Troubadour.
Captain.	Lawless.	Pheenix.	Wanderer.
Dominic.	Monte Cristo.	Paladin.	Warrior.
Domby.	Monitor.	Pilot.	Warder.
Dauphin.	Midnight.	Rajah.	

FARMERS' BOYS.—Dr. J. V. C. Smith read an interesting paper recently before the American Farmers' Club, of New York, in which he said: It strongly recommended farmers to give their sons workshops and carpenters' tools in order to keep them fully occupied during the inclement season. The Doctor advocated the cultivation of music, language and other refining requirements, inasmuch as most of our leading men had sprung from farmers' boys. He knew a Boston watchmaker who through his industry had risen to eminence, and he had frequently said to the Doctor: "If my father had but given me a few cents when a boy to buy tools with it would have saved me many years' toil and hundreds of dollars."

Feeding Cattle with Hogs.

We have received the following communication which, though not intended for publication, we deem of so much importance, that we assume the responsibility of giving it:

EDITORS *RURAL PRESS*:—Some weeks since I read in the *Sacramento Union* an extract from your paper giving an account of a disease, which had made its appearance among certain cattle in the county of Santa Cruz, which disease was supposed to have been caused by cattle and hogs feeding together.

About that time, not heeding the warning conveyed by your article, I commenced feeding about 100 head of hogs and 50 cows and heifers, running together in one field on squash. A hog would be eating a piece of squash, when a cow would drive the hog from its food, and partake of the same piece. In a few days some of the cows were taken with precisely the same symptoms as those enumerated by your Santa Cruz correspondent, and although we at once separated the cattle from the hogs, I lost sixteen of the former before the disease disappeared. This disease our neighbors call the "Mad Itch."

I sent portions of some of the dead animals to Sacramento for microscopic examination, and give you the result in the enclosed letter; whether the animalculæ therein mentioned are allied to trichinae, as intimated by the Philadelphia Veterinary surgeon, is a question.

Although every dog in the neighborhood gorged himself on the carcasses of the dead animals, not one of the former have so far suffered any injury.

It seems strange that not one of my neighbors, conversant with the facts above stated, is willing to believe that feeding cattle and hogs together will be productive of any ill effects. For my part I am fully satisfied of it.

I do not send this for publication, but that you may, if you see fit, make mention of my experience, and that stock raisers may take due warning. Very respectfully, yours,

W. R. GRIMSHAW.

DAYLOR'S RANCH, SACRAMENTO CO., December 1st. 1872.

The Letter Alluded To.

SACRAMENTO, November 22d, 1872.

W. R. GRIMSHAW.—*Dear Sir:* Have not been able to see the gentleman to whom I gave the piece of cow's muscle you sent, till this noon. He says that he and another examined it with a microscope of 500 power, until 12 o'clock at night. They found multitudes of what they term *Cysticercus Cellulose*. Looking in Chambers' *Cyclopædia*, I find that these are most probably the embryos of the tape worm. Chambers says that they enter through the mouth, the stomach and eat through this into some of the veins or arteries where they begin to propagate. In the state in which they exist in the cow, pig, hare and other animals they are incapable of propagating, but when they enter the stomach of some animal different from that in which they are born, they then undergo a change, and possess in each cyst a male and female organism, and multiply very rapidly. He says that it is dangerous to handle the flesh of any animal, in whose tissues this *Cysticercus* may be, as if but one enter the mouth of a human it is likely to give trouble. The sac in which they are contained, or rather of which they are composed, and which constitutes the animalculæ, possesses hooks by which it moves itself, and its instinct at once prompts it to eat through the stomach, and once in the blood, bursting, gives it a new life. From its small size it passes through the stomach without causing great, or, perhaps, any inconvenience.

Hoping this may prove interesting to you, I remain, yours, etc. T. W. MADELEY.

NEW STYLE OF MILK PANS.—The Jeffersonian, of West Chester, Chester Co., Pa., describes some extraordinary milk pans lately made at that place for the dairy of Enos Bernard. "They each measured 12 feet in length and 4 feet in width, and were about 6 inches in depth. They were double-bottomed, with a vacuum of about one inch between, which space was divided into four apartments by partitions running lengthwise, and are so constructed to allow water to pass up and down the length of the pan, thus keeping the milk cool or warm, at the option of those having it in charge. The four pans had capacity sufficient for containing the milk of one hundred cows, which number we understand Mr. Bernard keeps. It is said by those who have tried this new kind of pan, that a greater amount of cream is obtained from the same quantity of milk, besides obviating considerable trouble and labor. When the cream is skimmed from the surface the milk is drawn off at the bottom of the pan into buckets, or whatever other vessel is selected."

VALUE OF BARN-YARD MANURE.—The tobacco growers of the Connecticut valley are beginning to learn the value of barn-yard manure. Instead of paying fifty cents per load, as was formerly the rule, these farmers are now glad to pay ten to twelve dollars per cord. In consequence of the demand, large quantities of stable manure are shipped thither from the states surrounding Connecticut. If every farmer knew the worth of stable manure he would see that his own farm would pay him higher prices for it than could be afforded by the owner of any other farm. "A hint to the wise is sufficient."

Kill the New Industry.

When it was first proposed to introduce sugar making from beets, in California, it was favored, not only by those who wished to see the large amounts annually expended for foreign sugars, kept at home; but by those who were engaged in refining crude or raw sugars and supplying our people with the refined article, believing that the beet sugaries would be a source from whence they might derive raw sugars for the refinery.

But as soon as it was ascertained that beet sugaries were also the refineries of their own sugars, and even of raw sugars obtained from abroad during the season when the sugaries and sugar making are at rest, the whole matter of encouraging the beet sugar industry assumed a new phase; for it was evident that with their extended introduction amongst us, the occupations of the refinery exclusively, would be greatly lessened.

Hence we see the anomalous condition of things now existing. Two beet sugaries in successful operation, turning out the best quality of sugar known to the markets as granulated sugar, and supplying a large quantity daily, and lessening in a corresponding ratio the quantity required formerly from the refineries. And what do these refineries do, but put down the price of granulated sugar from two to three cents a pound below a fair value, and below what the same qualities of sugars are worth in New York.

Possibly the refineries backed by San Francisco capital may demolish this new industry, or make its working unprofitable, and having done so, put up prices to the old figures or above all former precedent, just to show to consumers the power of speculative capital; as though California had not yet felt its grinding influence sufficiently for all practical purposes.

California Shad.

Those interested in the subject of fish culture will be pleased to know that the effort to stock our rivers with shad has attained the gratifying beginning of success. In June, 1871, the State Commissioner placed in the Upper Sacramento a large number of shad, procured of Seth Green, of New York. It was well known that these fish would migrate to the sea in the autumn, and also known that when old enough to spawn would return to fresh water, but it was not known as to whether they would return prior to that time, or whether the migratory instinct was founded solely on the necessities of spawning. The fish were placed in the river with but slight expectation of seeing any result of the effort for three years at least, at which age they first spawn. Australia planted her waters seven consecutive years before a single shad was caught therein, but the effort in California was destined to bear early fruit. Seth Green, who under the direction of the commission imported the fish offered a reward of \$50 for the first shad caught in the river. It now appears that the reward has been earned, though not yet claimed. Last summer two Indians caught in their traps two fish of a species wholly new to them. They were caught in the upper Sacramento, about four miles from its confluence with Pitt river. The Indians, not a little surprised at the capture of the funny strangers, and having never met their kind before, took them to Mr. Elmore, who resides on the river at that point. Mr. Elmore, suspecting the truth, took them to his neighbor Hovey, who having resided on shad streams at the East, was competent to expert the case, and who at once pronounced them genuine shad. The Commissioners regard the story of this capture as wholly reliable, and feel safe in declaring the effort to stock the river with this valuable species of the funny tribe as successful. Apropos of this it may be stated that the Commissioners have recently placed ten thousand trout in the South Yuba, near the headwaters of that stream; also, a number of speckled trout in the north fork of the American. Somebody claiming to be authority in the matter, has declared that an acre of water is equal to an acre of land in producing food to sustain human life. If this be true, fish-culture is worthy the attention it is receiving.—*Sacramento Record*.

PLEASED WITH THE RURAL.—We receive the following from Oak Shade Nurseries, Yolo Co., Cal. **EDITORS RURAL PRESS:**—Please change my paper from E. Webb, Watsonville, Santa Cruz Co. Cal., to Wm. Webb, Sterling, Blue Earth Co., Minnesota.

Your paper is taken in this establishment, read with interest and pleasure, and carefully filed and preserved for future reference.

I want my brother to see it for I feel pretty sure it will help materially in deciding him to make this delightful country his home.

EDWARD WEBB.

Another, of our many new subscribers, who are sound on the RURAL question, says:—

I am well pleased with the RURAL, find it full of good reading, and desirable information.

GEO. D. BARRON.

Wynema, Dec. 3d, 1872.

AGRICULTURAL NOTES.

KERN.

Courier Nov. 30: We were shown by Mr. P. A. STINE, a few days since, a number of samples of cotton grown by him; the present season, on different varieties of soil, comprising about all that are found in the alluvial portion of the Great Valley. They were all good, although differing somewhat in quality. But the best sample, decidedly, were grown on a piece of ground so strongly impregnated with alkali as to be unproductive for ordinary crops. Apart from the fact of the staple being longer and finer, Mr. STINE mentions the no less important one, that it matured much sooner and a greater number of bolls to the stalk than that planted in what is considered our best soil.

Our sheep men also are beginning to realize that they can enlarge the area of their pasture lands by well-boring, and thus render available large tracts hitherto useless, while affording excellent grazing, for want of water. We expect, from present indications, at no distant day, to see the area of our grazing lands, and in consequence, our flocks and herds doubled, by this obvious process that hitherto seems to have been entirely unthought of by our stock men. Many of the finest stock ranges in the county are without water, and these have been looked upon as in a great measure worthless. Nature was expected to furnish everything requisite; human industry, nothing. We are glad to see this idea passing away.

NAPA.

Reporter, December 7: NAPA VALLEY WINE COMPANY.—A joint stock concern, to be known as the Napa Valley Wine Company was formed in this city on Wednesday, December 4th. The objects of the concern are to introduce thoroughly Napa wines into the Eastern markets; and to place the business of wine making on a more firm and certain basis. The capital stock is placed at \$40,000, divided into shares of \$100. The time of duration was fixed at 50 years. The first Board of Trustees are Charles Krug, M. G. Ritchie, and Geo. Fagg. The officers are Charles Krug, President; Jacob Berringer, Secretary; M. G. Ritchie, Treasurer. Those are all experienced wine men, and the interest they are taking in this matter augurs success for it. We shall expect good results from it.

FROM INDIANA.—A pair of the finest turkeys we ever saw, arrived from Indiana, on the evening of the 5th, for Col. M. Eyer, who, about a year ago purchased the Sam Cook farm, above the Trancas on the east side of the river. These turkeys left Ogden on the 3d, and look as though their ride had not injured them, if they did lose three pounds on the transit. Their united weight is 86 pounds.

There have been a few experiments at beet sugar making in the State, and we believe wherever properly tried they have proved eminently successful. If any place in the State is adapted for such a manufactory, it is Napa. Our soil is nowhere excelled, and we lack only the capital and enterprise, not only to embark in the concern but to make it a perfect success.

Then, it seems that the impression is very general among large masses that our grains being so dry that they will not bear transportation in bulk, and that we must continue, as of yore, for an indefinite period, to sack our grain. Experiments have been made with jute, and it is well established that it can be raised here to perfection. What hinders our people from devoting a portion of the soil to the raising of this plant, and the establishment of manufactories for making not only our own bagging, and such articles, but also to sell to others? Doubtless nothing but lack of capital or business enterprise.

Again, Mr. Baxter and others, by their experiments in sericulture have placed that enterprise beyond the peradventure of failure. The mulberry grows as finely as could be desired, and the worms, with proper care, are healthy and do well. We believe that at no very distant day sericulture will be one of our main resources. If more would devote portions of their land to this industry, it would build up a new business in our midst, and thus bring to us additional capital and give additional employment to labor.

The St. Louis cor. of the *Reporter* says: Already through the influence of such papers as have been willing to do justice to California, the aged and the invalid are going in no small numbers to spend the winter beneath your sunny skies—and the day is not far distant, when your State and its climatic advantages shall become better known, and these people shall visit you by thousands. So many of them are now becoming aware of this fact, that they can for so small an expense escape the freezing winters and live amid never fading flowers, that you will shortly have to enlarge your hotels, and find a regular profitable and settled business in providing homes for our Eastern friends.

While St. Louis realizes the fact that her central position, her immense iron and coal mines, her advantages in manufactories, and in the great variety of things that combine to assure her greatness—she does acknowledge the superiority of the climate of California, and is anxious to make closer connection with her, than has heretofore existed.

I should like to suggest, if you will allow me the privilege, that you have it in your power, to greatly aid this, in the keeping of the fact of your ability to grow fine grapes, that your hill lands are best for this purpose, and are hardly commended to be occupied—tell them frequent-

ly what can be done and is being done by such energetic men as Mr. G. S. Burrage of the Vine Cliffs of your county, who has a place in the hills that I value above any grain land you possess—which I am sure will pay the county in a short time, a greater tax, by being the more valuable.

In the few days that I am back in Napa county, I find men trying to grow grain on land that is not adapted to it, and will have hard work to make a living, whereas, they would make a fortune with the same labor in growing vines—others are doing it and in time they will be forced to it.

SAN DIEGO.

World, Nov. 26: ANOTHER WHOPPING GRIZZLY.—Grizzlies are rampant in San Diego county. It is only the other day that we reported the shooting of a mammoth bear of that species on the Santa Margarita ranch. Yesterday we received the details of the killing of another very nearly, if not quite as large, on the Cuyamaca. Mr. Gerety put in an appearance yesterday from the Cuyamacas, and gave us the details of the slaying of a bear remarkable for his size and beauty. The grizzly was an old fellow. For the last seven or eight years he had been the terror of the whole grazing region around about the Cuyamacas, and the graziers thereabout laid for him, but always ineffectually. The other day Mr. Bruin went for a fine Merino ram belonging to Mr. Gerety, and made a meal of a portion of his carcass. The next day he returned and killed a lamb, not very far from the same place and devoured a part of it. Mr. Gerety sent for an old bear hunter from Texas, and the two put their wits together, and, as the event proved, they were too many for Bruin. They drew the two carcasses up side by side, and planted two guns so placed that when the bear displaced the meat both would be simultaneously discharged. Sure enough Bruin did come back for a second refection from his victims of the day before, sank his teeth in the tempting morsel and received the contents of both guns. He was laid out dead, and was so found by Mr. Gerety in the morning. One of the balls entered his head and the other his body. He proved to be an immense fellow, weighing probably twelve or thirteen hundred pounds. A four-horse team, owing to the unevenness of the mountain road, had to be employed to bring his carcass to Mr. Gerety's house. He will no longer make havoc, as he has done for the last seven or eight years, amongst the best stock of the Cuyamaca Valley. For the ram killed by Bruin Mr. Gerety had paid \$150, and would not have taken \$250 for him. This makes the fourth Merino ram that gentlemen has lost during the last year.

SAN JOAQUIN.

Independent Dec. 3.—The supply of fuel in this State is being rapidly exhausted, and the time will soon come when it will command a still more exorbitant price than at present. The future supply must principally come from the Sierra Nevada range, and it is therefore very necessary that steps should be taken to preserve those forests from the rapid destruction to which they are now being subjected. In the mining counties much valuable timber has been ruthlessly destroyed, and in regions that were once well wooded the trees have been cut down and much of the timber left to rot on the ground or be destroyed by fire. This wanton destruction is still going on, and the waste of fuel is incalculable. Thousands of acres of Government land are each year despoiled of their forests, and although there is a law to prevent the cutting of timber upon public land, it remains as a dead letter and is not strictly enforced. While it may not be best to provide for the sale of these lands in large tracts to speculators, it is very probable that were these lands in the hands of private parties, steps would be taken to prevent the present waste and destruction of property.

The bill introduced by Mr. Sargent at the last session of Congress, if amended so as to restrict each purchaser to a reasonable number of acres, would without doubt, be acceptable; but if such a law is not passed the Government should strictly enforce the law prohibiting the cutting of timber on the public lands.

PLOWING.—On the line of the railroad from Livermore to Stockton, farmers are busy preparing the ground for the next crop, plowing having commenced in earnest as the teams and gang plows, everywhere visible, denote. Under the favorable circumstances the crop which the valley will produce next year will exceed all former ones, as the success of the past season has inspired all with renewed confidence and enterprise. It is to be hoped that the producers will also see the necessity of providing for themselves other and cheaper lines of transportation for their grain to tide water and a market.

TULARE.

Cor. Kern Courier, Nov. 28: The town of Tulare, which has existed for some time—on paper—is about to have a real existence. John F. Kessing & Co., of San Francisco, have opened quite a large store and restaurant in a building erected by them for this purpose. Irwin & Edwards have built a saloon. There is a dwelling house going up now. Two more stores and two stables are being talked of, and will perhaps soon be built. There is to be a big hotel built by the Railroad Company, or by their assistance, and a line of stages will run from Tulare to Porterville. This will reduce the distance from Porterville to the railroad at least fifteen miles, and will divert the travel from Visalia and Goshen to this place. Mr. Kessing is authorized by the Railroad Company

to sell town lots and, although they have not been advertised and no effort made to sell, the demand made for favorable locations is quite brisk. About thirty lots have already been sold at prices ranging from \$375 to \$500, one-third of the purchase money to be paid down, one-third in six months, and the balance in one year.

Many new settlers are coming in and locating on Government lands. The country towards the Lakes seem to possess the greatest attraction for settlers now.

The weather for a month past has been for this latitude, extremely cold, pumps freeze up every night and water freezes in doors. Fortunately for their owners, cattle and horses are in good condition, or this long continued "cold snap" would render a no-fence law almost unnecessary. There is an abundance of dry feed, and stock will do well enough until it rains. Then if it continues as cold as it is now, stock will suffer.

The rain is holding off late, but that is considered rather a favorable omen as indicating a wet winter.

OREGON.

A Washington county correspondent of the *Oregonian*, date of Nov. 30th, says: The present true weather is being improved by the farmers of Washington county. The prospect is that a large number of them will get in their usual number of acres. The low price of grain, together with the high price for shipping, has forced many to draw their grain to market on their wagons. This has thrown them behind in seeding, and had it not been for the present propitious season, the county would fall short of its usual acreage materially. The farmers have labored hard and patiently, waiting for the time to come when facilities would reach them that would lift the burthen of expensive shipment from their shoulders, and place the season for seeding at their disposal. But until farmers can ship their grain for less than they can afford to haul it, nothing better can be expected, than that the farm will be deprived of the seasonal labor which is so necessary to its production. In view of these things, there is a strong probability that the farmers will turn their attention more to the raising of stock, as there is less expense attached to marketing it than to the moving of grain. The men who have heretofore tilled the soil, have watched with envious eye the prosperity of the stock man, and have only toiled on in hopes that a stability in the grain market would be reached. But they find themselves in as bad a condition to-day, as they were before the dawn of the "glorious days of railroading," which was to fill our harbors with ships from every port, eager to carry away all that farmers could produce, at the lowest charges. Perhaps, the present condition of things cannot be helped; but there is one thing certain, and that is, unless the managers of our shipping interests can so arrange it, that a cheaper and better means of shipment will be placed at the disposal of the farmers of Oregon, they will in a few years find a sad falling off in the amount of grain to be shipped.

If any one doubts this, let him take a trip through the farming districts, and talk with the farmers on this subject. The universal remark is, "What is the good of our climate and productive soil? It is only once in three years that we can get anything for what we raise." Perhaps this is more keenly felt this year, on account of the anticipations that farmers had indulged in regard to a market. With a country so productive as ours; with its salubrious climate and its never-failing crops; with its great bodies of tillable land, a shipping ought to be established, that at once should be independent and lucrative.

Poultry Raising.

EDITORS PRESS:—I take a great interest in the "Poultry Notes," published from time to time in your valuable paper, and would like to contribute something to help along the poultry business. Tulare and Fresno counties offer the best facilities for raising fowls on a large scale, there being plenty of Government land here, cheap food, ready access to market, and less disease among chickens than any place I know of, either in California or any of the Atlantic States. Most of the women in this vicinity have from 100 to 600 fowls, all together, and seldom if ever have a diseased one. I have some 200 fowls now and hope to increase to some thousands next year.

Poultry raising does not require a large capital to commence on, but needs application to business and close attention to details, and can be engaged in by women and girls, as well as by men who are not strong enough to do heavy work. I think all who will raise poultry in California can command a good living price for many years to come, and the production of plenty of fresh eggs to take the place of the thousands of dozens of Eastern eggs now in the market, is something very much to be desired, and should receive more attention at the hands of the farmers than it has hitherto been accorded.

Perhaps I could gather interesting facts relative to farming, stock raising, etc., in this vicinity which would be of benefit to your numerous readers, and if so, you are welcome to them.

C. H. PAYSON.

Kingston, Cal., Dec. 7th.

We would be pleased to hear from our correspondent upon any subject connected with stock growing or the agriculture of any part of the State.

AN ITEM about purchasing seeds will appear next week.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Dec. 12.

RECEIPTS.—Receipts of Wheat and Barley for the week has been equal to the average, those of Flour below the average, of Oats very light, of Wine large, and of Potatoes particularly from Coast ports excessive. We summarize: Bay produce, Flour 16,613 quarter sacks, Wheat 211,592 cents comprising 157,787 cents at the city front, and 39,000 cents by rail at Oakland wharf, 10,405 cents of Barley, 2,108 do. of Oats, 9,107 do. of Potatoes, 466 do. of Corn, 1,520 do. of Beans, 53 do. of Peas, 2,473 do. of Bran, 1,581 of Middlings, 82 do. of Mustard seed, 839 do. of Onions, 3,274 Hides, 533 bales of Wool, 328 cents of Pea Nuts, 200 do. of Rye, 54 do. of Canary seed, 189 do. Flaxseed, 185 tons of Salt, 877 tons of Hay, and 81 tons of straw, 16,920 gallons of Wine, and 40 do. of brandy.

From Coast ports we have received 14,085 cents of Wheat, 3,193 do. of Barley, 25,592 do. of Potatoes, 1,239 do. of Corn, 31 do. of Beans, 120 do. of Rye, 6,310 do. of Oats, 1,601 Hides, 120 bales of Wool, 35 pipes of Wine, and 2 pipes of Brandy, besides considerable quantities of other farm produce. The wheat with the exception of 1,674 cents from Santa Cruz has been all from Moss Landing; the barley has arrived from Santa Cruz, Moss Landing and San Diego. Humboldt Bay and Moss Landing have sent us over two-thirds of the Potatoes, the balance being distributed between Santa Cruz, Bodega, Yaquina Bay, Pigeon Point, and Point Arenas, Pigeon Point sends nearly one thousand, Bodega nearly one-third. All the Corn, Wool, Hides, Rye, Wine, Brandy, Salt, and Beans have come from San Diego, while the Oats have come from Humboldt, and Pigeon Point.

WHEAT.—The past week has been one of the most active known, and the market price of all grades has risen with extreme rapidity. It will be remembered that last week we predicted that wheat would reach \$2.00 in three months. We were too slow by a long way, for hardly had our paper reached Stockton when a sale was effected at \$1.87½, and now the first quality of wheat commands in this market \$1.80 to \$2.00, being 22c. advance on last week's prices. The cause of the rise is partly owing to increased demand, partly to a great fall in freight, now not more than 4¢ per ton. There are over 163 vessels bound to this port. Truly, the long-hoped-for reaction has at last set in. The sales reported last week may be summarized as follows: 2,000 scks. Dark Coast, \$1.57½; 5,700 sc. of Dark and Fair Coast at \$1.60; 500 scs. of Dark Coast at \$1.62½; 4,100 sacks of Shipping at \$1.70; 330 sacks of do. at \$1.72½; 2,200 sacks of do. at \$1.75. 400 sacks of do. at \$1.77½; 3,000 sacks of fair Shipping at \$1.70 to \$1.80; 500 sacks of milling at \$1.82½; 800 sacks of shipping at \$1.85, and 10,000 do., at \$1.87½; 10,000 do. at \$1.95, and 11,000 sacks of do. at private rates, probably \$1.90 to \$2.00. Wheat in Liverpool has again fallen, and is now quoted by telegraph at 12s. to 12s. 4d. for average California, and 12s. 6d. to 13s. for Club.

We have had a good week for export; the following cargoes having been sent off; to Liverpool, the "Ranee," with 37,540 cents; the "Lapwing," 23,916 cents; the "Hugo and Otto," 11,336 cents, and the "Dundonald," 18,816 cents; to Queenstown, the "Duke of Argle," 30,221 cents; the "Prussia" with 38,825 cents; the "Sarah Bell," 27,569 cents, and the "Winchester," 32,320 cents; to Cork, the "Zoroya," 12,106 cents; and to Honolulu by the "Dakotah," 69 cents. Total, 232,718 cents, worth \$416,880.

LOUR.—Flour has again advanced this week, the jobbing rates of Extra being now \$5.62@5.75. Large sales have been made for export. The export during the week has aggregated 444 barrels, 420 half sacks, and 6,480 quarter sacks, principally per "Montana," to New York and Central America.

BARLEY.—Sympathizing with the advance in wheat, barley has gone up this week 10c. on the list by city quoted figures. Sales have included 1,200 sacks of Coast Feed at \$1.30 to \$1.35, 250 sacks of Dark Coast at \$1.32½, 3,000 sacks of Coast at \$1.32½ to \$1.35, 250 do. at \$1.35, 1,500 sacks fair to choice \$1.35 to \$1.45, 4,300 sacks of Bay Feed and Brewing at \$1.40, 1,000 sacks of Bay Feed at \$1.45, 400 sacks of Choice Brewing at \$1.50, payable Dec. 28th, and 80 sacks of Choice Brewing at \$1.55.

OATS.—Oats have again advanced. We note sales of 100 sacks of Fair at \$2.10, 200 do. of Choice at \$2.20, 300 do. of Choice at \$2.25, and 800 sacks of Oregon, private.

POTATOES.—Potatoes, owing to the excessively large receipts, have weakened considerably this week. We note sales of Salinas 250 bags at \$1.27½, Humboldt, 1,500 bags at \$1.20 to \$1.40, Monterey, 1,000 bags at \$1.10 to \$1.20, Pt. Arena, 1,700 bags, some at \$1.25, others private; Bodega, 500 bags at \$1.12½, Coffee Cove, 200 bags at 75c. and 500 bags of Sweet at 95c. to \$1.00.

CORN.—Is \$1.25@1.30 per 100 lbs.
CORNMEAL.—Is quotable at \$1.75@2.00 per 100 lbs. from the mill.

BUCKWHEAT.—Is quiet at \$2.00@2.25 per 100 lbs.

RYE.—Is quiet at \$2.00@2.25 per 100 lbs.
STRAW.—Quotable at \$8.00@9.00 per ton for cargo lots.

BRAN.—Price has advanced to \$27.50 per ton from the mill.

MIDDINGS.—For feed, are selling at \$32.50 per ton from mill.

OIL CAKE MEAL.—Is steady at \$35 per ton from the mill.

HAY.—Demand good but receipts light. Quotable at close at \$15@22.00 ordinary to choice.

HONEY.—Best Los Angeles and San Diego sells at 20¢@22½¢; other kinds 10¢@15¢ in comb; strained, 10¢@15¢ per lb.

BEEWAX.—Quiet at 33¢@35¢ per lb.

ONIONS.—Quotable at \$3.00@3.50 per 100 lbs. for choice.

WOOL.—Market continues quiet. Sales in this city of 200,000 lbs. Fall at 16¢@22c. for fair to choice grades. Extra Fall, 24c.; Burry, 12½¢@15c.

TALLOW.—Good quality of Cal. 8c.
SEEDS.—Flax 3c.; Canary, 3½¢@5c. Mustard, 1½¢. for white, and 2½¢. per lb. for brown.

PROVISIONS.—Following are jobbing quotations: California Bacon 13¢@15¢ per lb.; Eastern do. 12½¢@13¢ for heavy and 14¢@15¢ for sugar-cured Breakfast; California Hams 15½¢; Eastern do. 18¢@19¢; California Smoked Beef, 12½¢@13½¢ per lb.

BEANS.—The following are jobbing rates: Pea \$3.50@3.60; Small White \$3.50@3.60; \$3.50; large \$3.50@3.75; Bayo, Small Butter, \$3.25@3.50; Pink, \$3.75 per ctl.

NUTS.—California Almonds, 8¢@10c. for hard and 18¢@25¢ for soft shell; Peanuts, 5¢ Pecan, 20¢ per lb.; Hickory, 12c.; Brazil, 16c. Chili Walnuts, 12½¢; French Almonds, 25¢@30c.; Princess Almonds, 35¢@40c.; Cocoanuts, \$10.00@12.00 per 100.

HOPS.—California are dull and nominal at 30¢@35¢ per lb.

FRESH MEAT.—We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 8¢@8½¢ per lb.; do. 2d quality 6¢@7¢ per lb.; do. 3d do. 4¢@5c.

VEAL.—Quotable at 7¢@11c.

LAMB.—Scarce at 10c.

MUTTON.—Quiet at 7¢@8c. per lb.

PORK.—Undressed grain-fed is quotable at 5½¢@6c.; dressed, grain-fed, 8¢@8½¢ per lb.

POULTRY.—Live Turkeys, 18¢@19c. per lb.; Hens \$7.50@8.50; Roosters, \$7.00@8.00 per dozen; Spring Chickens, \$4.50@5.00; Ducks, tame, \$15.00@12.00 per doz.; Geese, tame, \$16½¢@19½¢ per dozen.

WILD GAME.—Quail, 1.75¢@2.00; Hare, \$4.00; Rabbits, \$1.50; Larks, Doves, Plover and Curlew, 50c. @ 75c.; Mallard Ducks, \$3.00@4.00; Teal, \$1.50@1.75; English Snipe, \$1.50@2.00; small, 50c. @ 75c.; Venison, 7c. @ 9c. per lb.; Oregon Pheasants, \$4. @ \$5. per doz.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is a little more plentiful than it has been lately, and now sells at 30¢@57½¢ per lb. Inferior and ordinary roll is dull at 30¢@40c.; choice at 55¢@57½¢. New firkin is quotable at 25¢@35c.; pickled, 32½¢@37½¢; New York, 30¢@32½¢.

CHEESE.—New California, 12¢@16c; Eastern at 14¢@16c. per lb.

EGGS.—California fresh, are sold at 55c.; Oregon, 48c.; Eastern, 25¢@30¢ per doz.

LARD.—California 11¢@13¢; Eastern in cases 13¢@13½¢; do in tcs. 11¢@12c.; in kegs, 12¢@12½¢ per lb.

HIDES.—Sales for the week embrace 1,550 Cal. dry at 17½¢@18½¢, and 1,670 salted at 8¢@9c.

FRUIT MARKET.

There are neither plums nor quinces in the market. The supply of apples and pears is good. Some grapes are yet arriving from Sonoma. Sales of a couple of boxes have been made to ship to China.

Tahiti, Or. per 100	66 00	Pomegranates, 100	60 00
Limes, 100	12 00	Grapes, Mission	3 00
Apple, 100	4 00	Rose of Peru	— 00
Malaga, 100	10 00	Black Hamburg	— 00
Bananas, 100	4 00	Black Prince	— 00
Pineapples, 100	6 00	Muscad of Al'	8 12½
Apples, eat g, 100	2 00	Flame Tokay	7 10
Oranges, 100	1 00	Black Morocco	8 12½
Pears, 100	1 00	Wine Grapes	14 12½
Cooking, 100	25 00		

DRIED FRUIT.

Apples, 100	6 12½	Pitted, do 100	14 22
Pears, 100	8 12½	Raisins, 100	6 12½
Peaches, 100	8 12½	Black Figs, 100	7 12½
Apricots, 100	8 12½	White, do 100	15 20
Plums, 100	6 10		

VEGETABLES.

Cabbage, 100	1 12½	Artichokes, 100	4 00
Garlic, 100	5 00	Tomatoes, river	2 00
Green Peas, 100	5 00	Surin Beans, 100	8 10
Green Corn, 100	— 00	Lima Beans, 100	— 00
Marrowfat Squash	— 00	Peppers, 100	— 00
per ton	10 00	Okra, 100	6 00

GENERAL MERCHANDISE.

Business during the week has been lively. The imports have been large and varied, including cargoes of Coal from Philadelphia and Australia; cargoes of Sugar from China and Java; a cargo of French Wines, Liquors, Etc., from Bordeaux; a cargo of Drugs and Pig Iron, from Newcastle, England, and two cargoes of Tea, Sugar, Coffee, Rice, Etc., from China.

Besides large sales of Candles, Fish, Case Goods, Etc., we note one of 150 pipes of California Pure Spirits at \$1.05; 30 barrels new crop Zante Currants at 11½¢; 2,200 tons of Coos Bay and Australian Coal at \$12.00; 150 cs. of Hawaiian Syrup at 9c. and 1,000 pkgs. of Eastern Starch at 9c. to 10c. Bags are firmer, and Gasoline has advanced to 40c.

The following are the current rates for some of the principal articles of merchandise:—

AGRICULTURAL IMPLEMENTS.—Stocks are in good supply and prices unchanged.

BOOTS AND SHOES.—There continues a

good demand for both California and Eastern manufacture at unchanged rates.

BAGS AND BAGGING.—English Standard Wheat bags, hand sewed, are jobbing at 15½¢; Flour sacks 8½¢@9½¢ for qrs. and 13½¢@15½¢ for hlfs. Standard Gunnies 17½¢; Wool 67½¢@75c.; Barley sacks 16c. @ 18c.; Hessians, 40-inch goods, 12c. per yard.

BUILDING AND FENCING MATERIALS.

Dealers pay for cargoes of Oregon as follows: Rough \$19@20; do. surfaced at \$28@30; Spruce \$17@18. Wholesale rates for various descriptions are as follows: Laths at \$3.50; Sugar Pine \$35@45; Cedar \$22.50@32.50, and \$42.50, for three different qualities.

Following are the cargo prices established by the Redwood Lumber Dealers' Association:

Rough, 100	20 00	Beaded floor, ref. M.	22 50
Rough refuse, 100	16 00	Half-inch Siding, M.	22 50
Rough clear, 100	32 50	Half-inch Siding r. M.	16 00
Rough clear refuse, M	22 50	Half-inch Surfaced, M	25 00
Rustic, 100	35 00	Half-inch Surf. r. M.	18 00
Rustic refuse, 100	24 00	Half-inch Batena, M.	22 50
Surfaced, 100	32 50	Pickets, rough, M.	14 00
Surfaced refuse, M	22 50	Pickets, rough, p'ntd.	16 00
Flooring, 100	30 00	Pickets, fancy, p'ntd.	2 50
Flooring refuse, M	20 00	Shingles, 100	3 00
Beaded flooring, 100	32 50		

The last sale of retail prices adopted by the Lumber Dealers' Exchange is as follows:

Rough, 100	25 00	Flooring, 2d qual'y, M	30 00
Flooring and Step, M	37 50	Laths, 100	3 50
Flooring, narrow, 100	40 00	Furring, 100	1c

REDWOOD.

Rough, 100	25 00	Tongued & Grooved,	
Rough refuse, 100	20 00	surfaced, 100	40 00
Rough Pickets, 100	18 00	Do do refuse	27 50
Rough Pickets, p'd.	20 00	Half-inch surfaced, M	40 00
Fancy Pickets, 100	30 00	Rustic 100	42 50
Siding, 100	27 50	Battens 100	1c
		Shingles 100	3 50

Sugar Pine is jobbing at \$60@65 for clear, \$45@50 for second quality, and \$25@30 for third quality.

COFFEE.—Costa Rica 19¢@19½¢; Guatemala,

18c. Java 22¢@23c; Manila, 18½¢; Rio 19½¢@20¢; Ground Coffee in cases 30c.; Chicory, 10c.

SPICES.—Allspice 14¢@15c. Cloves, 23c. Cassia 35¢@36c. Nutmegs \$1.00@1.10. Whole

Pepper 19¢@20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard

\$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod new, in bundles at 7c.; Salmon in bbls. \$9.00, hf do. \$4.50@5.00; Case Salmon, \$3.75 for 2½-lb. cans, \$3.50 for 2-lb. cans, and \$2.25 for 1-lb. cans; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85c per box; Mackerel, No. 1 hf bbls, \$8.00@9.00; extra, \$10.00; in kits No. 1 \$2.00@2.25; Mess, \$3.00; Extra mess, \$4.00.

NAILS.—Quotable at \$6.00@9.00 for assorted sizes.

PAINTS.—Standard White Lead 10¢@12½¢; Whiting, 2½¢; Chalk 2½¢; Paris White 3c.; Ochre, 3½¢; Venetian Red, 3c.; Red lead, 11½¢; Litharge, 11c. per lb.

RICE.—Sales of China No. 1 at 5½¢@6½¢. and No. 2 at 5¢@5½¢ per lb.; Japan, 5½¢@5½¢; Patna, 5½¢@7c.; Hawaiian, 8¢@9c. per lb. for choice.

SOAP.—The prices for local brands are 5¢@10c. and Castile, 10¢@12c. per lb.

SUGAR.—We quote Cal. Cube at 12½¢; Circle A Crushed, 12c. and Granulated 11½¢; Golden C. 10c; Extra Golden C. 10½¢; Hawaiian 7½¢@9½¢, as extremes per lb.

SYRUP.—Prices may be given as follows: 32½¢ in bbls, 35c in hf bbls, and 40c in kegs.

SALT.—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$19@20.

TEA.—We quote as follows for bulk descriptions: Oolong—Canton, 19¢@25c; Amoy, 28¢@50c; Formosa, 40¢@90c; Imperial—Canton, 25¢@35c; Pingsuey, 50¢@75c; Moyune, 60¢@1.00. Gunpowder—Canton, 30¢@42½¢; Pingsuey, 50¢@90c; Moyune, 60¢@1.30. Young Hyson—Canton, 30¢@40c; Pingsuey, 40¢@70c; Moyune, 65¢@1. Japan—Half chests, bulk, 30¢@75c; lacquered bxs, 4½ and 5 lbs each, 45¢@67c; same 3-lbs, 45¢@90c; plain 4½-lb bxs, 35¢@65c; 1-lb and ½-lb papers, 30¢@55c per lb.

Leather Market Report.

[Reported for the Press by Dolliver & Co.]

SAN FRANCISCO, Thursday, Dec. 12, 1872.

French skins continue firm. The fire in Boston has given the market an upward tendency, and dealers are holding both Foreign and Domestic skins at full prices. City Tanned Leather, 100

Country Leather, 100	25 00
Stockton Leather, 100	25 00

Jodot, 8 Kil. per doz	50 00
Jodot, 11 to 19 Kil. per doz.	55 00
Jodot, second choice, 11 to 15 Kil. per doz.	55 00
Lemoine, 16 to 18 Kil. per doz.	75 00
Levin, 12 and 13 Kil. per doz.	65 00
Cornellian, 16 to 19 Kil. per doz.	65 00
Cornellian, 12 to 14 Kil. per doz.	55 00
Ogerau Calif. per doz.	54 00
Simon, 18 Kil. per doz.	60 00
Simon, 20 Kil. per doz.	65 00
Simon, 24 Kil. per doz.	72 00
Robert Calif. 7 and 8 Kil.	35 00
French Kips, 100	1 10
California Kip, 100	55 00
French Sheep, all colors, per doz.	8 00
Eastern Calf for Backs, 100	1 15
Sheep Roans for Topping, all colors, per doz.	9 00
Sheep Roans for Linings, per doz.	5 50
California Russell Sheep Linings, 100	1 75
Good French Calf Boot Legs, per pair	5 25
French Calf Boot Legs, per pair	4 50
Harness Leather, 100	30 00
Fair Bridle Leather, per doz.	48 00
Skirting Leather, 100	34 00
Buff Leather, 100	18 00
Wax Side Leather, 100	20 00
Eastern Wax Leather, 100	25 00

GROCERIES AND PROVISIONS.—Wines and Liquors are shipped to country orders with dispatch, carefully marked and packed, free of extra charge, by B. SARBOROUGH & BRO., 531 Washington street, S. F. This long established firm now import their goods from the four parts of the world, and consequently undersell all other grocers in San Francisco. All orders from the State and coast are promptly attended to. Address B. SARBOROUGH & BRO., Lock Box 1126, San Francisco.

San Francisco Retail Market Rates.

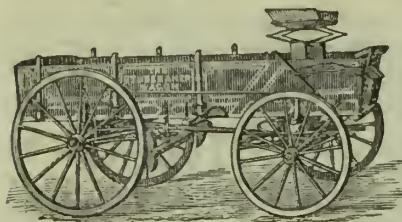
THURSDAY NOON, Dec. 12, 1872.

FRUITS, VEGETABLES, ETC.

Strawberries, on account of frost, not in market for last ten or fifteen days. The principal fruits now in market are apples and pears. Some splendid Bellflowers are to be seen on the stands. A few varieties of grapes, such as Muscat and Black Morocco, are yet in the market. Mulberries, arriving chiefly from Stockton and Sacramento, have made their appearance.

Apples, per lb.	5 00	Celery, per doz.	75 00
Pears, per lb.	5 00	Cucumbers, 100	25 00
Grapes, 100	10 00	Tomatoes, 100	4 00
Apricots, 100	— 00	Green Peas, 100	— 00
Pine Apples, each	75 00	String Beans, 100	— 00
Bananas, per doz.	75 00	Cress, per doz bun	25 00
Cantaloupes, 100	— 00	Dried Herbs, 100</	

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,

They Have no Peer.

IRON AXLE,
THIMBLE SKEIN,
HEADER AND
SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on,
hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS,
BEDS, BRAKES and SEATS, I am better prepared than
ever to furnish

Just the Kinds of Wagons Needed,

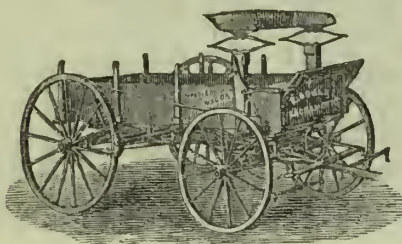
As I make a SPECIALTY of the WAGON TRADE.

The attention of DRIVERS is especially requested.
Send for CIRCULAR and PRICE LIST.

16v3-3m

E. E. AMES, General Agent.

Factory and Depot, 217 and 219 K street, SACRAMENTO.



FIRST PREMIUM AWARDED at the State Fair of
1870; also First Premium at Mechanics' Fair, San Fran-
cisco, 1871; and Silver Medal and First Premium for
best Farm Wagon, and First Premium for the best im-
proved Thimble Skein at State Fair, 1871. Also State
Fair GOLD MEDAL for 1871.

E. SOULE,

ap22-3m

San Quentin, Cal.

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these
Plows, are entitled to preference over any other Plow
in use. They are made of the best material, and every
Plow warranted. They are of light draught, easily
adapted to any depth, and are very easily handled.
They will plow any kind of soil, and leave the ground
in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State
Fair, at the Northern District Fair, at the Upper Sacra-
mento Valley Fair, and the State Agricultural Society
Premium of \$40 for the best Gang Plow, after a fair test
and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,

Took the First Premium over all competitors at the
State Fair, 1871. It furrows 14 in. deep and 24 wide.
This Gang Plow combines durability with cheapness,
being made entirely of iron by experienced workmen, of
the best material. Over three hundred are now in use,
and all have given entire satisfaction.
Manufactured and for sale by the

SWEEPSTAKE PLOW CO.,

At SAN LEANDRO, CAL., under the personal superin-
tendence of the Patentee, F. A. HILL,

And also by most leading Agricultural Dealers in the
State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing
Match in Stockton, in 1870.
This Plow is thoroughly made by practical men who
have been long in the business and know what is re-
quired in the construction of Gang Plows. It is quickly
adjusted. Sufficient play is given so that the tongue will
pass over cradle knolls without changing the working
position of the shares. It is so constructed that the
wheels themselves govern the action of the Plow cor-
rectly. It has various points of superiority, and can be
relied upon as the Best and Most Desirable Gang Plow
in the world. Send for circular to

MATTESON & WILLIAMSON,

Stockton, Cal.

14v2-3m

LINFORTH, KELLOGG & CO.,

Nos. 3 and 5 Front Street.....SAN FRANCISCO.

IMPORTERS AND JOBBERS

— OF —

AMERICAN, ENGLISH AND GENERAL HARDWARE, AND CUTLERY.

Wostenholme's Pocket Cutlery,

Blacksmith and Mining Tools,

Rope, Iron, Steel, Ammunition,

Powder and Fuse,

HAY CUTTERS, CORN SHELLERS, CHURNS AND WOODEN WARE, IRON AND LEAD PIPE, RUBBER
HOSE, BELTING,—RUBBER AND LEATHER.

Sole Agents for

THE IMPROVED "PACIFIC RAILROAD" and "MONITOR" GANG PLOWS.

These Plows are Deep Tillers, and are just what the farmers need. They can be run by a small boy, as the
lifting out of the ground is done by horse instead of hand power. Farmers should examine these Plows before
purchasing.

"WORLD" MOWERS AND REAPERS,

"TORNADO" THRESHERS,

RUMSEY & CO.'S FORCE AND LIFT PUMPS,

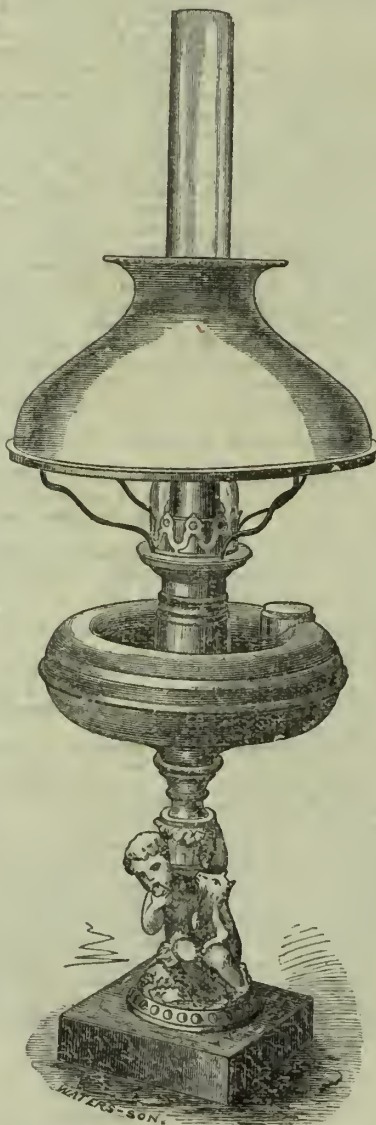
HYDRAULIC RAMS, ETC.

Orders respectfully solicited. Catalogues and prices furnished on application.

18v4-6m

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.



Patented May 30, 1871. Is the Best and Safest Lamp ever
put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be
seen in cut, the outside one (D) intended only for the attach-
ment of the burner, and the inside one (C) to contain oil and
receive the wick. As there is no connection between these
tubes, it will be evident that there is no possibility of commu-
nicating any heat to the oil; and as long as the oil in a Lamp
can be kept perfectly cool, there is, of course, no chance for an
explosion.

2d.—This Lamp is the only one ever invented in which this result
has been secured.

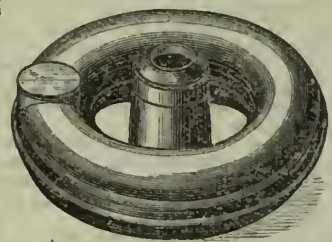
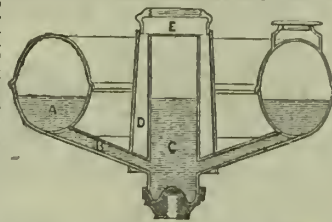
2d.—When the burner is attached to the Lamp it will be
seen that there is no opportu-
nity for the oil
to escape should
the Lamp be
overturned, and
in case any
accident should
occur the worst
consequences
that could en-
sue would be
the breaking of
a chimney or
shade. From
these facts it
will be evident
that those who
adopt this Lamp will secure themselves against the possibility
of fire or explosion arising from the use of kerosene oil.

3d.—The Lamp is strongly and well made, attractive in ap-
pearance, and something entirely new and novel. It will burn
kerosene adapted to any burner. With all of these advantages
it combines cheapness, and from present indications it is des-
tined to become very popular.

4th.—The tube to which the burner is attached (D) is free
from the tube of the oil (C), and a space for air, passing from
the lower end, between the tube of the burner and the tube of
the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a
Lamp. It can-
not do it in this
Lamp, as the
burner is set on
a tube which
contains no oil,
consequently it
cannot make
any gas.

6th.—In case
of accident, the
Lamp falling or
thrown over, by
which many ex-
plosions occur,
is the cause of
the oil rushing
to the flame. In
this Lamp it is
not so; it can
be thrown over and cannot send the oil to the flame; it will run
from it, so there is no danger of catching fire.



This Lamp can be filled from the fount, on the top of
which is a screw.

This Lamp can be attached to any Chandelier or Bracket
made.

State and County Rights for Sale. Agents Wanted.

The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

I. L. MERRELL,

Nos. 10 and 12 Third Street, San Francisco.

14v4-lamp

Ready's Patent Gang Plow.



This Plow was awarded the First Premium and Gold
Medal at the great Plowing Match at the State Fair, 1872.
Fifteen Gangs entered, including the Eureka, American
Chief, Sweepstake, and others of notoriety. It has
Wrought Iron Beams, Iron Wheels, Cast Steel Moulds
and Shears. It is neat, simple, strong and durable, and
warranted to run light, and lifts out of the ground
easier than any other Gang known to the trade. Extras
furnished and warranted to fit.

W. B. READY,

301 J street, SACRAMENTO, Cal.,
Sole Maker and Patentee.

17v4-6m

SPORTSMEN'S EMPORIUM,

No. 609 Clay Street,

Just above Montgomery.....SAN FRANCISCO.

F. SCHOENEMAN,

(Successor to Barton & Rutter.)

JUST RECEIVED, an assortment of the new

Needle Sporting Gun.

Cannot be had anywhere else, as I am the Agent.
Also, fine English, German and American Sporting
Guns, all the latest patterns of RIFLES, and all kinds
of Ammunition. A splendid assortment of

FISHING TACKLE,

And Sporting Apparatus of every description.

Pocket Cutlery of the best makers.

15v4-3m

F. SCHOENEMAN.

IMPROVED CORN HUSKER.



The great extent of the Indian corn crop throughout
the United States, makes of the utmost importance any
invention by which the labor incurred in its production
may be lessened.

According to the census reports, the annual yield of
Indian corn in California, several years since, was
1,000,000 bushels. It is probably twice that amount at
the present time, and the introduction of corn huskers
will be of great advantage to our farmers.

This machine has taken no less than eight first pre-
miums this season, at fairs in the Eastern States. At
the fair at Rochester, N. Y., it was awarded the first
premium of \$10, besides a \$30 premium for the most
useful invention, relating to agriculture, patented dur-
ing the last three years.

The larger machines, for husking from the stalks,
can be conveniently run by any of the ordinary horse-
powers. The machine does its work thoroughly, strip-
ping the husks and silk from every ear and hubbins,
whether it be large or small, hard or soft. The stalks
are delivered in a crushed state and in a much better
condition for fodder than when left solid, and they also
rot quicker in the manure heap. The husks are deliv-
ered in so good condition as to be worth from \$50 to \$70
per ton for industrial purposes in some Eastern places.

An ordinary two-horse power used for thrashing will
drive the machine, and with the hand machine two
men can husk 400 bushels per day.

Address WIESTER & CO.,

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KELLER & CO.,

CORNER 10TH AND K STREETS, SACRAMENTO.

AGENTS FOR

CLAPP'S BRASS-BEARING WAGONS.

And also a superior Iron Axle Wagon.

MERRITT & KELLOGG'S SELF-PROPELLING
THRESHING ENGINES.

John Deer Moline Plow.

Also COLLINS' PLOW (Smith's Patent).

READY'S PREMIUM GANG PLOW.

THE GORHAM BROADCAST SEEDER AND CULTI-
VATOR.

EXCELSIOR MOWER AND REAPER.

17 Please call and examine.

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Merchants and Farmers,

Examine our

HORSE COLLARS.

Adopted by

BEST IN USE.

ALL GRADES.

No complaints.

No repairing.

Don't believe

FOR SALE BY

Manufactured

J. C. JOHNSON & CO.,

104 FRONT STREET,

Dealers in HARNESS, SADDLERY, Leather, etc.

Liberal discount to the Trade.

COPPER RIVETED

Pat. Nov., 1861.

U. S. Army.

18,000 SOLD.

HEAVY & LIGHT.

No ripping.

Examine for

yourself.

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ALL DEALERS



WILCOX'S

IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all
respects the most ECONOMICAL of all
Steam Pumps. Uses the same steam
twice instead of once. Any person can
run it. They are used on the Central
and Western Pacific R.R. from Oakland
to Ogden. They are used for Water
Works, Mining, Irrigation, and all other ordinary pump-
ing. Send for Descriptive Circular and Price List. Ad-
dress ALLEN WILCOX, No. 21 Fremont street, San
Francisco. 16v2-3m

Write for Large Illustrated Descriptive Price List to

GREAT WESTERN GUN WORKS



PITTSBURGH, PA.

Double, Single, Muzzle and Breech-Loading Rifles, Shot
Guns, Revolvers, Pistols, etc., of every kind, for men
or boys, at very low prices. Guns, \$3 to \$300; Pistols,
\$1 to \$25. 16v25-cow20t

New York Seed Warehouse.

ESTABLISHED IN 1852.

427 Sansome street, near Clay.....San Francisco.

R. J. TRUMBULL,

[Successor to C. L. KELLOGG]

Wholesale and Retail Dealer in



A Splendid Stock of Grass Seed, Embracing,
Mesquit, Kentucky Blue Grass, Orchard, Red Top,
Rye and Timothy; Fine Mixed Seed for Lawns;
White and Red Clover Seed; California and Chile Alfalfa.
Dutch Bulbous Roots, imported from the best
Flower Nurseries of Holland.

Agent for the **Genuine Languedoc Almond Tree**—By the 100, at from \$12.50 to \$25.00, 100,000
EUCALYPTA or AUSTRALIAN GUM TREES, at from \$15 to
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Catalogues free on application.

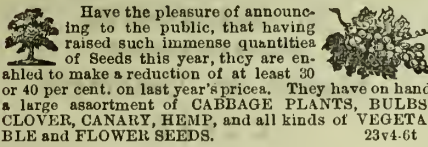
R. J. TRUMBULL,

23v25-3m 427 Sansome street, San Francisco.

SEED STORE.**SEVIN VINCENT & CO.,**

No. 607 Sansome street.....San Francisco.

Garden (80 Acres) at San Leandro.



Have the pleasure of announc-
ing to the public, that having
raised such immense quantities
of Seeds this year, they are en-
abled to make a reduction of at least 30
or 40 per cent. on last year's prices. They have on hand
a large assortment of CABBAGE PLANTS, BULBS,
CLOVER, CANARY, HEMP, and all kinds of VEGETA-
BLE and FLOWER SEEDS.

23v4-6t

CLEAN MESQUIT SEED.

1,500 to 2,000 lbs. for sale in chaff at
50 CENTS PER POUND.

Orders by mail promptly filled by

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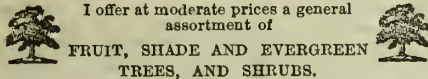
14v4-3m Sebastopol, Sonoma County.

TREES AND PLANTS FOR SALE

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LIBERTY NURSERIES.**Petaluma.**

I offer at moderate prices a general
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**FRUIT, SHADE AND EVERGREEN
TREES, AND SHRUBS.**

Deciduous Flowering Shrubs, Roses, Etc.

Green House and Bedding Plants in great variety.

Send for Descriptive Catalogue and Price List.

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**THOS. A. GAREY'S
SEMI-TROPICAL NURSERIES,**
LOS ANGELES CITY, CAL.

I now offer a large and select stock of Semi-Tropical
and Northern Fruits at GREATLY REDUCED PRICES.

Grafted Orange Trees a Specialty.**CHINESE DWARF MANDARIN.**

Fruits when only three feet high. Very ornamental.
Fruit of excellent quality.

Priced Catalogue sent free on application. Address

THOS. A. GAREY,

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FLAX SEED AND CASTOR BEANS.

Pacific Oil and Lead Works,
SAN FRANCISCO,

Are prepared to

Furnish Seed and Contract for Next

Year's Crop of Flax Seed and Castor Beans at rates
that, with proper cultivation on suitable
land, will make them among the most
profitable Crops grown.

For further particulars address

PACIFIC OIL AND LEAD WORKS,

3 and 5 Front Street.....SAN FRANCISCO.

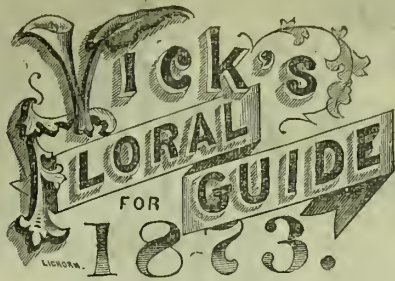
THE OLD**Maple Leaf Nursery.**

Has constant
varieties of
ORNAMENT-
GREEN and
SHRUBS; also
merous of Choice
Green House
ers and Bulbs,
and Flower Seeds of all kinds, are for sale by



ly on hand all
FRUIT AND
AL EVER-
DECIDUOUS
a large assort-
ROSES too nu-
merous mentio-
Plants, Flow-
Garden, Grass

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

SEEDLINGS AND ROOT GRAFTSShould be ordered now. **W. F. HEIKES,** Dayton, Ohio.

The GUIDE is now published QUARTERLY. 25 cents
pays for the year, four numbers, which is not half the
cost. Those who afterwards order seeds to the amount
of One Dollar may deduct what they paid for the
GUIDE, as I present it to customers. The January
Number is Beautiful, giving plans for making Rural
Homes, Designs for Dining Table Decorations,
Window Gardens, etc., and containing a mass of in-
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Hundred Engravings, and a superb Colored Plate
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18v4-3m-5a

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**Los Angeles Nursery and Fruit
Garden,**

LOS ANGELES.....CAL.

O. W. CHILDS, Proprietor.

Desires to call attention to his large and desirable
assortment of

**Orange, Lemon, Lime and
Citron Trees,**

POMEGRANATE AND OLIVE TREES,

Including a limited quantity of ORANGE, Grafted and
Budded on Lemou Stock.

HAS ALSO ON HAND,

50,000 Choice English Walnut Trees,
From 2 to 10 feet high. Price, \$10 per hundred. And
a very superior lot of

Italian and Spanish Chestnut Trees,
1 to 6 feet high, at very low rates.

23v25-4m

Main street, Los Angeles, Cal.

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PETALUMA NURSERIES.

I now offer for sale a large and
well selected stock of

Fruit and Ornamental Trees,

**Hardy Evergreen Shrubbery
and Greenhouse Plants.**

Send for Catalogue and List of Prices.

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WM. SEXTON,

23v4-3m Petaluma, Sonoma County, Cal.

50,000**Australian Gum Trees,**

Including all the desirable varieties, at from \$5 to \$10
per 100, in the best condition for transplanting and
transportation. For sale at the Gum Tree Nurseries,
Haywards, Alameda Co., Cal.

Address

JAS. T. STRATTON,

23v4-5m Brooklyn, Cal.

OSAGE ORANGE HEDGE PLANTS

FOR SALE AT THE FOLLOWING RATES:

First-Class.....\$9.00 per thousand
Second-Class.....\$6.00 per thousand
Third-Class.....\$4.00 per thousand

Ten per cent. discount made for any thing over 5,000.
Orders promptly filled. Address

23v25-3m

G. W. FRAZER,

Vaca Station, Solano County, Cal.

Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in
sections and quarter sections, at reasonable prices and
on accommodating terms—say, one-fourth cash and
balance in one, two and three years, with interest at 10
per cent., payable annually. Apply at the office of the
Company, No. 542, corner Market and Montgomery
streets, over the Hibernia Bank, San Francisco, or to
the agent, W. R. OLDEN, Anaheim. 12v34t

CO-OPERATIVE MARBLE WORKS.**JOHN DANIEL & CO.,**

Manufacturers of and Dealers in

Monuments, Headstones, Tombs,**MANTEL PIECES, ETC.,**

421 Pine street, between Montgomery and

Kearny, San Francisco.

21v2-1y

NATIONAL DRY HOP YEAST,

Manufactured at Seneca Falls,
N. Y. The attention of GROC-
ERS and FAMILIES is called to
this Yeast as the most reliable and
uniform article ever offered to the
trade—being purely vegetable, wholesome and nutritious,
and brought to the highest degree of perfection in its prepa-
ration. Its popularity is already manifest from the rapidly
increasing demand since its recent introduction into this
market. We solicit a trial, as the most satisfactory evi-
dence of its value. **JONES & CO., Agents.**
218 and 220 FRONT STREET, San Francisco.
18v4-3m

A New Firm.

**JEWELL & FLINT, General Commission
Merchants,** and Sacramento Agents for Walter A.
Wood's Harvesting Machines, No. 39 Front street, be-
tween J and K, Sacramento.
G. R. JEWELL,
15v3-3m **T. B. FLINT.**

THOS. BUTTERFIELD & SON,

Breeders and Importers of the
Cotswold, Lincoln, Leicester, Texel and
South Down
SHEEP.

**—ALSO—
THE ANGORA GOAT.**

Now offer for sale the Puro Bred and High Grades.
We have a good lot of Bucks of crosses between the
Cotswold and South Down, between the Lincoln and
Leicester, and the Lincoln and Merino.

THOS. BUTTERFIELD & SON,
Hollister, Monterey County, Cal.

19v4-tf

FULL BLOODED STOCK FOR SALE.

The undersigned has perfected arrangements to re-
ceive consignments of the Best Bred Stock from Europe
and the Eastern States, consisting of Short-horned
Durham, Devon and Alderney Cattle; Cotswold, Span-
ish Merino and Silesian Sheep; Angora Goats; Berk-
shire and Essex Swine. All of which will be sold on
reasonable terms, and pedigree guaranteed.

Seventy-five head of the Silesian Sheep have arrived
and are for sale by

26v3-tf

ROBERT BECK, Sacramento.
**WATT & McLENNAN,
WOOL COMMISSION MERCHANTS,**

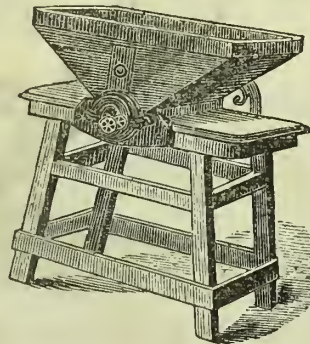
625 Sansome street, corner Jackson, SAN FRANCISCO.



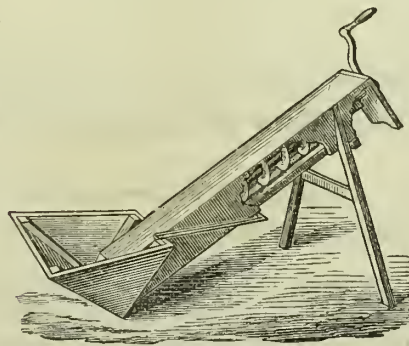
Receive Consignments of Wool, Sheep
Skins, Hides, etc. Liberal advances made to
consignors. Keep on hand the best quality of
Wool Sacks, Twines, and other supplies.

10v3-3m

40 Thoroughbred Angora Goats for Sale!
Imported by a native of Angora, direct from Asia Minor.
For specimens see the flock of Thomas & Shirland,
Sacramento, Cal. Address A. EUTYCHIDES, Spout
Spring, Appomattox County, Va. 10v4-1y

**THE CELEBRATED
CHALLENGE FEED MILL**


For Farm use and Custom work. The only Practica
Farm Feed Mill ever invented. Can be used with from one
to eight-horse power, and grinds from 200 lbs. to one ton of
barley per hour. Price of Mills from \$75 to \$100, according
to size. Adapted to Wind, Water, Steam, or Horse Power.
The grinding surface is adjustable, and can be replaced in
fifteen minutes at an expense of one dollar to one dollar and
a quarter. Over 3,000 now in use. Every Mill warranted to
give satisfaction. For sale by all leading agricultural firms
on the coast. For further particulars send for circular.
M. S. BOWDISH, General Agent,
With Hawley & Co., cor. California and Battery sts.,
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**DANIEL BEST'S
Bluestoning Machine.**


This machine thoroughly bluestones the Seed Wheat,
and removes every particle of Smut from the seed.
The machine can bluestone and sack 1,000 bushels
per day with ease. It can be worked by one or three
men, or by horse power; it can also be used for washing
stack bottoms.

Every Grain-planter should examine this valuable
Invention, for when once examined they would pur-
chase for economy sake as a valuable Labor-Saving
Implement.

All wishing to purchase will please address the
orders to

DANIEL BEST, Marysville, Cal.**PRICE \$25.00.**

Order early to secure prompt delivery.

21v4-tf

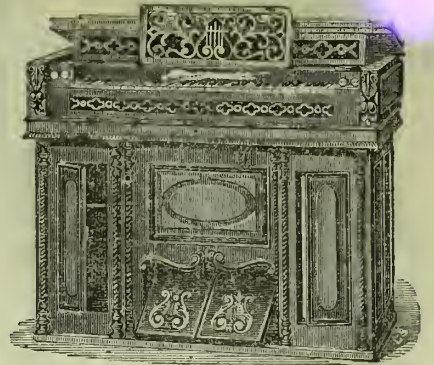
DANIEL BEST, Patentee.

The Best Investment Known.

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THE SANTA BARBARA PRESS,

AN INDEPENDENT NEWSPAPER,
Devoted to the Interests of Southern
California.

J. A. JOHNSON, Editor and Proprietor.

As the charming character of Southern California, and
more especially that most favored section called Santa
Barbara, becomes known to the world, it is not surpri-
ng that a widespread and growing interest in this re-
gion should be awakened. It is the constant aim of the
Press to furnish perfectly reliable information on all
points of interest to tourists, invalids and home-seekers,
which we are now able to do with greatly increased fa-
cilities. While the Press seeks to promote the prosper-
ity of all Southern California by all legitimate and
honorable methods, it is more directly interested in the
growth and coming greatness of Santa Barbara. The
unequalled loveliness of the climate, its almost incred-
ible healthfulness, the beauty of the scenery, the won-
drous variety and fertility of the soil, the almost un-
limited range of products which flourish there without
irrigation, will be made known by facts which cannot
be controverted, in the columns of the Press, from time
to time. Any intelligent person can become familiar with
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the Press.

A WORD TO ADVERTISERS.—As a simple matter of fact,
without a word of brag, it is claimed that the SANTA
BARBARA PRESS has a much larger circulation than any
other newspaper in Southern California, and is mainly
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State, and its advantages to advertisers are obvious.
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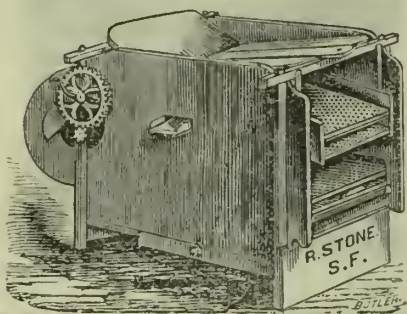
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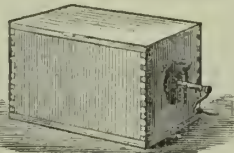
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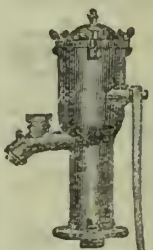
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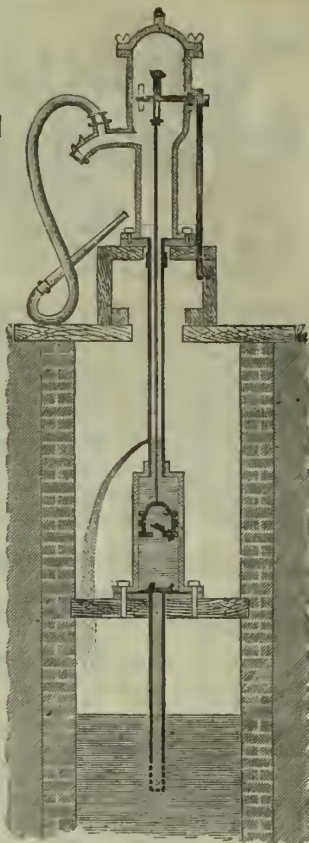
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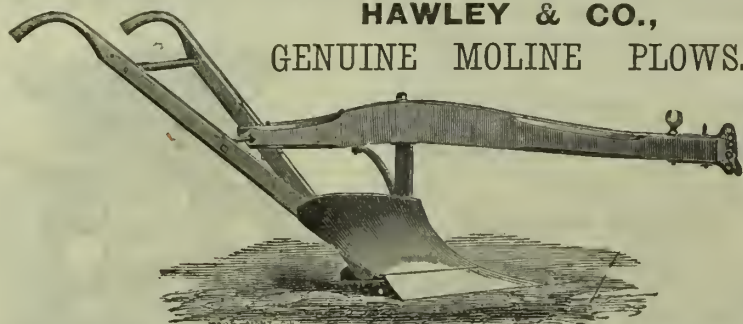
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Pure KENTUCKY BLUE GRASS, RED TOP, RYE GRASSES, ORCHARD GRASS, TIMOTHY, ALFALFA, WHITE, AND RED CLOVER SEED.

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We can furnish cellar and basement walls of rubble stone of superior quality in San Francisco at about the cost of brick work for the same.

The gray freestone from these quarries is considered far superior to that of any other within practical distance of San Francisco. It is readily worked and imperishable.

For samples we refer to the first story of the City Hall, Oakland, erected four years since, and the window caps and sills, and other finished work in the Deaf and Dumb Asylum, Oakland; in the Oakland Cemetery around the lot of J. S. Emory. Also small specimens in the offices of Augustus Laver, (Architect of the S. F. City Hall) Kearny St.; David Farquharson, Architect, Cor. Kearney and California Sts., S. F.

Orders may be left with George W. Thompson, on the premises, or A. T. DEWEY, SCIENTIFIC PRESS OFFICE, No. 338 Montgomery St. S. F., where samples of the stone may be seen.

THOMPSON & DEWEY.

Music Books for the Holidays.

LIFE OF HANDEL (\$2.00); of Chopin (\$1.50); of Beethoven (\$2.00); of Mendelssohn (\$1.75); of Rossini (\$1.75); of Mozart (\$1.75); of Schumann (\$1.75); of Gottschalk (\$1.50); of Weber (\$1.75). These books are elegantly bound and are charming biographies.

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These records of the inner life of the great masters are intensely interesting. Finely bound, like the preceding.

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PURCHASERS please say advertised in Pacific Rural Press.

PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, DECEMBER 21, 1872.

[Number 25.]

The Falls of Oregon.

We present our readers this week with an illustration of the Falls of the Willamette river near Oregon city, and of the lower Multnomah Fall, 50 miles from Portland. The engravings are drawn from C. E. Watkins' celebrated photographic views of the great Northwest, the originals of which can be seen with other fine views of Pacific coast scenery at his world-renowned gallery, 22 Montgomery street, S. F.

So small a cut can give only a faint idea, of the magnificent scenery at the Falls of the Willamette. The cliffs on either side are over one hundred feet high, and are covered at the summit and in the less precipitous places with a growth of evergreens. Along the bank on the right hand side of the picture are the magnificent locks built the past season. They will pass a boat two hundred feet long and forty feet wide, and at the same time furnish a water power of 4,000-horse power capacity. They have been blasted out of the solid rock and built in the very best manner.

There will be over two thousand feet frontage for building factories upon and plenty of power to run them. Linn City was built upon this site but was swept away by the flood of December, '61.

The land calculated for building is mostly made from rocks taken from the lock and is above high water mark.

On the left hand bank for nearly half a mile below the falls, stretches the busy town of Oregon City. There is a level tract from forty to eighty rods wide between the river and the bluff, which is higher than the water above the falls except, in extreme high freshets. Just above the falls on this bank is the basin used by 7 or 8 of Holladay's boats for transferring cargoes from above the Falls. The arrangement has been so perfect that it is claimed that freight can be transferred from boat to boat for fifteen cents per ton. This basin gives a fine water power of which 500 to 600 horse power are used. This drives two grist mills, a woolen mill a tub factory, a furniture factory, etc. A good part of the residences are on the level plateau above the bluff, and strangers passing through the place are not apt to form a correct idea of its size. The manufacturing facilities of this place are such that it is hoped that it will do more for Portland than Lowell has done for Boston. They are at present suffering great loss from the burning of the woolen mills which were the most extensive in the State. The prospect is that they will soon be rebuilt and running as successfully as ever. Messrs. Goldsmith and Teal the proprietors of the locks have purchased some boats to run on the Willamette, and it is expected that they will have a connecting line of steamers to run to San Francisco.

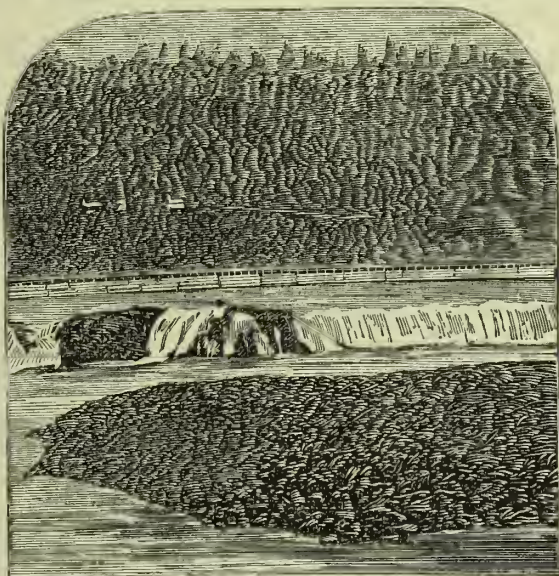
There will soon be a vigorous opposition for freights from Oregon to San Francisco.

THE JOURNAL OF THE FARM.—This excellent Rural and Family Monthly comes to us regularly, fresh with the odor of the fields, fruits and flowers, and instructive and interesting in all its varied departments.

"A Talk About Seeds."

With the sensible ideas given under this heading last week, our correspondent remarked that it was best to send for Eastern seeds in order to secure those surest of germinating. While it may not be denied, that in early times many old or spurious seeds have been palmed off by seed dealers in California; yet the period has now arrived when we have reliable and enterprising seedsmen, who are building up on their own merits a thrifty and permanent business, and we do not believe our correspondent intended to make a general charge against our seedsmen.

Planters cannot be too careful of those they buy, however, at home, or abroad. In



THE WILLAMETTE FALLS, NEAR OREGON CITY.

case of detecting poor seed, in the manner suggested last week, the purchaser would have an advantage in being within convenient distance of the seller in order to return them quickly. We have no sympathy with men bad enough to sell poor seeds—for the paltry price they bring, as compared to the injury likely to occur by planting them. Yet we believe the seedsmen are often blamed for the loss of good seeds by planters having the soil either too wet or too dry at times.

Care of Farm Implements.

It is deplorable to see how little care is given—by otherwise good farmers—to the protection of farm implements. The beautiful and always costly thrasher and separator is even now in too many instances in this State, standing in the field where the last stack of grain was threshed; to the injury of the iron work and the certain destruction or great damage to the wood work of every such machine. Not only should they be immediately housed from the effects of sunshine and rain, but they should at the first leisure moment have a complete overhauling, and every part cleaned and properly oiled or painted.

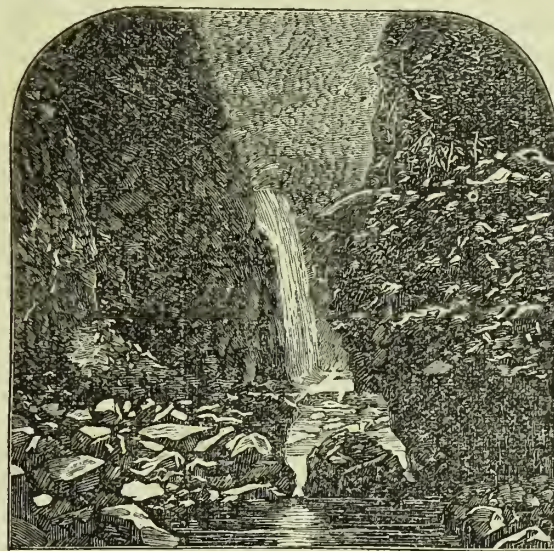
And the same holds good in regard to all other farming tools; plows, harrows, rakes and seed-sowers, all should be cleaned, painted or oiled and put away under a covering where they will remain perfectly dry till wanted. In doing this, 25 per cent. is saved to the farmer on every implement he buys, and this is as much as he can make on anything connected with his farming operations; besides the advantage of having everything in readiness for future use just when it is wanted.

Bulkheads in Cities.

Large cities and large grainfields like large ships, should have bulkheads. Bulkheads are partitions, separating a ship into any number of water-tight compartments, so that if one be stove or water logged, though it may fill to the level with the sea, the other compartments will if uninjured keep the ship from sinking.

Bulkheads in grain fields need be nothing more than occasional belts of green grass or clover fifty or more feet in width, or the mallow may be grown, a green and juicy shrub or tree, answering when dry for fuel and its green leaves an excellent food for animals. This kind of bulkhead is not for water, but to keep fires within certain limits.

The same, but increasing the width to three



LOWER MULTNOMAH FALL, COLUMBIA RIVER.

hundred or more feet, and growing groves of forest trees thereon, should traverse all our large cities at certain intervals of distance, throughout their entire extent; and when extensions to present large cities are projected, land enough should be condemned and paid for to secure them.

FARMERS' CLUBS.—Farmers all over the State are moving in the matter of a more determined effort to promote their own interests, or to save themselves from the teeth of unscrupulous speculators in the products of their industry. Several counties have one club, a few two, and Sonoma is about to organize a third at Sebastopol in that county. We find wherever the *RURAL* circulates numerously, the farmers are waking to their interests and with a determination to look more closely after them, as connected with the disposal of their products to that class of our people generally designated as middlemen.

FRUITS OF THE SEASON.—On this the 19th day of December, we will, though not to tantalize our Eastern readers, but just to show them how we are getting on with our winter, remark, that most of our fruit stands for the sale of fruits, etc., are what are known as *open stands*, simply a shop or store without doors or windows in front. That these stands are just loaded with apples, pears, and a half dozen of our best varieties of grapes, whilst oranges, limes, bananas, and pine apples are as plentiful as can be reasonably wished, all at low prices; whilst strawberries and green peas can also be found, but begin to possess somewhat the odor of silver,

Our Agricultural Notes.

We have this week gathered rather more than our usual crop from our agricultural exchanges, and extending over some of the most interesting districts of the State; and which will give to our Eastern readers, who are subscribers or who may receive the *RURAL* from their California friends, a very good idea of the climate of the several localities mentioned, now in the month of December, strangely contrasting with the frosts, ice and snows of the Atlantic States.

Not that we are exempt from light or even heavy frosts, here and there; but they are frosts simply, with little or no ice, and no snow at all. By taking a map of California on which the counties are laid down, it will be seen by reference to our notes, just where frost does sometimes whiten the ground at night and till half an hour after sunrise, and also the places where nothing is said or known of it worth speaking of.

We have now, Dec. 19th, in San Francisco, green corn in the husk just picked from the stalk, juicy and fine; of course not the great abundance that our markets present in June, July and August, but still green corn, and not very costly either; five cents an ear; and as to green peas in pods, there are barrels full every day at our vegetable stalls; whilst lettuce and fresh radishes are as common as at any other season of the year.

PAMPHLET RECEIVED.—It is entitled—The Department of

Agriculture: Its History and Objects. By James M. Swank, Chief Clerk of the Department. It contains a complete list of the Commissioners and acting Commissioners of Patents, from 1836, in which year the Patent Office was reorganized, to 1862, when the Department of Agriculture was established. The Commissioners of Agriculture from 1862 to 1872, and the Officers of the Department June 1st, 1872, with a historical sketch of the Department and what it has done for the interest of agriculture in the United States. A valuable little work.

AGRICULTURAL SOCIETY MATTERS.—The new Board of Trustees of the Napa and Solano Agricultural and Mechanical Arts Society, held a meeting at the office of Jno. M. Gregory, Jr., in this city, yesterday, for the purpose of closing up the affairs of the last exhibition, arrangements having been made by the new Board to settle all outstanding claims against the society. A number of bills were audited and arrangements were also made for the completion of improvements at the stock grounds. A meeting of stockholders will be held in January for the purpose of electing a Board of Directors to manage next year's exhibition, at which, exhibit of the financial condition of the society will be made. The zealous interest already manifested by the new Board of Trustees augurs well for the future.—*Vallejo Index, Dec. 10th.*

SECRETARY OF THE INTERIOR.—We have received the Annual Report of the Secretary, showing the operations of the Department for the year 1872.

CORRESPONDENCE.

Notes of Travel in Washington Territory—Continued.

[By our Traveling Correspondent.]

Eastern Oregon and Washington.

An intelligent observer, for several years a resident here, communicates the following:

"The great Columbia Plains, lying east of the Cascade Mountains and West of the Blue and Bitter Root ranges and parallel with them, and parallel with and about 300 miles East of the Pacific Coast, constitute one immense grazing ground, stretching from mountain to mountain, about 150 miles in width, and from the Klamath Lake on the Southern boundary of Oregon in the south, far into British Columbia in the North, more than 400 miles in length, covered with the finest grass in the world, well watered in many places, with rivers and streams making down from the heavily timbered mountains, through the plains, and drained by the noble Columbia.

One of the great peculiarities of this country is its mild climate. At this place, in latitude 46°, we seldom have snow before Christmas, and throughout the fall, for more than two months, we have the most delightful weather, generally frost at night, with bright, warm days, with the thermometer ranging from 55° to 70°.

This mild climate, with the abundance of the nutritious bunch grass everywhere, renders this pre-eminently a grazing country. Cattle and horses are seldom fed here during the winter, even as far North as the 49th parallel, but graze all winter on this dry grass, which, through the dry fall, has become cured standing, so that it is nearly equal to timothy hay; hence, even up to the very summit of the mountains, on the head-waters of the Columbia and Missouri, we can drive up cattle in the spring, from the range, equal to the best Eastern stall-fed beef; and many of them have not tasted a morsel of hay or straw.

The atmosphere is salubrious and remarkably free from miasmatic impurities. In the summer the heat is rather intense during the day, but every evening brings with it a refreshing coolness, which is perfectly delicious.

We have seen large fields of wheat average 56 bushels to the acre, and weigh 62 pounds to the bushel; and have seen fields which yielded 40 to 50 bushels per acre, from a "volunteer" crop, that is produced the second year from grain shattered out during harvest, sprouting during the fall, and growing without even harrowing.

We generally raise the variety known as "Club," and sow it in the fall or spring.

We produce about 40 bushels of corn to the acre, of the large Yellow Dent variety, and it ripens nicely by the first of September.

The potato is perfectly at home here, growing large, fine and mealy. Sweet potatoes yield finely, but they are not so sweet as further South. Turnips, beets, cabbages, tomatoes, peas, beans, onions, are all raised with ease and in great abundance. Fruits of all kinds are perfect in every respect.

The climate is so dry that we never see anything like mildew or rot on the grape.

Fencing on these plains is an important item. We go to the mountains for all our fencing and lumber, from 8 to 20 miles. We can buy good fir rails in the mountains for \$1.50 per hundred with a good road to haul them out. There has been a large amount of fencing done in this valley by ditching, but it soon wears down, and farmers are now building good rail fences.

There is yet a large amount of good land to be had in the Columbia Basin, by going back a little from the settlements, at \$1.25 per acre.

Walla Walla Nursery.

Philip Ritz, near Walla Walla, is proprietor of one of the most extensive and finest nurseries of fruit and ornamental trees, vines, roses, shrubs and flowers, to be found west of the Rocky Mountains. His catalogue for 1873 embraces a list of the finest fruits known to the pomologist; and his enterprise in early introducing to Eastern Oregon and Washington Territory, the best varieties of all the fruits appropriate to that latitude and climate, will tell advantageously upon the future value of the orchards of the country.

Towns on the Columbia River and its Tributaries.

At the head of navigation on the Snake river, is the town of Lewiston in Idaho Territory; it contains about 150 inhabitants and is the point from whence most of the mining goods are sent into the mines of Idaho, although no mining exists in the immediate vicinity. It is 147 miles above Wallula, W. T., which latter place is 10½ miles below the mouth of Snake river. A noted peculiarity exists at and below the confluence of the Snake and Columbia rivers; the one carrying a body of muddy water, the other perfectly pure, and each keeping its own side, flow on and down several rapids a distance of 40 miles before becoming mixed. In all this distance, steamers in want of pure water have only to run across to the clear side and get it.

The Columbia proper is navigable to Priest's rapids for steamers of light draft during high water, from April to August, distance 80 miles above Wallula, W. T., which latter place is the head of navigation from March to 1st of December. Wallula is on the east bank of the Columbia and contains about 100 inhabitants, and

will doubtless soon become a place of considerable importance, as a narrow gauge railroad is now being constructed, with 16 miles already graded, known as the

Walla Walla and Columbia River Railroad.

An incorporated company with a capital of \$700,000, in 7,000 shares. Dr. E. S. Baker President; H. M. Chase Secretary; and Maj. Sewall Truax, Engineer. Length when completed 32 miles, with gauge of three feet, maximum grade 60 feet to the mile, and greatest curvature 12 degrees. Its direction is nearly east and west, will be completed early next season, at an approximate cost of \$8,000 per mile equipped.

Northwestern Stage Company.

One of the most extensive stage interests probably on the continent, is that known as the Northwestern Stage Company, with over a thousand miles of stage lines. Passengers from the East wishing to visit this part of the country can purchase through tickets, to the navigable waters of the Columbia, at any of the Eastern railroad offices. The point of divergence from the C. P. Railroad, coming from the East, is at Kelton, Utah. From this point to Wallula on the Columbia river is 500 miles.

The prominent towns passed through on the route are Boise City, Rye Valley, Baker's City, La Grande and Walla Walla. This company issues first, second and third class railroad tickets at any of their offices. Chas. Huntley is the general manager of the company, at Boise City Idaho.

From Wallula, down the Columbia, the next point of interest is Umatilla, distance 25 miles, a village of 150 inhabitants; between which two points are the celebrated Umatilla rapids, over which it would seem impossible at this season of the year for a steamer to pass, as the river falls 18 feet in 1¼ miles. But between these points the steamer Owyhee plies, the distance is made down stream in two hours, and up in four hours, fare \$2.50. This steamer is commanded by Capt. E. F. Coe. The Owyhee is of 313 tons measurement, with a carrying capacity of 90 tons.

Down the Columbia distant 85 miles is Celilo; between these points the steamer Tenino plies, Capt. T. J. Stump, master. It is a steamer of 329 tons measurement, carrying capacity 140 tons. From Wallula to this point 115, the Columbia falls 250 feet, creating some of the most fearful rapids traversed by any steamer in the world. It is between these two points that Government has appropriated \$50,000 for blasting out some of the principal rocks in the river, at Umatilla rapids, at Devil's bend and at John Day's rapids, 16 miles above Celilo. The contractor for this work is J. B. Montgomery, and the Superintendent J. P. Kidder, the work to be completed before April, 1873.

From Celilo to the Dalles there is a portage of 14 miles made by rail, the river being too rapid and rough for navigation. Dalles is the county seat of Wasco county, Oregon, and contains about a thousand inhabitants. Still further down the Columbia 50 miles, is Upper Cascades; between the Dalles and this place, the steamer Idaho, Capt. John McNulty, plies; she has a measurement of 302 tons and a carrying capacity of 75 tons.

Upper Cascades has only a half dozen houses, and from this another portage is made to Lower Cascades, distant six miles by rail. From this point to Portland on the Willamette is 60 miles, being 12 miles up the Willamette from the Columbia. Between these two places the steamer Emma Hayward plies, of 576 tons measurement with a carrying capacity of 300 tons, and commanded by Capt. John H. Wolf.

Between the Lower Cascades and the mouth of the Columbia river, is that beautiful view, Cape Horn, illustrated in the RURAL of Oct. 5th, which we indorse as truthful. There are also a hundred other scenes almost equally beautiful along the river between the points last named, many of them made famous by the enterprise of the Photographer, Mr. C. E. Watkins of the Yosemite Art Gallery, San Francisco. L. P. MC.

Unwelcome Immigrants

EDS. PRESS:—Speaking of rats, until the last month or two, we have been privileged with the exclusion of their company. However, the railroad is here now bringing its various evils—rats included, and said rats are so fractious that they must and will try every sack. Just as if they were trying to find the best. Well! you may say, what have we to do about your rats? I reply: help to provide an exterminator, a general destroyer of our railroad pests; and I just thought that amongst your 20,000,000 subscribers, some one might tell me a good way of getting rid of them.

Another thing—being a subscriber to your excellent RURAL, and wishing to see it prosper I would suggest an item or two. I read the RURAL and I keep the RURAL; and I want you to put it in good shape for reference, by giving us an index once in six months—and would suggest a little heavier paper, and would be willing to pay the extra expense. I don't run the RURAL, only suggest; let me hear your views if you think it worth the while. J. L. Reno, Nevada, Dec. 9th, 1872.

We can assure our correspondent that Reno is not the finest newly settled country, troubled with rats. On the first influx of population into California under the gold excitement, the shipping in the port of San Francisco, introduced the regular Norway or brown rat, that immedi-

ately spread with astonishing rapidity all over California.

When they first make their appearance in a new field of operations, they increase so rapidly that trapping and poisoning seem to have little or no effect on their numbers; but they have a positive abhorrence of cats and dogs, and particularly, the rat-terrier. Such as a good rat-dog will not destroy, they will cause to leave the premises.

If they maintain certain runways about the premises, sprinkle caustic potash in and about their holes; this adheres to their feet, burns off the skin, they lick their feet, which skins their tongue, and they leave sometimes an entire neighborhood from this cause in a very few days apparently in utter disgust.

A full and complete Index of the contents of the RURAL is given at the end of every six months. We think our paper in quality will not suffer in comparison with any used on the Pacific Coast for similar publications, as we pay for an extra quality, and use it. When our list of subscribers is largely increased over our present thousands, we may be able to comply with the writer's wishes, and hope to be able to do so. We are always glad to hear any suggestion for the improvement of the RURAL.

San Luis Obispo.

EDITORS PRESS:—The commonly received axiom that the civilized people are becoming more selfish and grasping will hardly find material for substantiation in San Luis Obispo. It may be that the comparative isolation this county has had thus far from immediate contact with cities or large towns, has saved the people from the usual results of progression as felt in those communities which have railway communication and other demoralizing influences.

For a county that has been nominally benighted, and in the progression of the Israelites the lover of humanity is present in so large a degree as to make its redemption a matter of no doubt. One is apt to cry out against the sweeping way in which the large grants absorb all the good land; but the original owners are not so much to be blamed as their successors. Such grants as the Santa Rosa; the Los Osis; the Corral de Piedra; the Guadalupe, etc., long since slipped away from their original owners, and if any frauds have been perpetrated (as there is no doubt there have been) it has been in most cases attributable to the grasping tendencies of the money lenders.

These last have in most cases swelled the grants from one to many leagues, and in some instances stretched them over and across large streams, whereas, it is well known that such streams were seldom crossed by the old designations. The result is that there is not land enough to be found, in some instances, to fill the bill of the would-be grant holders; where, then, are the settlers on Government land to look? In the worthless hills and mountains?

Cooperation—Farmers' Clubs.

These are the necessities of the day, and there is no better field than San Luis Obispo county. The producers of this county now aggregate a surprising amount of products. What can be looked for with increased occupation and facilities? The Guadalupe rancho alone would support a population of several thousand. Forty acres of barley averaged 121 bushels to the acre, and there are 10,000 acres of the same kind of land on the rancho. Then there is the Osa Flaco and the Pismo tracts immediately north, owned by the Steele Brothers, and used for dairy purposes, that are almost as productive.

These dairymen adopt a judicious plan to excel in their productions by a friendly emulation and rivalry kept up between the foremen of the cheese departments. One of them, Henry Bosse (suggestive name) was quite elated at the result of his efforts to make a better article than the other foreman on the upper ranch, his cheese bringing a better price in market. But Patrick Donahue was equally as confident he could beat the Dutchman, if he only had a fair show. Both hoping to rival in the excellence of their productions the dairies of Holland and the United Kingdom.

It is confessed that the flavor of their cheese (to my taste) is far preferable, considering the age, than any foreign article of the kind ever tasted. Altogether the people and the productions of this county are a pleasant surprise. We had fallen into the common error of supposing that everybody was so nearly run mad after the "golden calf" that it was hard to find leaven enough to save the whole; but our sojourn in San Luis, with trifling exceptions, has brought us in contact with so many honest, genial, good old-fashioned and hospitable people, that the reminiscence will always be as an oasis in the memory of the past, and we go forward in life hopefully and with better faith in human kind and the ultimate predominance of good.

When the producers cooperate and insist upon the government assuming all the princi-

pal railway lines, as they soon will be compelled to do, in order to save the life of the nation, and the people learn that in order to attain happiness it is of vital import to unite in a great cooperative union to do for themselves all that is necessary to make life desirable, then the drones, leaches and middlemen will have to go to work like honest folk.

F. M. SHAW.

San Luis Obispo, Dec. 8th, 1872.

Wool Growing in Oregon.

EDS. PRESS:—After the very flattering terms in which your traveling correspondent writes of Salem and some of its business interests, and also some of the stock breeders in its vicinity, in his communication published in your issue of November 23d, it may seem a thankless task to correct a few errors into which he has fallen in his communication which you published November 30th.

Of the flock of Merinos owned by my neighbor, T. L. Davidson, he says: "His (Mr. Davidson's) original animals were from the Hammond flock and has introduced new blood from the importations of Rockwell and J. D. Patterson." The facts are, the first ewe lamb of this blood owned by Mr. Davidson was purchased of me, and bred from an Australian Merino ewe; the sire being, as I believe, the first imported American Merino buck of the Jones and Rockwell importations, owned in this State.

His next purchase was twin ewe lambs from my flock, the mother being an Australian Merino, the sire a first-class hornless buck lamb (the origin of my present hornless Merinos), and bred by me from the same Jones and Rockwell stock. His next purchase was an ewe lamb of Mr. McLeod's importation, said to be of Hammond stock. One of the before mentioned twins proving barren, I gave Mr. D. in lieu of her subsequently a good ewe lamb of the same blood—that is a cross between the Australian and Jones and Rockwell blood. Mr. Joseph Holman was then my partner, but I had the breeding and management of the flock and subsequently became its sole owner. To verify in part what is here stated, I inclose Mr. Davidson's statement to the Oregon State Agricultural Society (taken from page 40, of list of premiums, awarded at the Fair in 1872, which I mailed a few days ago).

As many others besides Mr. Davidson have derived their flocks in whole or in part from my flock, justice to them as well as myself seems to require that the error should not pass unnoticed. In addition to the reason above assigned, there is a strong probability that Messrs. Jones and Rockwell will visit the Pacific slope again next spring and bring with them representatives of the skill of Mr. Jones, (the breeding partner of the firm) and it is certainly right that he should have full credit for the results of the good seed sown by him on this coast 12 years ago.

The Sheep Interest.

Of the interests of sheep-bands in Oregon generally, it gives me pleasure to say that, in my opinion, that branch of industry is just now entering upon a period of rapid development and increase, which will not cease until Oregon is close upon her sister, California, in the magnitude of her wool-growing interests. The feeling for wool-growing, as a pursuit at once permanent and profitable, is daily growing stronger. There is no symptom of feverish speculation accompanying the expression of this feeling, but all the conditions of success or failure are taken into the account in such a manner as to insure success in the great majority of cases.

Your correspondent mentions the fact that 30,000 head of Texan cattle have this year been driven into this State. I am quite sure that some who have so invested their means, would now feel better satisfied if the money had been paid for Texan or New Mexican sheep. The latter kind of stock could undoubtedly be driven as successfully as the former, and, beyond all doubt, with proper management, would yield returns sooner, greater and oftener. Men who have already made money by cattle-raising in Eastern Oregon, seeing this, are now beginning to talk of wool-growing. Some who commenced with sheep five and six years ago, have already demonstrated that there is wealth to be gained in the business.

It is not likely that this interest will ever assume the same proportions in individual hands as in that of companies which it has attained to in some cases in California and Australia; but the openings for individuals of limited capital to begin and grow into comparative wealth, are much superior to what California, Australia or New Zealand has to offer. Companies of men in moderate circumstances could be formed, and carry on their business even more economically than single individuals; but for great combinations, unless they have to buy out some road-grant's franchise, the conditions are not so favorable. Such companies need, and must have, a force of steady, careful shepherds, and it would be hard to keep such men where each of them could take up land of his own, and start for himself with a few head of his own, or a stock furnished by some other party to keep on shares.

JOHN MINTO.

Salem, Oregon, Dec. 6th, 1872.

HOME AND FARM.

To Make Farmers' Homes Happy.

The season has come for planting trees and shrubs for fruit and ornamental purposes, nor do we know any means attended with so little expense by which a home can be made valuable and pleasant as good orchards and ornamental trees and shrubs around the dwelling. How much better to invest thus than to build a large, showy, costly house, containing more room than is needed for the use of the family, as is sometimes done.

Much has been written in regard to the isolation and loneliness of a farmer's life, but all farmers are not thus isolated; some are near towns, and others in thickly settled neighborhoods, but even those who have no near neighbors can have pleasant home, dwellings comfortable and convenient, rooms well furnished, a piano and other instruments of music, a good library, and some choice paintings and engravings; also a chess board, to occasionally while away the long evenings with chess, drafts, or backgammon. Such a home surrounded with fruits and flowers, has the means to make most children happy and contented, and of course the heads of the family will also rejoice amid the many comforts and blessings by which they are surrounded.

Hunting and fishing are occasionally resorted to with great zest to enliven the leisure days of farmers and farmers' children. Natural science in its various branches should be understood by planters and taught to their children, and nothing will contribute more to their enjoyment than such studies. A knowledge of botany will increase the pleasure derived from the culture of fruits and flowers; of geology and mineralogy will cheer and render more satisfactory the tillage of the soil; especially is that branch of geology relating to soils, and connected with agricultural chemistry, useful.

With a suitable education and proper surroundings, the children of the farmers and planters of the South will rarely fail to prefer their avocation to every other. They will not long or desire to become doctors, lawyers, or merchants, and live in cities and towns. The professions are already too crowded, so much so that a large majority of professional men find it difficult, and some cannot support their families in cities and towns. Other lawyers and doctors are so poor, and remain so poor, that they are never able to marry and support a family, and so they live the miserable, cheerless lives of old bachelors.

The farmer's life can be made the most pleasant and combine more means of true enjoyment than that of any other pursuit. It is the most healthy of avocations, for statistics prove that farmers as a class, live longer than any other profession—that is, those who own the soil, excluding the common laborer on the farm. This is accounted for by the superior intelligence of the landholder, causing him to ever enjoy the labor of the farm, enlivened by the sight of the growing crops and fruits. Farmers can have long and happy lives, and as one great means of accomplishing this, let them plant liberally both fruit and ornamental trees and shrubs. Fruits by all means, for they are also ornamental. There are few sights more pleasing around a dwelling than trees loaded with ripe fruit. Select trees from a reliable Southern nursery and take good care of them, and none who do will regret the labor and expense. Good fruits during the year will aid much in making the wife and children happy and contented.—*Prof. Buckley, Texas.*

EXPERIMENTS IN GRAFTING.—The *Prairie Farmer* has published in detail the experiments made at the Illinois Industrial University, with root-grafting the apple. Some of the results seem to vary without assignable cause, or are accidental or uncertain, and others are distinct and obvious. We give the substance of these results: 1. Grafts set on the first cut of the root or collar were more apt to live than those on lower cuts of the root, although the difference was not striking. 2. The first of the lower cut of the scion was more apt to live than those taken higher up. 3. The terminal bud did not succeed so often as other grafts, but generally made a longer growth. 4. When cuts of the roots four or five inches long were used, they lived oftener than two and a half inch cuts, and more than twice as many grew as when the cuts of the root were an inch and a half long. Single experiments like these need repeating several times in different years, and under varying circumstances, to be fully reliable.

HOW CORN IS TO BE HARVESTED.—Mr. Harris says in the *Agriculturist*: I believe corn will yet be harvested as we harvest wheat—cut with a reaper, bound into bundles of a convenient size for pitching, and then threshed by a big machine, driven by ten horses or a steam engine. It must be powerful enough to take in a bundle at a time, strip off the ears and husk them, and the stalks as they pass through can be cut up and elevated by a straw carrier. I believe in less than ten years we shall see hundreds of such machines traveling from farm to farm, as threshing machines now do, and we shall wonder how we ever got along without them.

Agricultural Geology.

Nature and Origin of Soils.

All soils may be regarded as formed originally from disintegration or decomposition of rocks—the former a mechanical cause connected with the atmosphere, and resulting from alternations of dryness and moisture, and of heat and cold incessantly going on. The growth and decay of vegetation is another important agent telling in the same direction, as no soil is available for useful plants and those requiring cultivation, without something more than the ordinary constituents of rocks. Climate, again, exercises a marked influence—first tending to break up all hard substances exposed to its action; while the torrents that fall from the clouds, and afterwards rush over the earth's surface, in tropical countries, are scarcely less influential in grinding down to powder and removing surface accumulation of any kind. In temperate countries, like our own, in the high Sierras the frequent alterations of the temperature within a few degrees above and below the point at which water possesses the smallest volume, (about 38° Fahr.), is another fruitful cause of destruction, by the alternate expansion and contraction of water in the crevices of surface deposits, and the consequent splitting up and breaking off the outer weathered coat of rock. Decomposition is produced in rocks partly by oxidation or exposure, and partly by the infiltration of water containing acid or alkaline substances in solution. Both causes greatly assist the disintegration already alluded to; but rocks are very differently affected, the weathering sometimes extending downwards twenty or thirty feet or more beneath the surface, and sometimes hardly visible, in all cases, however, where valuable soil is found, there is a considerable admixture of the surface rock with

Material Conveyed from a Distance.

And with humus and mould, the brown permeable substances produced by the decay of woody fibre, which not only yield dried nourishment, but act indirectly, in a very important way, to render soils more generally useful than they would otherwise be. Besides the soil, the subsoil exercises considerable influence on the vegetation of a district, and is often yet, more nearly derived from the underlying rock. By mixing these two mineral substances together, the value of the former is often greatly increased; and by taking advantage of the condition and nature of the latter, the mechanical operation of draining is often greatly simplified. It will be evident that, in a general way, a chemical investigation of any soil will be more valuable than any mere account of its geological position. While, however, in an unknown district, the age of a rock affords no valuable information for practical purposes; this is not the case where mineral substances of the same kind are usually met with in geological relation to each other. A knowledge of the mineral character of a rock, and its value for special purposes, requires that the chemist and the mineralogist should be referred to, there will arise questions of great practical importance, as to whether any quantity of such mineral as rock exists near at hand, and can be readily and cheaply obtained. In the case of limestone, these matters are of vital importance, and they involve considerations strictly geological. In addition to the mixing of soils, and the advantage, under certain circumstances, of deep ploughing for this purpose, there are many points, in the practical treatment of land, which admit of the application of geological knowledge. Thus, where drainage is required, it can hardly be planned with propriety without some reference to the underlying material, and the position in which it exists.

ANSTED.

Irrigation an Exhaustless Fertilizer.

Damascus is one of the oldest, if not the very oldest, city in the world. Tradition there locates the grave of Adam, Abel, Seth, Noah and other early ancestors of our race. Damascus is surrounded by a dreary desert, yet is itself a marvelous oasis, the fertility of which runs back to the earliest records of the world's history. Water first made this fertility possible, and water keeps it up without any signs of deterioration. The water is taken from the rivers Abana and Parpar, and, considering what agricultural wealth and blessings they were and are the source of, it is no wonder that the infidel leper-general Naaman, was filled with doubting rage when told to go and wash in Jordan for the cure of his disease, while he had in mind the two great fertilizing and life-giving rivers of his own city. Horace Greeley lately expressed a doubt whether any amply-irrigated field is less fertile to-day than it was on the morning of creation. The history of Damascus proves beyond a doubt that it is not. Water is wealth all through the East, where the climate, the topography of the country, and the composition of the soil are almost exactly the counter part of those of California. The San Joaquin Valley practically produced not a ton of wheat in 1871; it yielded 300,000 tons in 1872. Water, and, water alone, made the difference between utter sterility and starvation and bursting granaries and abundance. California without irrigation and California with a well developed system for the artificial use of water, will bear the same comparison to each other that the tiny and unreliable brook does to the wide and ever-flowing river. The knowledge of these facts and a purpose to turn them to practical accounts is just beginning to be awakened.—*Real Estate Circular.*

MISCELLANEOUS.

Extraordinary Meteoric Display—What has Become of Biela's Comet?

On Sunday evening, Nov. 24th, a remarkable meteoric display was witnessed from the Observatory at Washington, also at New Haven, Conn. It appears that between 7½ and 12¼ o'clock, upwards of 250 shooting stars were seen radiating from a point near Gamma Andromeda—the precise point at which astronomers were then looking for the expected return of Biela's comet.

In 1846 that body was seen to divide into two comets, slowly increasing their distance from each other as they moved off into space. At their next return in 1852, they were a million and a quarter miles apart. Since that time neither portion of the comet has been seen, though their third passage of the node should have taken place about six weeks ago. Astronomers have for some years been suspecting that the comet had entirely gone to pieces, and that it would not again be seen. Sunday evening were seen, as above stated, about 250 fragments of the comet. A large number of observers would probably have been able to count 700 or 800 in the time named. The process of breaking up has evidently been going on a long time. Mr. Herrick saw in 1838, December 6, quite a number of fragments, though he did not then suspect that they had any connection with this or any other comet.

Both B. F. Sands, Superintendent of the Washington Observatory, and Prof. H. A. Newton, Astronomer at Yale College, believe that these meteorites are veritable fragments of Biela's comet, and have no connection whatever, with the ordinary November meteors or any other meteoric display which has heretofore been observed.

Proposed Novelty in Fireproof Buildings.

The *Scientific American* recently suggested that some plan should be devised for constructing iron buildings with hollow walls and so connected that in case of fire the walls might be instantly filled with water from the hydrants, thereby making them perfectly fireproof. The presence of the water would prevent any undue heating or warping of the iron, the same as is accomplished in the case of the steam boiler. The problem was to construct a building that would be absolutely fireproof.

The *Manufacturer and Builder*, since the Boston fire, has had an interview with an ingenious mechanic who has been at work upon this problem ever since the Chicago fire, and who has finally perfected a plan for which a patent is now pending, and which consists of two light iron plate walls, either rolled or cast, and

formed with columns of a double T I or letter I, or any other practicable shape, rabbeted on the edges, and made water-tight by caulking and by fire and water proof cement. The sills, joists and plates are constructed in the same manner, the hollow chambers, formed by the iron plates and column, communicating with each other, and the building held together firmly by horizontal and perpendicular concealed nutted rods. The building can be ornamented in any style to suit the taste of the owner. The novelty of the idea consists in connecting the chambers thus formed, through the sills, with the water mains of the city. When in danger of fire the water is turned on, and the pressure at once forces it into these chambers from sills to plates, and throws it in jets, from different places, upon the roof, completely flooding it, and rendering the building absolutely fireproof, even in the most intense heat.

A building constructed on this plan would require little or no insurance, would save much valuable ground that is now used for thick walls, and can be made at the mills, the parts adjusted and numbered, and shipped and put up with the same facility that bridges are now.

The cost of such a fireproof building will not exceed that of a granite, brick or iron one of a similar style of finish. The paper above quoted says that a company is to be formed for the manufacture and erection of buildings on this plan.

OUR IRON YIELD.—The yield of the 50 furnaces now erecting will add 500,000 tons of pig iron to the present annual production of the United States, and it is estimated that the productive capacity of all our furnaces will be 3,000,000 tons per annum within two years.

CAR AXLE PATENTS.—It is stated that 104 patents have been granted in this country upon car axles and wheels having the idea in view, of making car wheels to run independently as in turning a curve.

The Future of Science.

The following extract is from Sir Charles Lyell's recently published volume on the "Principles of Geology: We are sometimes tempted to ask whether the time will ever arrive when science shall have obtained such an ascendancy in the education of the millions that it will be possible to welcome new truths instead of always looking upon them with fear and disquiet, and to hail every important victory gained over error, instead of resisting the new discovery long after the evidence in its favor is conclusive. The motion of our planet around the sun, the shape of the earth, the existence of the antipodes, the vast antiquity of the globe, the distinct assemblages of species of animals and plants by which it was successively inhabited, and, lastly, the antiquity and barbarism of primeval man—all these generalizations, when first announced, have been a source of anxiety and unhappiness.

The future now opening before us begins already to reveal new doctrines, if possible, more than ever out of harmony with cherished associations of thought. It is therefore desirable that, when we contrast ourselves with the rude and superstitious savages who preceded us, to remember, as cultivators of science, that the comparatively high places which we have reached in the scale of being have been gained, step by step, by a conscientious study or natural phenomena, and by fearlessly teaching the doctrines to which they point. It is by faithfully weighing evidence without regard to preconceived notions, by earnestly and patiently searching for what is true—not what we wish to be true, that we have attained that dignity which we may in vain hope to claim, through the rank of an ideal parentage.

ATMOSPHERIC PHENOMENA OF THE BOSTON FIRE.—The Signal Service Observer, at Boston, gives the following interesting facts connected with the late disastrous fire of Boston:

The induced currents of wind to take the place of the heated air rising from the fire flowed inward toward it through adjoining streets with great velocity, so much surpassing on the lee side that of the prevailing wind that the fire itself was driven to windward. He reckons the velocity of this indraught on the lee side at 30 to 35 miles per hour, making the fire somewhat like that of a blast furnace. The heated air, gases, smoke, and steam in rising took, as might have anticipated, a spiral movement. A reversed parallel to this tendency of fluids under the influence of gravity to assume the spiral motion when the central portion is withdrawing and the deficit is supplied from the sides, is seen when the plug at the bottom of a basin of water is removed and the basin is kept full from near its edge. An accomplished German mathematician has reconstructed the entire nebular hypothesis on this principle of the tendency of gravitating fluids to form spiral vortices. It was asserted that at the great fire of San Francisco a building was seen to leave its foundations, bending over and falling into the flames as if drawn in by suction. With such facts as the present before us, that statement seems less improbable. The circumstance that the Boston observer's thermometer rose five degrees at a distance of 2000 feet from the fire and directly to windward, gives some notion of the intensity of the heat. One of the dispatches from this fire mentioned a circumstance similar to what was averred to have frequently occurred at Chicago—that flames broke out ahead of the fire in buildings it had not yet reached.

NEW METEOROLOGICAL THEORY.—Mr. F. Capen, according to the Harrisburg (Pa.) *Mercury*, who is a member of the American Meteorological Society, and who has devoted many years to studying the weather, believes he has found the key to the whole meteorological system of the globe. He is now in Hartford, and the *Times* of that city tells us that so confident is he of the verification already obtained of the principles which he has finally adopted, that he has accepted from General Myers, Chief of the Signal Bureau at Washington, a proposition to submit this theory to an extraordinary test. He desires Government aid in the prosecution of his work of investigation; and to test the reality of what he believes he has already discovered, he accepts a proposition to foretell the weather seven days in advance, and he offers to continue this seven-day test for a time long enough to satisfy the Government of the truth of his principle. His claim may seem preposterous to scientific men generally, but meteorology is making rapid strides, and if the "clouds that lower on our house" may be foretold by seven hours, why not by seven days?

SENSITIVE STREAMS.—Professor Edwin J. Houston, while spending a summer's vacation in Pike County, Pennsylvania, discovered the sensitiveness of water to sound waves. Among the many beautiful waterfalls of that section, he found one scantily supplied with water, which dripped in small streams from the ends of the moss covering the rocks of the precipice—the air being still, and the stream free from ventral segments. And it was found that on sounding a shrill falsetto note the stream would instantly respond, and change the grouping of the drops and the position of the ventral segments. A heavy rain, however, flooded the stream, and prevented further investigation.

FARMERS IN COUNCIL.

Farmers' Club of Sacramento.

The club was called to order by Vice President Maslove and the minutes of the last meeting were read and approved.

Labor.

This subject being again called up George Rich said: Webster defined labor as exertion of muscular strength or bodily exercise. We are commanded to work by the sweat of our brow. No one was placed on the earth to be a drone, or to live by the exertion of others. In the primitive times labor was performed with more muscular strength, slower progress and fewer implements than at this enlightened age.

Then the rough implement of a plow was made by a crooked stick, with the sharpened end pointed by a piece of iron, used to work up the land. Grain was cut with a sickle mainly by muscular strength, bound and ready to thresh by flails, making it tedious and slow, but in this enlightened age, the tillers of the soil will not be satisfied until their land is upturned by steam, their grain cut and threshed by steam and all the hardships to be accomplished by steam and horse power.

The deep thinker and close worker is constantly devising and arranging plans to lessen bodily exercise, and perform the greatest work, in the shortest time, for the least expense. Wealth and influence is the crowning point that man aims to attain, and all are pushing forward to reap the reward of their labors. Thus the key note to wealth and high attainments of life lies in the small word labor.

Cheap Labor.

At the present age manufacturers, merchants and tillers of the soil study to perform this work with the least expense possible. If it cannot be accomplished by white labor others are brought into requisition—such as the Mongolian race, as thousands are now at work in our State, employed on our farms, in our mines, manufactories, stores and dwellings, learning fast our ways and mode of working. Alarming predictions were manifested on their coming among us, and deep hatred was felt against the race by the working class. Reduction of wages followed, and many left for parts where they had not entered. The revulsion is now gradually subsiding, and the social system is working with better effect.

Their adaption to working in our garden-fields, hoeing, picking of fruit, hops, and other labor connected with the farm, are fast filling the place of white labor. Whether it will result as an injury in promoting and advancing agriculture, time may tell the result. In examining the statistics I find previous to 1853, not over 40 arrived in the United States, but at the opening of the gold discovery there was a sudden and enlarged rush to our shores.

In 1854, there were 13,110; in 1855 to 1867 inclusive, it varied from 2,500 to 7,000; in 1868, 10,684; in 1869, 14,902—the largest ever came in one year; in 1870, it fell to 11,051; Chinese females, 2,144; grand total, male and female, during the half century, is about one-twenty-fifth of the arrivals from Ireland and Germany.

Now suppose, instead of the immigration from the Flowery Kingdom, there came the same number of stout, hearty Germans fresh from the fatherland, entering our shores during those years, colonizing or distributing themselves in our valleys, along the hillsides and mountain ranges, with their families, making it their permanent home; resolving themselves into the mass of American society; acquiring our language; honoring our institutions; worshipping our God; unequalled in industry and skill; helping to build schools of learning and filling the same; and aiding our flourishing State to wealth, affluence and distinction in the eyes of the world.

Not so the copper-colored race from the China seas; they having only one notion and aim in life that they desire, and that is the accumulation of a few hundred dollars, and then return within their great walls, shut up from the outside world, encircled in their homes and spending the remainder of their lives living in comparative ease and independence, and moving in the higher circles of society.

They improve not our lands, do not help our society, advance or promote any interest in our land; their religious faith—the growth of Buddhism; mingling in their own society; speaking a different language; subsisting on a very small amount of food, and that principally from their own land, and in any way, shape or manner no comparison to those of European extraction, or their increase to our population, as to permanency, no benefit whatever. Still, as they are with us, we will have to make the best use of them we can.

A Comparison.

Right here I might add my experience as to what nationality I have found the best adapted for field-labor and general work in all its branches, within the last fifteen years of farm-life, which principal branch has been the cultivation of "small fruit" as a specialty. I have had the Englishman, Irishman, Scotchman, German, Canadian, Yankee, Southerner, African, and, last, the Chinaman. For general work in all departments I have got more work from the German, and for small fruit, the Chinaman, which I must give him that benefit, if he receives no other.

I believe in well treatment of all laborers. Give them plenty to eat, good beds to rest their weary bodies on, and if there is any work in them you will surely get it out of them. In regard to picking "small fruit" it is hard to find a white laborer that can stand in a stooping position from sunrise to sunset, through the long summer days, with the thermometer ranging from seventy to ninety degrees in the shade. Their adaption to picking the leaves of the tea plant in their own country, drying and manipulating with long fingers, gives them a "knack," if I may so express it, in nipping off strawberries especially, and working nimbly in picking off, fruits as well as hops, etc. As we have referred to emigration in our land, this brings us to another vexed question, which has troubled us ever since the early emigrant plodded his way across the dreary plains up to the present time.

Large Landholders.

I refer to grants, and large land-holders. No doubt if all our land had been public domain our State would be thronged with hardy laborers of every nation, creed and sect, making her productive soil richer in produce, as her mines have been in richness in ore. Until the difficulty is removed by legislation so long will she suffer by the result. California would be millions of dollars richer to-day had not the Mexican system been practiced, or the second cause, our land system of private entry. California, perhaps pays higher rates of wages than any other State.

Still the work done by our class of men does not correspond to its value, and for what reason, may I ask? Because we have a large idle population congregated throughout our cities and towns while plenty of work stands facing them every day of the year. Why is this so? It is the extravagance of life, and ideas born in them during the flush days of our State. And the children are impressed with the same idea—thinking something may turn up that will make life easy without much work. It is estimated that seven-tenths of our children are born on the farm.

Why is it that when they reach their teens, they post to our large cities seeking pleasure, rather than dwelling in their rural retreat. If parents would lay aside a few acres of land, calling it their own, improving it, and encourage them to labor, and impress on their minds the benefits so derived, there would not be so many dislike farm labor. One-fourth of our population to-day reside in San Francisco, and one-fourth of the balance are distributed in the next six large cities, the remainder throughout the State.

Agricultural Schools.

Besides our common schools, which is a great benefit to all classes, we need an agricultural one attached to our seminaries of learning, so that our farmer's sons may pass through the various branches that are taught in that system—making them better farmers and better men. Great Britain has two institutions where agriculture is taught. One in England, and the other in Scotland. Both are in a flourishing condition.

In the former place 500 acres is set aside for that purpose, thirty acres for experimental gardens. They have daily practical exercise. Each student keeps a daily journal. Lectures are given. A farmers' club is attached, and the professors mingle with the students, assisting them on different subjects and topics pertaining to farm life. There are also schools in Germany, Prussia, Saxony and Austria. There are many leading ones in the Eastern States, increasing in numbers and accomplishing great good.

California should bestir herself in this great enterprise. I am glad that our wise Legislature has laid the foundation and connected it with one of the colleges—the State University—guaranteeing to every child the general culture, special training, and to enlighten all labor, to exhibit the practical applications of science, and the culture of varied products, the development of our mineral wealth, our manufactures, and making every provision for the better knowledge of every point of interest to our State.

If all parents of the State will foster and encourage the young and rising institution in our midst there would not be so many of our young men and farmer boys seek the gay life of the city, nor no hoodlums prowling in our streets at the dead hour of night. In conclusion, I hold that if the educational system in all its branches were strictly attended to the labor system would not be in such a low state as it is at the present time.

Greenlaw said: I like the sentiments expressed by Rich, in the main, especially those in reference to our educational institutions. I have not the Chinese on the brain. I am opposed to the employment of Chinese labor principally on account of the effect on the white classes. Many of our best and most conscientious class opposed African slavery more on account of its degrading effects on the whites than the real injury to the African.

The advocates of slavery resorted to the same argument then that the advocates of Chinese labor do now—necessity—that they could not get along and continue business without slave labor; that the slaves were better off than if free, etc. The emancipation proved all such arguments fallacious, as similar arguments in favor of Chinese labor are most surely so to-day. We do not any of us like to associate on equal terms in any capacity with degraded men—men who are not our equals before the law and customs of our country, and we should not seek to force our white laboring

men and women to do so, as it will tend to degrade them rather than elevate those who, in the nature of things, must remain degraded socially and politically. It is true business men generally have an eye to profits, and do not care much about other matters.

Chineses at the East.

I notice in to-day's Union that the manufacturers in the Eastern States are introducing Chinese into their factories, while thousands of white laborers are out of employment. Give white laborers encouragement to come here and we can have a plenty of them. The dealers in agricultural products and the common carriers figure on the cost of production as well as the farmer, and they figure so close that they manage to take all the profit, leaving us farmers only enough barely to support ourselves and families.

These men encourage cheap labor that they may thus increase their share of what we produce. These men are men of influence; they control public opinion and the law-making power and the Courts in their own interest. The spirit of our institutions and their original design was to preserve our public domain for the actual settler, but how widely have we departed from that spirit and design in practice. This change has been brought about by these men of influence against the interest of the great body of the people to increase the wages of their own labor.

One trouble to-day is that we allow these men to take too much for their labor, rather than the poor day-laborer receives too much. Let us reduce the wages of these monopolists first, rather than oppress the poor day-laborer. This side of our subject needs ventilation and agitation. Public opinion should be directed to this side of our question, and should be crystallized into a law regulating freight, commissions, etc., and the best place to ventilate this subject is our Farmers' Clubs, and I am glad to say that it is claiming a good share of their attention.

Lockett—Said he came more to listen than to talk; but he had taken a lively interest in the discussion, though he had not been present at the last two meetings. He had read the reports of the discussion in the press. He would say that he thought some of the speakers had shot somewhat at random. Mr. Johnston, for instance, had produced some figures which he must notice. He estimated skilled labor for which we pay \$2 a day, gave us a net profit of \$2, and unskilled labor that costs \$1 per day, a profit of \$1 per day. We realize no such profits from the labor itself; they come from the increase or rise in property. Do not employ Chinese labor, had tried it some, but had not found it profitable. Agrees with Rice on this subject.

Evils of Middlemen.

Denton—The troubles of the farmer arise more from the extortions of middlemen than from those of common laborers and our efforts should be directed to get rid of these evils more than the wages of labor. We must unite our interests—form associations for co-operation in the disposal of our products more immediately to the consumers—cut off the profits of the middlemen. The laborers of the country, in the different departments of industry, are the principal consumers, and so long as there are so many standing between them and us, to collect toll off of our products before they reach the consumer, so long the laborer must have high wages to live.

Look at our towns and cities, and count the number of dealers and clerks standing behind their counters, and reaping profits greater than the producer and increasing the price of those products to the consumer. It is this swarm of middlemen that forces the farmer to look about him to see if he can find cheap labor; it is this system of extortion that introduces Chinese cheap labor.

Hoit said all this talk against cheap labor is mere sentiment. The man who condemns most is generally the one who employs it first. I have seen men as day laborers condemn Chinese labor violently, but a few years later, becoming proprietors, employ no other. Man is a creature of circumstances, and he who does not seek his own interest is not likely to succeed very well in life. We may as well preach the same doctrine we practice. The fact is, that there is a scarcity of white labor in this State and we, as practical men, employ Chinese as a substitute, and find it necessary and profitable to do so.

We have work enough for all, and would have if there was ten times as many in the country. We must improve our machinery, and invent labor-saving machinery. The more of such machinery the more necessity for human laborers; the more cheap labor we have, the more work we have to do, the greater the prosperity of the whole people. The faithful white laborers have no reason to complain; they often become well off when their employers remain poor. We cannot regulate wages by talk.

Greenlaw—Mr. Hoit's laborer who condemned Chinese labor, but as a proprietor employed it, reminds me of that oft-quoted definition of vice by the poet. At first he saw the vice in all its deformity, but by constant contact his sensibilities became blunted, and he embraced the monster as a necessity—a virtue.

Rutter—The spirit of our declaration of independence and of our system of Government is to invite all to come and enjoy the blessings of our asylum of the world, and why exclude the Chinese? The Negro in his native country to-day, and in the South, is better off than he would have been if African slavery had never

been introduced in this country. I do not believe in the mixing of races, but it is destiny and we can't help it. Our laws and customs invite all foreigners here, and you can't make an exception of the Chinese. And being here we will employ them if we can make it profitable.

On motion of Lockett, the subject was laid over one week.

On motion, the Secretary was requested to have the dues of each member brought up to next Saturday, the day of the annual election of officers, and the club adjourned one week. —Daily Record.

Sonoma County Farmers' Club.

Reports of Committees.

Mr. Jerry Farmer, for the Committee on hall, reported that he had made arrangements with Mr. Morrow for the lease of his hall, for one year, at a monthly rental of twenty dollars. He had consulted with the other members of the committee and it was agreed to report action and recommend the leasing of the hall upon the above terms. There is an opportunity to sub-let it and thus reduce the rent.

On motion report adopted.

There being none of the Committee on Library present, a member said he was present at the consultation between the Club and Library Committees, and it was agreed that each organization appoint a committee of five to carry out the union between the Club and Library Association. It was further agreed that the society should be called "The Citizens and Farmers' Union Library Association of Santa Rosa."

President Holmes said he was one of the committee, had conferred with other members, and it was understood the Club should appoint five members to act for it in the incorporation.

Mr. Coulter—Is it incorporated?

A member said a joint committee were to provide for the incorporation of the Society.

Mr. Farmer said that the Library authorities had done all that could be done on their part. It now remains for the Club to appoint the committee.

Moved and carried that report be accepted and the President appoint the committee.

The President appointed as such Messrs. Coulter, Maslin, Adams, and Thompson.

Mr. Whittaker moved that the present Committee on Halls be and continue the permanent Committee on Hall with power to lease and to furnish it with suitable furniture. Carried.

Mr. Farmer stated that the committee appointed by the State Farmers' Union to prepare an address to the farmers had completed its labors and that the result was a majority and a minority address, and he thought it would be interesting to have them read to the Club.

On motion it was agreed that the addresses should be read at the next regular meeting.

Incorporation of Clubs.

Mr. Rector said: I desire to renew my motion that the Club should take some steps toward incorporating. If we want to bring the farmers throughout the State into co-operation, it must be through the incorporation of the State Club. I am asked how this can be affected? I reply. Let the State Club incorporate under the general law providing for incorporations. Let each Farmers' Club in the State take or subscribe to the capital stock or take so many shares. I believe this is one of the readiest and surest means to effect our object, and I hope that our Secretary will correspond with the Secretary of the State Union upon this question and suggest to that officer the necessity of incorporating the State Club. Meanwhile our Club can go on and incorporate under the general law. We need not pay in but a small percentage of the capital stock. Unless we do so organize I am afraid we shall effect but little. Talk will do us no good; we must act.

Mr. Maslin suggested that the general law of incorporation contemplated a capital stock divided into shares, which were transferrable, and that by such transfer, in time the farmers might lose the entire control of their interests, to protect which they have now organized.

We are not organized for profit or to declare dividends; the element of our organization is a social one, and when we surrender this, we lose the power we now possess of determining who shall be our associates. There is a special law under which we can incorporate, and under which we can retain this power. Mr. Maslin then read the two laws, insisted that the special act was the only one which met the purpose of the Club.

Object of Incorporation.

Mr. Rector said the idea of incorporation had been misconceived by the last speaker. What we want is money and credit; money moves the world, and we want a Club to make money. The social quality was well enough, but we want to export and import merchandise, ship our grain, and import bags, organize farmers' banks, etc., and we must have capital stock to do this.

Mr. Maslin said that he did not believe the Club, as a Club, desired to make money, but the purposes advocated by Mr. Rector could be accomplished by the Club without a capital stock. It would be fatal to the interests of farmers if, while attempting to make money, they should lose their power to control the operations of the incorporation. The social element of the Club must be preserved intact.

Mr. Hoen said it was too early to talk of in-

corporating. Why should we incorporate and what for? Shall it embrace importing, exporting, banking, and merchandising? We as farmers want cheap money; we want a bank right here in Santa Rosa, where we can get money at low interest. Now if we incorporate generally, one will want the corporation to do one thing, and one another thing. We must have one special thing in view and incorporate for that purpose. We have land and labor plenty, and now we want what Stuart Mill calls the checks. Let us first determine what we want to do before we incorporate.

Mr. Coulter believed it would be better to organize under the special law; otherwise under the general law, we might find those inimical to our interests buying the shares of stock and working to our disadvantage. Of one thing he was satisfied; that we must incorporate. In this age all great enterprises are carried on by corporations; greater results are thus obtained than by individual efforts.

Mr. Rector said great results cannot be obtained without money, and the way to get money is by assessment of stock or payment of portions of capital stock when called in. Money will give us credit and we can go into the mercantile world, as any merchant, with capital and credit, and on that credit buy and import what we want.

Mr. Whittaker in the chair.

President Holmes said that the shares of stock, if we incorporate under the general law, would be transferred and finally the farmers would own none of it. We ought to have the power to say who shall belong to our association, and to judge if they will be faithful to our interests and if they are not to expel them. Under the law cited by Mr. Maslin, we have that power, while under the general law we will not. We may not be able to go into such large enterprises, but perhaps we may make haste slowly, which is better. I therefore move that at the next meeting the Club proceed to elect trustees for the incorporation under the special act.

Motion put and carried.

Mr. Rector offered the following resolution, which he hoped would pass:

WHEREAS, The State Farmers' Union have published an address to the Farmers' Clubs, in which they are invited to make suggestions in relation to forming a closer and more efficient organization. Now, therefore, The Santa Rosa Farmers' Club would respectfully suggest that the Farmers' State Union should incorporate, and that the State Club recommend that the several County Clubs should likewise incorporate, and take stock in the State Incorporation. After some discussion the resolution was adopted.

The Secretary was instructed to forward a copy of the resolution to the Secretary of the State Union.

Mr. Rector read a letter to him from merchants in Liverpool, in reference to the shipment of grain the coming year. The Secretary was instructed to correspond with the writers, in reference to the subject of the letter.—*Santa Rosa Democrat*.

Santa Rosa, Dec. 7th, 1872.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

President Casey presiding, Saturday, December 14th, 1872.

A communication from the Department of Agriculture, Washington, D. C., requesting all agricultural societies to elect their officers in May, and at once forward their names to that Department, that it may with much more accuracy and dispatch forward documents and seeds to all parts of the country; referred to the Board of Managers.

Taxing Growing Crops.

The Committee on the Taxation of Growing Crops reported as follows:

SAN JOSE, Dec. 14, 1872.

We, your Committee, beg leave to report, that we find nothing in the Constitution of the State, its statutes, the decisions of the Courts, or any where else, warranting the taxation of growing crops, other than the authority of the late Code Commissioners, and the State Board of Equalization. We also report that we consider the undue exercise of such authority to be in violation of the Constitution of the State, and without precedent. We would further report, that the matter of taxing growing crops, be referred for further action, to the Directors of the State Farmers' Union.

(Signed) C. T. SETTLE,
CALEB CADWELL,
WM. H. WARE,
Com. on Taxation.

The report was accepted and adopted, and the Secretary instructed to forward to the Secretary of the State Farmers' Union.

Mr. Buryland, as one of the Committee on Road Tax, begged leave to resign. He believes in justice, and he considers the proposition referred to him as unjust, and wants to have nothing to do with it. He thinks that the citizens of our incorporated town are taxed heavier for streets and roads than those in the country, and they should be exempt from the county tax of twenty-eight cents on the hundred dollars. The club would not accept of his resignation, but he was requested to make a minority report, if the other members of the Committee did not agree with him.

The committee to whom was referred the resolution, and communication of the Horticultural and Agricultural Club of Vacaville and Pleasant Valley, reported against selling package, case or box with the fruit, as the return freight from San Francisco, our present market, is much less than the cost of new boxes; but, if sent to a distance, we had better try some kind of cheap box, as recommended by our friends at Vacaville. They thought the true way to avoid the difficulties mentioned, was to sell direct to the retail sellers, and not through middlemen or commission merchants. There is no use be-rating middlemen so long as we patronize them. The report ended with the following:

Resolved: That this Club will coöperate with the other clubs in such measures as may be thought best calculated to reduce the unnecessary expense of marketing fruit. On motion the report was accepted.

Mr. Erskine thought the report good and moved its adoption. Mr. Holloway thinks we should let no opportunity pass of entering our protest against the City License system. It turns us and the small dealers right over into the hands of the unprincipled commission merchants. The present license system is responsible for the extortions carried on. The report was adopted.

The committee on the City Market Proposition reported that the managers would give the club two stalls and a hall in which to meet, all free of rent, provided the club carries on business, and there will be no restrictions as to what shall be sold except that the farmers or their agents shall retail no meats.

W. W. Kennedy said that he considered the object of the managers of the markets in making the offer was to have a business carried on in the stalls—and that the club better be careful in the agreement made or it may lay itself liable for damages, in not fulfilling its contract, as to carrying on business according to agreement.

Mr. Spencer said he had spoken about taking the agency, and carrying on the business, but he did not want to have anything to do with it unless the farmers would bring in their produce for sale, and keep the thing going.

Mr. Burrell said he would bring in his winter fruit as soon as the stalls were ready.

Mr. Holloway moved that the present committee be made permanent, and that the whole matter be left with the committee, with power to make the best arrangement they can, which was carried.

Mr. Libby said he was constantly in receipt of communications from young men in the East. They are good moral young men, who have been in the habit of sleeping in houses and not in straw-stacks or barns. Men who have always moved in a family circle, wanting to know if they could get employment here. He desired the club to consider the subject and suggest a suitable answer.

Mr. Erskine moved that the subject proposed by Mr. Libby be adopted for discussion on next Saturday. He often received just such letters but could not give very favorable replies. The motion was carried. On motion the club adjourned.

Oakland Farming, Horticultural and Industrial Club.

Regular meeting Dec. 13th. In the absence of Professor Carr, Vice-President Webster, of Fruit Vale, presided.

Farmers' Union Address.

After the reading of the minutes of the previous meeting by Secretary Dewey, of the RURAL PRESS, Mr. C. H. Dwinelle, from the Special Committee appointed upon the address of the State Farmers' Club read the following report:

Mr. President and members of the club—The undersigned committee have read with interest the address to the farmers of the State by the Committee of the California Farmers' Union, and respectfully reports as follows: The general

Spirit of the Address

Is such as we heartily approve. It sets forth plainly and fearlessly some of the advantages and injustices from which the producers of this State are suffering. It also calls upon those who have been struggling alone, to unite themselves, and by combined counsels and resources effect those reforms which justice calls for. The plans of action are left to the Board of Directors of the Union. We hope that the gentlemen of that body will lose no time in taking steps, as will, in a measure, relieve the farmers during the coming year. Seed time is already upon us, and the harvest will not long delay. Whatever is to be done before another shipping season, must be done quickly. While the officers of the Union are in a large degree responsible for the planning and execution of wise measures, they are comparatively helpless, unless they are backed by the great body of agriculturists throughout the State. We would therefore strongly urge upon the tillers of the soil the

Necessity of Forming Local Associations.

In this county of Alameda in particular, do we see a want of action in this matter. While the soil is of unusual fertility, the population large, intelligent, and to a large extent living in and about villages where meetings could easily be held, there is but one farmers' club that we know of, and that is our own.

The farmers who neglect or refuse to come

forward and add their share to the general fund of experience and influence, must

Not Find Fault

With the mistakes and weakness of those who are doing their best to improve matters.

If these associations were formed among those bound together by some local circumstance, how often they might be of

Great Advantage

To their members. Those using the same landing or railroad depot could, through a committee representing their aggregate patronage, in many cases, secure much better terms as to storage and transportation than would be granted to an individual. So too, a number of men holding under the same grant, and wishing to raise money for carrying on their legitimate business, could select one or more of their number having a good business reputation to negotiate their loans for them. This would save a great deal in time and traveling expenses, as most of the parties need not trouble themselves about the matter until the papers were ready for signing. The magnitude of the loan also would be likely to attract the attention of capitalists having large sums to loan at reasonable rates. Then the expense for search of titles, which is often very heavy, could be divided among those on the same rancho, and exorbitant broker's fees could be avoided. As soon as practicable,

An Agent of the Farmers' Union

Should be appointed and authorized to collect information on modes of transportation, channels of trade, chartering of vessels here and in foreign ports, cost of sacking, agricultural machinery, etc., money borrowing, and kindred subjects.

The work of such an agent would require all the time and ability of a first-rate business man, and should be well paid for. To provide for the salary and proper expenses of this agent would require but a small contribution from each member of the Farmers' Union, when that organization reaches the magnitude which we hope it may speedily.

There is need, also, of some careful law-making

In Regard to Taxation.

It is now notorious that in case property is mortgaged, its value may be taxed virtually three times. Changes should be made on this and other points, so that improvements in the way of erecting buildings, planting trees, etc., might be encouraged rather than prevented.

In attempting to improve the condition of the producers of the State, there are several things which as reasonable men we should constantly bear in mind. Perhaps the first should be that it is useless and in bad taste to call our opponents by hard names. There is more to be lost than gained in every way by that childish game.

Good Business Management

And not loud words is what we must rely upon. Our executive officers also must be men of prudence and energy, who will not neglect the trust given them.

And, above all, let us strive for justice, and not for the creation of a new monopoly. The great point to be gained is to bring the producer and the consumer into more direct communication, for their mutual benefit.

J. V. WEBSTER,
CHR. BAGGE,
C. H. DWINELLE.

Adjourned to Dec. 27. Further Report next week.

The Modoc War.

Having just returned from Oregon by the stage we saw many parties just from the "front," heard the stories of the old settlers, and were so fortunate as to secure an interview with Mrs. Brotherton, whose husband and sons were killed by the Indians, and who has done the main part of the Indian fighting thus far.

Let us introduce the heroes of the war:

Mr. Odeneal, Superintendent of Indian Affairs; Major Mason, U. S. officer in command at Ft. Klamath; Major Green, old Apache-fighter, now in command of forces operating against the Indians; Messrs. Fairchild and Dorris, settlers at Hot Creek, who have had a part of the Indians in their employ—who have trusted and befriended them and have tried to secure a peace; Sconches, Chief of the Modocs, still remaining quiet at the Klamath Reservation. The other bands seceded from Sconches then from Captain Jack; Captain Jack, Chief in command of the fighting Indians, who says he would rather die fighting for his home than starve on the Reservation; Scar-faced Charley, interpreter to Captain Jack; Rock Indians, a party of 8 braves who left Captain Jack, established themselves in a cave 10 or 12 miles away, and gained the name of lawless, hard cases; Black Jim, Chief of the Rock Indian party; One-eyed Mose, Long Jim, Rock Indian Dave, members of the above party; Hot Creek Indians are 35 in number and have been living by their work about the settlements at Hot Creek.

The Seat of War

Is on Tule lake in the northern part of this State, 70 miles east from Yreka. Lost river empties into the north-eastern end of Tule Lake. On the south-eastern side settlers have been

living, and on the opposite side Captain Jack's party. On the south-west end of the lake is a very rough country, said to be a lava country, where they report that the Indians have their supplies laid up in a very large, and almost inaccessible cave, with plenty of fresh water running through.

Capt. Jack had trouble with Sconches and the agents in charge, and finally obtained leave, two or three years since, to leave the Reservation on a fishing and hunting excursion. He found this place in Tule Lake unsettled and chose to stay there. Foreseeing that he would be sometime ordered back to the Reservation, he has been for a long time securing arms, training his men, and laying up supplies in his chosen cave.

His Policy

Has been to manage his tribe so as to cause as little trouble to the settlers as possible, in hope that the day of trouble might be delayed. In this he has been thwarted by the Rock Indians, who were determined to live by begging and stealing, and who went off by themselves to enable them to secure this end the better.

They committed depredations. Settlers applied to the Indian Agent for relief. He tried to persuade them to go back on the Reservation. They refused to go. He telegraphed to Washington for instruction, and was ordered to turn the business over to the military. They went down to make arrangements with Jack, and arrived very early in the morning, but did not expect a fight. Whether a party was sent to notify the settlers we do not know. They failed to receive this notice. On Thanksgiving morning about 35 of the soldiers held a parley with Jack's band numbering 60 to 80 braves. Scar-faced Charley appeared and did the talking for half an hour, when the U. S. officer in command ordered the Indians to lay down their arms.

The Battle

Began with this order, for Scar-faced Charley, from his position in the tules, fired on the Lieut. in command, then dropped out of sight to get ready for another shot. Then the firing became general and the Rock Indian braves, who were encamped on the other side of Lost River, started off to murder settlers. In the battle the Indians were driven off, but it is not certain that any of them was hurt. The soldiers suffered a slight loss.

The Murders

Were done by Black Jim's party, who found the farmers about their work and killed fifteen of them. Mr. Brotherton and his two sons were among the number. They then started in pursuit of another son, who ran to the house and was rescued by the appearance of his mother with the Henry rifle. In view of the danger they halted a little, giving young Brotherton time to reach the house. Besides the Henry rifle Mrs. B. was supplied with plenty of ammunition, two good revolvers, some other rifles and some flour, all very desirable plunder for the Indians. Mrs. Brotherton and her son did considerable shooting at the Indians, who appeared occasionally for a day or two. Mrs. Brotherton says her son shot one Indian through the hand, but she does not know that they did them any further damage. The same men had been trying only a few days before to buy her rifle and some flour.

They are not reported to have killed any women or children thus far. After Mrs. Brotherton had succeeded for a couple of days in defending her home, a party of citizen volunteers came to her relief. They invited the Indians to battle, and burned her hay-stack and barn to prevent their being used as cover. She says that those Indians, who murdered her husband and her sons, must not be taken back to the Reservation for she has a debt to pay them. Her sparkling eye and firm set mouth tell a story of revenge.

These Indians are on the Shoot,

For she says she has often seen them riding at full speed along the shore of the lake, and shoot wild-geese as well as if they were sitting still. They have Sharp's rifles, Henry rifles and Needle guns.

Fairchild and Dorris went with 3 or 4 of their Hot Creek Indians to Capt. Jack's camp, and had a long interview with him hoping to get him to go on the Reservation. He said that he had had not countenanced any murder of settlers, and would prevent it in future if possible, but would fight the military, and would not go on the Reservation.

They made arrangements for an escort, and were going to take the Hot Creek Modocs to the Reservation on the next day, but when they awoke the birds were flown, and it appeared that they had been making bullets by the hat-full. It was no longer considered safe to remain there, and the white settlers moved their families away next day.

The Forces in the Field.

Have been variously estimated, but with the additions of the Hot Creek Modocs, they must number about 120 braves. There are operating against them the military at Fort Klamath, two companies of 75 regulars from Vancouver, citizens from the vicinity of the trouble and volunteers from Yreka, Ashland and Jacksonville. There are probably from 250 to 300 men in the field, well armed and equipped. It is the general impression that the Indians will retreat to the lower country as soon as they are pressed to fight and that it will be very hard to do any better than starve them out, if they get there. c.

WHAT cannot be cured must be endured.

WELCOME is the best cheer.

WE carry our worst enemies within us.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention.

DEVICE FOR CHARGING DRILL HOLES WITH POWDER.—Francis H. Lavelle, Auburn, Cal. This invention relates to a novel instrument for charging the holes which are made by a drill for blasting purposes, with Giant or other powder, for the purpose of compacting it, preparatory to exploding the blast. A metal tube, or charger is employed, which contains the required amount of powder to charge the hole. A piston moves in this cylinder, and has a rod extending through the upper end of the cylinder, and through a tube which is screwed upon its upper end so as to extend to the required distance from the charger to permit it to be inserted in the drill hole while the operator retains his hold upon the tube. To use this charger the desired amount of powder is placed in the cylinder and packed by compression if desired, the piston being withdrawn by means of the handle as far as possible. The cylinder is then inserted in the drill hole and pushed down to the bottom; the piston is then forced down so as to force the powder out of the cylinder. If desired, the powder can be compacted in the bottom of the hole before removing it from the cylinder. This greatly facilitates the operation of blasting, as the powder can be placed in the hole without trouble, whereas, as at present used, it is often necessary to compact it in water, which fills the bottom of the hole, and the powder is consequently stirred into a pasty mass so that it will not do full execution.

IMPROVED SLIDE VALVE.—Henry Kessler, S. F., Cal. This is an improvement in that class of slide valves, which have a bearing against the top of the steam chest, in order to prevent the steam from getting above it, and thus permit the valve to move easily without a pressure of steam upon it. The improvement consists in employing two packing rings around the upper end of the valve, which are supported on springs so as to be held above the upper face of the valve. These rings bear against the under side of the cover of the steam chest, and make a tight joint, thus preventing the entrance of steam above the valve, which is thereby balanced, and the pressure on the seat materially reduced.

MILLING TOOL FOR TURNING LATHES.—Charles Rahskopf, S. F., Cal. This is a tool to be used in turning lathes, in place of the usual cutter or circular planer with a cutting face for milling down or cutting a stem or rod of any required diameter from a piece of metal. The improvement consists of an arrangement by which detachable planers or cutters can be employed in place of the ordinary fixed or permanent ones. These cutters are so arranged that they can be adjusted to or from the center as desired, in order to cut or trim a wider or narrower shoulder, with a larger or smaller stem, as required.

STRIPING IMPLEMENT FOR PAINTERS.—D. Lydon and C. Halsey, S. F., Cal. Freshly painted surfaces may be striped by means of this tool, which consists principally of a small wheel or roller which has a milled edge, and a small box which is properly placed to receive the paint which is taken up by the wheel. A hollow metal handle is employed, at one end of which a metal end piece is secured, so constructed that a portion of it will stand at an angle to the handle. The angular part is then divided into two parts, and a small wheel is placed between them so as to revolve upon a shaft bearing on the metal on each side. The edge or face of this wheel is milled. Directly above the wheel is a small metal box or wiper, the under side of which is slotted angularly, so that the upper portion or rim of the wheel will pass inside of the slot as it revolves. For striping, the tool is taken in the hand after a fresh coat of paint has been put on and the wheel rolled over the painted surface. The milled rim of the wheel will take up the fresh paint and deposit it in the box as it passes through the slot.

ROASTING FURNACE.—Martin P. Boss, Eureka, Nevada. The invention relates to a novel interior arrangement of that class of roasting furnaces which are known as upright or stack furnaces, in which the pulverized ore is fed into the top of the stack so as to fall to the bottom through the flame and products of combustion from the furnace. The improvement consists of a narrow zig-zag flue in the lower half of the stack and a suspended frame in the upper half which fits inside of the stack. This frame is also provided with a zig-zag opening or flue which passes down through it. The frame is suspended from a shaft which passes across above the stack and from which it receives a jarring or shaking motion by which the ore is caused to fall from one incline to the other.

IMPROVED CAR COUPLING.—Elisha T. Barlow, San Francisco. This is an improved self-acting car coupling by which two cars can be con-

nected together without the presence of an attendant to enter the link, as the bumpers come together, thus preventing any chance of accidents. It consists of a simple attachment, which can be readily applied to the drawheads at present in use, by which the pin or bolt which confines the ends of the link in the drawhead is held in the proper position to permit the entering link to automatically release it and allow it to drop through the link to the holding position. The pin is secured in a frame called a pin holder, which passes down through an opening in the drawhead back of the pin-hole. This pin holder can be raised bodily so as to lift the pin sufficiently to let the link pass beneath it, and a trip lever serves to support the pin holder in place. The entering link forces the trip lever back until it allows the pin holder to drop and the pin passes through the link so as to hold it in the usual manner of a link and pin.

The Cause of the Advance.

As a general thing, the price of wheat in California is regulated by the quotations of the Liverpool market, where the most of our surplus grain is sent. The sudden rise in this State within a few days from \$1.75 to \$1.85, when the Liverpool quotations show a decline of 2d per cental in the same period, demands perhaps, a little explanation. Long before the harvest commenced, certain monopolists, backed up evidently by the Central Pacific Company, and other moneyed rings, secured by means of their information and their agents abroad, the charter of every vessel likely to arrive in San Francisco for months to come. These charters were secured at a reasonable rate, but having the power in their hands, they unscrupulously added from twenty to thirty per cent. more on the freight charges, which the farmer and producer had to pay by an unwarrantable reduction in the price of their grain. The news of these exceedingly high freight charges spread far and wide, and ship owners refused to charter more vessels to the ring, preferring to reap the advantages themselves. The consequence is that the vessels now arriving are bound by no previous contract with the ring, and a fair competition has brought the price of freight per ton down to a reasonable figure, which allows a fair margin of profits for the ship owner and vastly increases the farmers' profits. This price or a higher one, would have been attained from the commencement of the shipping season but for the action of the monopolists who secured the vessels and mercilessly robbed the farmers of at least ten cents per cental on over 5,000,000 cents, which have already been exported, and as many more now lying in the warehouses, which amounts in the aggregate to over \$1,000,000 obtained from the farmers of this State by these soulless grabbers, and yet when an election is called these same farmers give their whole support to the candidates put forward by the rings who wax powerful and wealthy upon the labor of the farmer.

We clip the foregoing from the San Joaquin Republican, a paper that dares to put some wholesome truths in the minds of its readers, even though the Commercial Herald, of San Francisco—in the interest of the monopolists—declares it wicked to publish an address based upon the precise facts and truths as set forth in the RURAL weeks ago, and reiterated by the Republican as above.

SAVING FOOD BY EATING IT.—"Bad cookery," says Prof. Jewell, "has destroyed more men than famine, pestilence, or war." We would place also to the account of bad cooking half the quarrels that separate those who should be friends. Heavy bread, soggy pastry, leathery meat, muddy coffee, water-logged potatoes; how is it possible for any human stomach to keep good natured on such diet. Yet in how many families poor bread is the rule and not the exception. One week it stands a little to long before baking, and is sour; the next time it doesn't stand quite long enough and is heavy, the next time it is baked too quick, or not quick enough, is underdone or overdone (that rarely), and so three-fourths of the time many families have poor bread, and some never have any that is first-class from January to December. But do we condemn to the swill-pail all bad bread? If butchers sell us bad meat, or the milkman gives us chalk or cornstarch for the pure lacteal we feel grievously wronged. Yet we can put sour, heavy, soda ruined bread into our children's mouths and say our prayers at night with a clear conscience. If their digestive organs cry out, and they are fretful and insubordinate we charge their misdeeds to original sin or total depravity, when the sin lies at our own door. This eating food to save it is the falsest of all economy; it is economy that makes a man poor, poor in health, poor in flesh, poor in animal spirits, poor in genuine piety, and his life of few days and full of trouble. Let us have good bread. It is the greatest peacemaker in any family, and all time and strength invested in insuring a first-class article pays a compound interest. Thus in substance writes a sufferer from eating food to save it.

Wool in New York.

We have received *Waller Brown & Son's Monthly Wool Circular* of date Dec. 2d, 1872, from which we extract as follows:

With the approach of November the wool market showed signs of improvement, and at the opening of the month an advance of five per cent. was fairly established, with an active demand in which both manufacturers and dealers participated.

The exciting influences attending the late Presidential election having subsided, business appeared to have resumed a healthy condition, and confidence in the permanency of the improvement seemed to be shared by all the trade.

The disastrous fire at Boston, at which nearly nine million pounds of wool were destroyed, caused a sudden further rise of ten per cent. in the value of all wools, and large transactions took place during the week succeeding the fire. The market was for the time, excited; but dealers evidently had no desire to see prices reach the height attained last winter, being disposed to meet the market at current rates.

The long period of dullness had caused dealers to allow their stocks to run very low, and the sudden rise brought many of them into the market, along with those manufacturers who were in need of immediate supplies, and some few who probably, considered it prudent to lay in more than temporary stocks. Stability was thus given to trade, which has continued up to the present time, with fewer transactions during the past few days, owing, perhaps, to its having been "holiday week."

The heavy losses supposed to have been sustained by manufacturers, either directly or through their commission houses, by reason of the Boston fire, has naturally created some distrust in the matter of credits, and until the real status of manufacturers is ascertained, this feeling will, no doubt, more or less prevail, and to that extent will have its effect upon the market.

Many sales were made immediately after the fire at rates relatively high compared with present quotations, which induced numerous consignors to virtually withdraw their wools from market by limiting the price, in consequence of which, transactions have been restricted.

The supply of fleeces wools in the market is very moderate, and the receipts from the interior continue small.

PULLED WOOLS, which, for a long time had been much neglected, were in better demand during the latter part of the month. Light, strong stapled parcels of extra and super have sustained an advance of fifteen per cent. Stocks generally are light.

TEXAS WOOLS have sympathized with the general advance, and most of the supplies in first hands at the beginning of the month, have been disposed of at full quotations.

CALIFORNIA WOOLS. Transactions have been large in all grades, both of spring and fall clips; but most holders, owing to the high cost of these wools, have not met the market freely, and consequently have large invoices still on hand.

FOREIGN WOOLS. Throughout the month there was an active market for all classes of clothing wools with a steady advance in prices. The limited supply of fleeces in the Eastern markets caused a lively demand for all descriptions of foreign warp wools. The supply is greatly reduced.

Prices Current of Wool at New York, December 2d, 1872.

DOMESTIC FLEECES.

OHIO, PENNSYLVANIA AND VIRGINIA.

Saxony Fleece.....	70¢	3/4 Quarter-bld Fleece.....	65¢
and Full-Bld Merino.....	80¢	7/8 Common Fleece.....	63¢
Half-bld Fleece.....	58¢	7/8 Combining Fleece.....	75¢

CALIFORNIA.

Spring Clip, fine.....	43¢	Fall Clip, A 1.....	30¢
Spring Clip, medium.....	43¢	Fall Clip, 1w gds & b r.....	25¢
Spring Clip, 1w gds & b r.....	33¢		

Tobacco Culture.

J. R. Culp, of Gilroy township, has demonstrated to the entire satisfaction of experienced tobaccoists, the feasibility of growing and curing tobacco in this country, which is but little if any inferior in quality to that grown on the Island of Cuba. In fact, cigars made from this tobacco have deceived the best experts in that line, as was demonstrated a few days since on the occasion of a visit of a number of San Francisco tobaccoists to his works. As we stated, some time since, in describing Culp's tobacco works, he claims by his process of curing—for which he has obtained letters patent—to accomplish for tobacco the same results as are produced by the hot, moist climate of Cuba. In other words he holds the only difference between the tobacco of California and that of Cuba, is the excess in the former of nicotine and other volatile oils; and that by this method of curing he expels those obnoxious oils. The results he has obtained fully confirm this theory. By this process of curing the culture of tobacco can be made immensely profitable in this country, where the soil is adapted to its growth. Mr. Culp's last year's crop—some twelve thousand pounds—for which he has been offered fifty cents a pound, cost not to exceed three and a quarter cents.

We do not know what price Mr. Culp would ask for the right to use his process for curing the tobacco; but we presume it would not be such as to be burdensome upon the producer. The profit is so immense that the producer could well afford to pay liberally for the royalty. The

whole secret of curing could be acquired in a short time by any one of ordinary "gumption." —*San Jose Mercury.*

Cotton in Merced.

The *Snelling Argus*, has the following on the cotton crop of Merced County, now being harvested:

The cotton planters in this section of the county have nearly completed gathering their crops, and Col. Strong the Messrs. Buckley Bros., occupying adjoining farms, are each running their gins and turning out five or six bales each per day. Col. Strong's machinery is run by horse power, and does the work as handsomely as could be wished. He packs his cotton in a hay press, and, although, the bales are rather light, they look handsome and will preserve the lint well. He informs us that he will finish picking in about two weeks, his crop upon the Merced plantation amounting to about 130,000 pounds of seed cotton, or about 100 bales of clean lint.

Messrs. Buckley Bros. run their gin by steam power and pack with their hop press, run by hand power. They inform us that the bales they have turned out weigh from 250 to 295 pounds, and they calculate their crop will amount to 150 bales, most of which they will ship to Europe that it may be brought into direct competition with the cotton of other parts of the world and its true rank and value be ascertained. They think that California cotton will be in good demand in the English markets when their samples are placed on exhibition or the staple has been tried by the manufacturers.

They have a force of seventy hands at work picking out their cotton in their fields, and will not finish gathering for two or three weeks yet. They inform us that they have made arrangements for a very large increase in the acreage to be put in cultivation in cotton on their farm the coming season, a large part of which will be tilled by tenants who have had considerable experience in cotton raising in the States bordering on the Gulf coast. Major John L. Strong is superintending the gathering of the crop on Mariposa Creek in this county, and we learn from gentlemen who have visited the plantations, that the cotton is not only of excellent quality but is turning out largely. From what we can gather of farmers in regard to their intentions the cotton crop of 1873 will be three or four times greater than that of this season.

Transportation of Crops.

The President in his late message called the attention of Congress to the fact that the productions of the country were increasing in a much greater proportion than the means for their transportation. Whether this be true or not, it is an undoubted fact that the cost of transporting crops from the Western States is too great to make the labor of the producer remunerative. Whether these high tariffs are due to the scarcity of transportation or the extortion of monopolies, makes but little difference in the remedy to be applied, which is suggested in the message.

The President recommends the gathering together of all possible information, by means of surveys and otherwise, in regard to feasible routes for canals from the west to the tide water of the Atlantic, in order that Congress may, when required be able to apply the right remedy to a matter which is seriously threatening the material prosperity of the country.

Three great routes have been suggested. One to connect the Mississippi Valley with the Atlantic at Charleston and Savannah, by way of the Ohio and Tennessee rivers, and by canals and slackwater navigation to Savannah and Ocmulgee. This route has been surveyed by an eminent marine officer, and declared perfectly feasible. The second route is by the extension of the Kanawah and James River Canal to the Ohio; and the third, by the extension of the Chesapeake and Ohio Canal.

These two latter routes will be proposed for the consideration of Congress at its present session. In carrying grain, and, in fact, any kind of freight in quantity, railroads cannot begin to compete with canals, the difference in price much more than offsetting the difference in time. With these canals in operation the producers of the West would have ample and cheap transportation. If the present state of affairs is due to the scarcity of transportation, this would supply it; if it is due to the extortions of monopolies, the construction of these canals would secure a competition the full benefit of which would accrue to the producer. —*San Jose Mercury.*

The standard bushel of the United States contains 2150.4 cubic inches. The "Imperial bushel" is about 68 cubic inches. Any box or measure, the contents of which are equal to 2150.4 cubic inches, will hold a bushel of grain. In measuring fruit, vegetables, coal or other substances, one-fifth must be added. In other words, a peck measure five times even full makes one bushel. The usual practice is to "heap the measure."

THIRTY million pounds of dried apples and peaches are said to have been sold in Chicago alone during the year ending July, 1871, and three thousand barrels of dried blackberries were destroyed there during the fire in October, 1871.

USEFUL INFORMATION.

Phosphorescence Produced by Decomposition.

Many kinds of fish, which can make no claim to luminosity when in life, become brilliantly phosphorescent after death. Mackerels and herrings especially, when their dead bodies are exposed for a short time to the air, become luminous in the dark, and have often appalled some rustic youngster by their strange phosphoric glitter as they hang outside a cottage door. Stretch forth your hand and touch them, and you will find your fingers covered with a greasy substance, and luminous, as if rubbed with phosphorus. If the greasy substance be separated from the dead fish, and placed on a plate of glass, it continues to shine in the dark. But, as in all other cases of phosphorescence, there is no heat—only light. When these dead fish are placed in sea-water, in a few days time they render it luminous—evidently from the luminous grease permeating the surrounding liquid; moreover, the water shines everywhere with equal lustre, and suffers no diminution of its luminosity by being passed through a sieve. Water which has thus been rendered luminous loses its transparency, looks milky, and acquires a disagreeable odor; and its phosphorescence may last for four or five days. Dead animal matter of all kinds occasionally becomes phosphorescent. Peep some winter's night, into the larder, and perchance you will see—as Dr. Boyle once saw—a neck of veal gleaming all over with spots of light. You may fancy, as most people do, that this phosphorescence is a sign of decomposition, and that both the veal and the gleaming herring or mackerel ought to be thrown away. But this is a mistake; for it is a remarkable fact that this luminosity from dead animal matter always shows itself before decay begins, and either ceases at once or rapidly diminishes as soon as chemical decomposition sets in. We may add that not a vestige of infusoria or other animalcules is to be found in this luminous matter when examined under the microscope.—*Belgravia*.

THE NEW FRENCH METRE.—It might astonish unreflecting persons says the *London Telegraph*, to know of the prolonged and anxious precautions that have been taken in the preparation of the French Metre, which is to be the future standard of international measurement. After long discussion, and debates which turned on the millionth part of a millimetre, the learned men charged that this inquiry by the Academy of Science have reported in favor of the implement actually existing in the archives of Paris. Copies of this standard are to be delicately made, and furnished to the countries which accept it as a common canon. The length of the original is to be taken at the freezing point; the material of the authenticated copies will be composed of mixed platinum and iridium, and they will be constructed out of one and the same ingot. They will be heated for many days at a prodigious temperature, so as to be proof, as far as possible, against subsequent molecular action. Each metre will be stored up in company with extremely sensitive thermometers, specially manufactured and tested; and the divisions on each rod will be marked with micro-machinery constructed for that particular purpose. This might seem needless care, and, no doubt, the millionth part of the thousandth of a metre is no great matter to lose or gain, seeing that neither buyer nor seller could possibly be aware of it. But in reality, great issues depend upon the utmost attainable accuracy in establishing such a standard; innumerable operations of human life are founded upon it; and such anxious precautions are therefore the very veracity of mechanics, the intellectual conscience of commerce and mensuration.

A CAT'S DREAM.—Animals, especially the dog, cat, and parrot, often indulge in the luxury of dreams. A correspondent of *Land and Water* tells the following anecdote of a cat: "She was very still, and appeared to be fast asleep, when suddenly she sprang into the middle of the room, where she fixed her feet on a limited spot on the floor, to which also her nose was applied, as if closely grasping something she held in her claws. This continued for a short time, when the nose was gently raised, and the visible attention was directed to the feet, which still continued their grasp; but after a time one of them was gradually removed, and then the other, at which puss appeared greatly at a loss to imagine whether the imaginary object could have gone, so as to escape her grasp. She looked in various directions along the floor, with a foolish face of confusion; and then again her attention was directed to the spot on which the feet were first closely pressed, as if to examine closely whether the presumed escape had been by sinking through the floor; and this seemed unsatisfactory, the disappointed animal, now widely awake, returned slowly from the spot; but she returned more than once to re-examine the place, as if she found it impossible to comprehend how an object she had so plainly seen and grasped should have sunk into nothing. Many minutes elapsed before the cat appeared to be reconciled to the conviction that what had been a dream was not in truth a reality."

There is True Economy in Good Roads.

There is no economy in saving in "the spigot and losing at the bung." There is no economy in parsimony in road making and paying treble or quadruple to wagon makers, blacksmiths and harness makers. Uneven road beds, gulleys and boulders tax a man more heavily in purse, and are more vexatious to spirit than his part of the cost, constructing and maintaining a road "level and smooth as a barn floor." Men don't get rich, or are a long time getting rich, just because they don't begin right. What is the use of toiling to save crops, if a share of the profits is lost in getting them to market? A man starts to his nearest town with a ton of hay from which he expects to realize \$10 to \$15. He runs into a gully, tips over, and a half day is lost to himself and team in getting straightened up; or he loses a tire, breaks some part of his wagon, or casts a shoe, because of a boulder or something else that shouldn't be there—out comes his purse for repairs, and away goes an hour or more of his time!

But the cost and loss of his time is not all—he gets fretted, worried in spirit, and becomes exceedingly unamiable, boorish and bearish. And this last is no first-rate evidence of his civilization—traced back to his imperfect road bed. A poor road in a populous community costs enough, incidentally, (and accidentally), in the course of twelve months, to macadamize its whole length, and to give something almost as durable as the "everlasting hills."

Our old system of road working needs alteration. It does not meet the wants of the people to-day. It is too antiquated and too imperfect to be recognized in harmony with the spirit of the age. It needs thorough revision. What scholar and philanthropist can devise a system that will combine thoroughness of structure, completeness of detail, and no waste of the people's money? Such a man will be the benefactor of the rural districts, and as justly entitled to reverential memory as any inventor of the age.

The Origin of Thunder-Storms.

Professor Palmieri's experiments at his observatory half way up Mount Vesuvius really throw great light on the philosophy of our thunder-storms. Having watched the changes of atmospheric electricity there for nearly a quarter of a century, he believes he has detected their obedience to certain definite laws. One of the facts he has established is, that the electricity of any station is always positive, if there be no shower of rain, hail or snow falling within a distance of fifty miles, and provided there be no projection of ashes from the crater of the mountain. If a shower be falling within this radius, the following law holds good: At the place there is a strong development of positive electricity, round this there is a zone of negative, and beyond this again positive electricity. Should negative electricity be observed during the shower, it will be found to be induced by a more powerful one of positive electricity further away. All this had been ascertained by means of telegraphic communication with both neighboring and distant regions. There is no usual development of electricity except where and when the moisture of the air is being condensed. In a cloud from which no rain is falling there is no greater electrical activity than elsewhere. But the moment aqueous vapor begins to condense into drops, positive electricity is thereby created, and the greater in quantity the greater the precipitation by changes of temperature. When, therefore, this condensation is extremely rapid, a superabundance of electricity accumulates, which must find its way to the negative zone, perhaps, or to the earth below, by lightning discharges—in other words, thunder-storms are produced.

THE CENTRE OF POPULATION.—By an interesting calculation, Professor Hilgard of the Coast Survey, shows that the centre of population of the United States, which is constantly moving westward, was, in 1840, at the Cumberland Mountains, in Virginia, in 1850 it moved westward sixty-seven miles, to the south of Parkersburg, still in Virginia; in 1860 it got as far west, about eighty-two miles, as a place south of Chillicothe, O., not far distant from the boundary of Virginia and Kentucky; in 1870 it moved only forty-five miles, and is now at Wilmington, Clifton county, O. The Professor deduces from his very curious calculations, that in the year 1900 the centre of population will be near Bloomington, Ind., about forty-five miles southwest of Indianapolis.

TO CLEAN CIDER CASKS.—A good plan to cleanse musty or foul casks, is to put in a quantity of unslaked lime, and then pour in boiling water until the same is slaked. Put in the bung and shake until the water and lime have come in contact with every part of the barrel. Let it stand six or eight hours, empty and smell the cask, and if not clean, repeat the operation, and after having again emptied out the lime, burn a strip of cloth dipped in melted brimstone in cask, fastening it by the bung, and a cask must be foul indeed that cannot be purified by this process.

GOOD HEALTH.

Spent Balls.

A spent ball striking with a dull thud like a stone thrown by a strong-armed man, often causes more pain to the man struck, and more commotion in the ranks, than a bullet that tore through a man's leg or arm. A spent ball always "slips up" on you. It always came when you least expected it, from an unlooked-for direction, and struck a part of the body not expecting to be hit. So it always produced a stunning effect. In some regiments spent balls were universally called "stunners," and very many men had painful and uncomfortable experience with them. Some day, the men lounging in the line of battle, protected by a hill, and listening to the volleys on the right, would be disturbed by the contortions of a man who had been asleep.

A spent ball had struck his foot, and without breaking the shoe-leather had made him crazy with pain. Another would be hit in the region of the stomach, and labor under the impression that his entrails had been torn out. Another struck on the hand, would yell out like an Indian, whereas had a bullet gone through his body he would have shut his lips and uttered not a groan. The boys had a theory that these spent balls came from the awkward squad of the enemy, and that the air up a little distance was full of them. The spent balls were no respecters of persons. They demoralize men in shoulder-straps as well as men in blouses. At Chickamauga General Whitaker, storming forward at the head of his brigade, was struck in the abdomen. Deathly sick and faint, he called to Gen. Granger.

"General, I am hit in a bad place; who'll take command of my boys?"

Granger replied, "I'll do it myself," and sorrowfully sent his favorite brigadier to the rear. Whitaker, riding along rearward, concluded to see the extent of his wound. Unbuttoned his coat, found no blood. Underclothing was not stained or punctured. There was no wound in the flesh. Realizing that he had been hit with a spent ball, Whitaker wheeled his horse, and in a towering rage galloped back to the scene of battle. Dashing up to the commander of the reserve, he roared: "I'm not wounded worth a curse. I'll run this brigade myself;" and he did.

Tobacco as a Medicine.

A letter has recently appeared in the *Manchester Examiner* from a smoker who "has read with interest the various letters that have appeared in that journal on the tobacco question." This gentleman, it seems, never knew a day's health until he took to smoking. Up to the age of twenty he never smoked, but he was always sickly, and during the winter months was much troubled with affections of the chest. Fortunately for him, at that age, on the recommendation, he alleges, of no less an authority than Prof. Huxley, he "began the use of mild tobacco;" and from that day forward he has enjoyed good health. He is no longer troubled with his cough in winter, nor, although he is of delicate constitution, has his memory or sight been in any way impaired. A short time ago he foolishly gave up the habit of smoking, for the sake of experiment, and denied himself the use of tobacco for two or three weeks. The consequences were most serious. All his old symptoms returned, and his cough became again so exceedingly violent that it nearly turned to bronchitis. On resuming his pipe, the affection immediately subsided. He accordingly now smokes from a sense of duty, "medicinally, and as a preventive." This painful story is calculated to throw additional difficulties in the path of the anti-tobaccoists.

THE BEARD HEALTHY.—There are more inducements for wearing the beard than the mere improvement of a man's personal appearance, and the cultivation of an aid to the everyday diplomacy of life. The hair of the mustache does not only absorb the moisture and miasma of the fogs, but it strains the air from dust, and the soot of our great, smoky cities. It acts, also, in the most scientific manner, by taking the heat from the warm breath as it leaves the chest, and supplying it to the cool air taken in. It is not only a respirator, but with a beard entire we are supplied with a comforter as well, and these are never left at home, like the umbrella, and all such appliances, when they are wanted. Moffat and Livingstone, the explorers, and many other travelers, say that at night no wrapper can equal the beard. A remarkable fact is, too, that the beard, like the hair of the head, protects against the heat of the sun, as the thatch does the ice-house; but, more than this, it becomes moist with perspiration, and then, by evaporation, cools the skin. A man who accepts this protection of nature may face the rudest storm and the hardest winter. He may go from the hottest room into the coldest air without dread, and we verily believe he might sleep in a morass with impunity; at least, his chance of escaping the terrible fever would be better than his beardless companions'.

Ether vs. Chloroform.

If the force of statistics be of any value, ether, beyond question, is the agent which presents the most powerful claims, and must obtain our confidence as the safest anæsthetic. The reports of the Medical Society of Virginia during this season are conclusive. By combining American and British statistics the result is found to be as follows:

Agent employed.	Deaths.	Inhalations.
Ether.....	4 to 92,815 or 1 in 23,204	
Chloroform.....	53 to 152,100 or 1 in 2,883	
Mixture of chloroform and ether.....	2 to 11,176, or 1 in 5,588	
Bichloride of Methylene.....	2 to 10,000, or 1 in 5,000	

It is thus proved statistically that chloroform is eight times as dangerous as ether, twice as dangerous as a mixture of chloroform and ether, and, as far as experience goes, it is more dangerous than bichloride of methylene; in fact, chloroform is the most dangerous of all the anæsthetic agents in use. If statistics are of any value, these should be startling and impressive ones. The report of the London Chloroform Committee states as the result of careful investigation, that "ether is less dangerous than chloroform;" and that "with every care, and the most exact dilution of the chloroform vapor, the state of insensibility may pass in a few moments into one of imminent death;" and the latest surgical work from America advocates ether as the most suitable anæsthetic.—*British Medical Journal*.

COLORING THE EYE.—Dr. R. J. Levis, of the Pennsylvania Hospital, has devised a means of coloring opacities in the cornea of the eye. He says: "The disfigurement of the glaring white opaque spaces of the cornea can be cured by indelibly tinting, so that if central, they shall show the blackness of the natural pupil, or if peripheral in location, the color of the underlying iris may be most deceptively imitated. Should even the entire cornea be opaque, a very natural imitation of the appearance of the whole circle of the iris and the pupil can be accomplished." The instrument used is a bundle of from three to six very fine sewing needles inserted into a handle. For coloring matter, ordinary water pigments are used, rubbed to a pasty consistence and mixed with a little glycerine. For the black of the pupil, Indian ink is employed. The surface of the opaque spot being wiped clear from moisture, the paint is applied thickly over it with a small pencil. The needle points are made to penetrate repeatedly and rapidly in varying directions, until much of the opaque surface is gone over with the pigment. Two or more repetitions of the process are required. The operation is said to be painless, and as the coloring matter is regularly tattooed into the tissues, it cannot be washed out by tears.

BUTTERMILK.—Hygienists assert that buttermilk is an excellent aid to digestion, and acts as an admirable substitute for fruit in winter. They also advise it as a preventive of sickness in spring. If invalids who suffer from indigestion would drink it at meal times, they would find it invaluable.

Persons who have not been in the habit of drinking buttermilk consider it disagreeable because it is slightly acid, in consequence of the presence of lactic acid. There is not much nourishment in buttermilk, but the presence of the lactic acid assists the digestion of any food taken with it. The Welsh peasants almost live upon oat cake and buttermilk. Invalids suffering from indigestion will do well to drink buttermilk at meal time.

TOO MUCH SHADE UNHEALTHY.—Mr. Greeley, a short time before his wife's death, said to a friend that the bronchial disease with which she was then severely afflicted, and which finally caused her death, was contracted by living in the "old house" upon his Chappaqua farm. That house stood in a forest grove which so overshadowed it that the sun was almost shut out. He said he tried to persuade his wife to let him cut away some of the trees, but she could not bear to see a single tree cut down. In time, however, the fatal disease got such a hold on her constitution that Mr. Greeley put up a new house on a sunny portion of the farm, where the family lived during the latter years of their residence there.

MEDICAL VALUE OF ASPARAGUS.—A medical correspondent of an English journal says that the advantages of asparagus are not sufficiently estimated by those who suffer with rheumatism and gout. Slight cases of rheumatism are cured in a few days by feeding on this delicious esculent; and more chronic cases are much relieved, especially if the patient avoids all acids whether in food or beverage. The Jerusalem artichoke has also a similar effect in relieving rheumatism. The heads may be eaten in the usual way, but tea made from the leaves of the stalk, and drank three or four times a day, is a certain remedy, though not equally agreeable.

WASH FOR SUNBURN.—Take two drachms of borax, one drachm of Roman alum, one drachm of camphor, half an oz. of sugar candy, one pound ox gall; mix and stir well for ten minutes or so, and repeat this stirring three or four times a day for a fortnight, till it appears clear and transparent. Strain through blotting-paper, and bottle up for use. It is said that strawberries rubbed over the face at night will remove freckles and sunburn.



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SAN FRANCISCO:

Saturday, Dec. 21, 1872.

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SEND IN YOUR SUBSCRIPTIONS.—By renewing subscriptions promptly, our subscribers will confer a grateful favor upon the publishers of this journal. It will save our mailing clerk, in many instances, the trouble of distributing and resetting your name and address. It will perhaps save us the time of an agent and his travelling expenses in politely soliciting your renewal. Suppose every department in the paper does not interest you, we publish a great variety, and does not the balance pay you? We really believe that our first-class publications have benefited the Pacific Coast community to that degree that every well-to-do person has been benefited more than four dollars by their progressive and industrial influence, and that there is no danger of any one making a mistake or giving us more than value received by sending in their subscription. We shall continue to put the money sent us into improvements for the benefit of readers—and not into selfish and rusty pockets.

TO INDUCE SUBSCRIPTIONS. We will (as long as this notice appears) send from one to twelve copies of such back numbers as we may have on hand, of this journal, to one or more addresses, furnished us by any old or new subscriber who sends sufficient stamps to pay postage on the same.

A NEW PARLOR AMUSEMENT.—Our attention has been called to a new and interesting geographical game, just the thing for a Christmas and New Year's gift to the boys and girls. It consists of nearly fifty, finely executed chromo scenes on the Central Pacific, Union Pacific, Burlington, Michigan Central, Great Western, New York and Erie Railroads. It is said to be an amusing, as it certainly is an instructive, parlor game, for which the inventor Geo. Thistleton, received a gold medal from the State Fair Committee. The address of the inventor, author and publisher appears in his advertisement.

CALIFORNIA FARMERS' UNION.—A meeting of the Board of Directors, we learn, will soon be held.

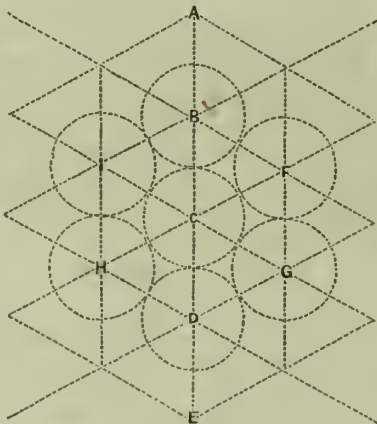
Quincunx.

"A subscriber," has but a small plot of ground on which to set an orchard and is desirous of economizing space as much as possible, and asks, if what we have spoken of in a previous number of the RURAL as the quincunx order, is anything more than setting out four trees, one at each of the four corners of a square and then a fifth one in the middle? and that if it is different from this, will the same piece of land contain any more trees and have any three of them the nearest together, equidistant?

We answer our "subscriber" this way—Quincunx, from the Latin *quinque*, five, is really the setting of one in the middle of four; thus:—

But it is evident that any three the nearest together are not equidistant. But the term quincunx, is now extended to include any number of things so arranged in lines, that the numbers of each succeeding line, stand behind the spaces between those of the preceding one. Now as the object is to entirely fill the space and have the trees equidistant, the modern quincunx or hexagonal form of planting must be adopted.

Some are deterred from laying off their orchard grounds in this form, on account of the supposed difficulty of doing it. The annexed diagram will make the matter plain and easy. Set a stake at A, B, C, D, and E, in a straight line, and the distance apart you wish the trees to stand. Then fasten a tape line at C, so that it will turn on the stake, and from B, describe a circle to F, G, D, H, I, and to the starting



point B. Now with the line divide the circle, starting at B, or D, into six equal spaces and set stakes at F, G, H and I. You now have six trees surrounding a seventh, any three of which standing the nearest together are exactly equidistant and more completely fill the space than any other arrangement can.

It is evident that by extending the lines in every direction from the nucleus thus formed, that the points of intersection or crossing are the points to set your stakes for any extension desired.

Christmas.

Americans recognize but few national holidays. Certain sects of Christians, however, have numerous holidays, but they are generally devoted exclusively to religious and devotional exercises. But Christmas as a holiday is an exception, and though, as with our Thanksgiving day, religious exercises make a part of the programme of observances, more particularly with the Roman, Greek and English church sects of Christians, in which praise is offered to God for his infinite goodness and mercy, in giving to the world the Saviour, whose nativity or birth they celebrate on that day; yet custom has, from the earliest times, made it a day over all other church holidays, as one devoted to reunions, merry makings, joyous givings, peace offerings and good cheer, in which the old and the young participate.

Yet, though the veteran Christian on this day may have his thoughts at intervals turned to the contemplation of the Infinite, and the Author of the Great Redemption—our observation leads us to believe, that with the masses of the so-called Christians, the larger share of thought is bestowed on gifts, wines, turkeys and good dinners; and that, particularly with the young, Santa Claus is the hero and divinity of Christmas, for

"When time comes round, a Christmas-box they bear,
And one day makes them rich for all the year."

And it would seem that merrymaking and

feasting are equally legitimate, having their precedent established and recorded far back among the Christian centuries, when it was said:

"At Christmas play, and make good cheer,
For Christmas comes but once a year."

And now as the day will be upon us before another issue of the RURAL, we wish our patrons and readers, all, a Merry Christmas.

The Tailor-bird.

Our own engraver has executed the accompanying cut, which enables us to illustrate an interesting fact and trait in the natural history of the Tailor-bird, which we find in the *Illustrated Monthly*.

"The ingenuity and skill displayed by many of the lower animals in the construction of their homes is so marked and marvellous, that we do not wonder that the enthusiastic naturalist should be led to believe that they are possessed of reasoning faculties similar to man's. The spider's web, the beaver's dam, and, more remarkable than either of these, the endless varieties of bird's nests, all tend to prove that what we call the *instinct* of animals is as mysterious a mental quality as the *reason* of man.

The illustration here given represents the leafy nest of the Southern Tailor-bird; and, if it appears more wonderful in its construction than the queer little mud cabins of the barn-swallow or the swinging nest of the oriole, it is only that by its resemblance to the work of the human hand we are the better able to compre-



THE TAILOR-BIRD'S NEST.

hend the difficulties attending its construction. With only its beak and claws, this expert little artisan obtains from some vine or fibrous bark the long thread with which the edges of the leaf are stitched together; and, as the nest is located at the end of a long swinging branch, the *sewing* must be done by the beak alone, as the claws are needed to grasp the limb above; and yet this is only half the work, for, after the leafy shell is finished, it must be lined with a closely-woven and braided cushion, that the eggs and young may be safely housed.

It is not difficult for us to understand how a child, under the guidance and direction of its parent, may at last succeed in producing a work as perfect in design and finish as that which served as a pattern; he sees where the first attempt was wrong, and improves upon it in the second. But not so with the young Tailor-bird. No sooner is it able to fly than it leaves the nest, of which it has seen only the interior, and with no lesson or advice, at once seeks a mate no wiser than itself; and together they two build a new nest, so perfect in finish, and similar in design to the one they had left, that it is hard to believe that the old home was not transported to a new branch. The child had reason; the bird, *instinct*."

Point of Timber.

This is the euphonious name given to a fine village district of Contra Costa county, that has its Farmers' Club, and in which farmers control things. The new shore railroad will ere long connect them with the great points of trade and commerce of the State, which will add to their present thrift and enterprise.

In the vicinity, distant one and a half miles, there is a natural salt-pond of about two acres in extent, said to have recently become the property of Coffey & Risdon of S. F., who will doubtless improve it for the production of salt. At present it is only used for bathing, at least a small building over a part of it, would seem to indicate its adaption to that purpose.

With this salt pond and the large subscription to the RURAL at Point of Timber, the people, physically and intellectually will never spoil.

FISH CULTURE.—The address of Livingstone Stone, A. M., on this subject, before the Oakland Farmers' Club is in type and will appear in our next issue. The report on the Farmers' Union address this week will be of general interest.

We are indebted in part to Samuels' Guide for Travelers in Oregon for our first page illustrated article.

PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

By Special Dispatch, Dated Washington, D. C., Dec. 17th, 1872.

FOR WEEK ENDING DECEMBER 3d, 1872.

ANIMAL TRAP.—Henry J. Baddeley, Napa, Cal.
DUMPING CART.—George Zoanny, Napa, Cal.

SPEAKING TUBES.—Frederick A. Well and Julius Finck, S. F., Cal.

COFFEE-POT.—Martin Hoffman, S. F., Cal.

GRAIN SEPARATOR.—Jeremiah B. King and Orrait Cronkite, Sacramento, Cal.

HARROW.—Andrew W. Bohaker, Napa, Cal.

"The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue. NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

A Plea for Ornamental Trees.

EDITORS PRESS:—Allow me to say a few words in behalf of ornamental trees and bushes, and to enter a solemn protest against the cruel treatment they too often are subject to. The principal objects of trees and bushes, in gardens, is beauty, freshness and shade. To obtain the two first we must keep them thrifty and vigorous by sufficient nourishment, and proper room for top and roots to expand in their natural position. Nearly all plants require plenty of sunshine and fresh air to make a healthy growth, and show their natural beauty, to bring forth flowers or fruits, as the object may be. To obtain shaded walks and resting places, we may plant close together, but at the cost of beauty.

If amateurs and gardeners when setting out trees would only look ten to fifteen years ahead, and think how they (the trees) then will look, there would not be much danger of crowding, and they would have far better satisfaction from their labor. It may sometimes be proper to, temporarily, put small or short lived trees between the larger, to make a fuller appearance in the first years of a new garden; but be sure to take them out again before any crowding appears, or they touch each other. As it looks far better to have only a few trees, especially in front of the buildings, than to have many cramped so close together as to leave no space for a distinct appearance. A tree looks well on all sides and ought to be seen so. It is really a pity to see a weaker plant pushed to one side by a more robust one, and humbly begging for a small space to reach the sunshine or for air for its lungs to breathe.

But my principal object is to appeal to the mercy of so-called gardeners and others, who use the pruning-shears and knives so cruelly to make the trees and bushes suit their peculiar fancy; undoing a kind Creator's wise works; in making cylindrical cones (I would like to say ten-pins), squares, globes and other still worse figures of what were trees. It is a pitiful sight to observe so many of the naturally so beautiful and symmetrical cypress trees, with offshoot branches (arms or wings if you like) and heads. The Creator made every plant either beautiful or useful, often both combined; he gave to every kind a certain distinct form or shape after his wisdom, and we ought to have regard enough for his works, not to alter or mutilate them, when we cannot gain any good object thereby. Occasionally we may improve their appearance by a little judicious help, but we always fail, when interfering too much with Nature's laws and forms.

A distinguished lady, of excellent taste and knowledge, said a few days ago: "If people will have such stiff and unnatural forms in their gardens, why do they not have them made to order, in a tin-shop, and painted in colors to suit?" I may add: and put in gilt-letters on each—*These Stand for Trees or Bushes*—They could then get their fancies exactly suited at once, and in a lasting form. It would look just as well, besides being a novelty.

But, perhaps, some people think that such well trimmed (?) trees will better withstand the strong winds, while both experience and science teaches us different. If plants are set out when young and small, while their roots are in their natural form, there is very little danger of their blowing over. Besides there is but little or no time lost by setting out small trees, they get quicker naturalized in their new and often entirely different position, and will soon (everything else being favorable) outgrow the older ones.

As I hope every lover of plants reads your excellent paper, these few lines may perhaps save some few trees from the shears and knives, and if so I shall be well rewarded for drawing their attention thereto. C. M. PETERSEN.

Berkeley, December 12th, 1872.

Through a slight inadvertence, the Business card of Mr. Thos. Meherin was inserted in our last Saturday's issue, instead of his General advertisement. Mr. Meherin has one of the largest assortments of Fruit, Shade, and Ornamental Trees in this city, as will be seen by visiting his depot, No. 516 Battery St.

Sewell's Snow Plow.

The machine shown in the accompanying cut is the invention of Chief Engineer George Sewell, of the United States Navy, and is designed for clearing railroad tracks from heavy snows. The advantage of an apparatus which will accomplish this object successfully is sufficiently apparent to require no explanation. It is understood that this one will be practically and thoroughly tested this winter by some of the railroad companies, and if it justifies in practice all that it promises to perform, there will be left no excuse for serious detention resulting from snow obstruction on the road across the continent or elsewhere. The *American Artisan* describes this invention as follows:

The machine can carry its own motive power, or it can be loaded to cause sufficient traction to drive the snow-removing machinery, the latter being connected by suitable gearing to the wheels of the truck of the machine, and the whole being controlled by a powerful locomotive, as shown in the engraving. The wheels of the truck are connected by rods, as shown, so that the tractive power of all is obtained. If deemed necessary, the locomotive can have one of the machines at each end.

At first glance, it might be thought that this machine would be inoperative in deep cuts with high banks, but under such circumstances it would only be necessary to go through the cut with the machine and throw the snow on the opposite track, then to take that track with the machine, pick the snow up, and deliver it into empty cars prepared for that purpose. Mr. Sewell has designed a car for this special purpose, which is also adapted to clear out cuts where there is but a single track. This snow-digger is particularly commended to the officers and directors of the Union and Central Pacific railroad companies. Snow fences, although affording partial protection from drifts, are liable to destruction from fire and the elements; and should they escape combustion and tornadoes, they must inevitably in a short time succumb to natural decay, and their restoration would involve enormous expense. We think it certain that an ample supply of these machines could be maintained at less cost than the fences, while it would render the latter unnecessary, and enable the road to be kept open at all times.

Referring to the engravings, it will be seen that the machine consists of an endless chain of buckets or elevators, embracing the whole width of the road bed, picking up the snow and delivering it to a chute, the bottom of which consists of an endless traveling belt or carrier supported on a series of rollers, which carrier constantly discharges the snow on the sides of the road, and at any desired distance from the track, depending on the length of the chute. The belt is driven by absolute power derived from the truck wheels. The chute is arranged to deliver the snow at either side, as may be desired; also, to

be turned into line with the road when necessary, or to be raised or lowered if required by the exigencies of the occasion.

The elevator is also arranged to be lowered in passing under bridges. A frame is suspended under the elevator to prevent sagging of the chain and buckets. A scraper placed just forward of, and at the lower part of, the elevator, is designed more particularly for clearing ice from the rails in some of the

Only a Garden.

There are a number of men in California who never think of doing things by halves; thus we find among our vegetable gardeners, I. Lusk, 2½ miles from Oakland with a hundred acres of tomatoes and 25 acres of cucumbers, in their season, and has just finished putting in or planting, twenty acres of peas. These are only his early peas; the seed imported, and

Grape Culture.

The attention of grape growers during the past season has been turned to the production of other and superior kinds of grapes to the common Mission or California grape, so-called. This grape has been so generally introduced to all parts of California, there is no difficulty in procuring cuttings of this variety in any quantity and at a cost but little above the

trimming and cutting into proper lengths.

But so plentiful has this grape become and being adapted only to the table and wine making, its very abundance begins to work a depreciation of its value in many localities where the means of making them up into wine has not kept up with their production. Hence we see that the large, sweet and pulpy grapes, suitable for raisins are commanding double the price of common or indeed any description of wine grape.

There will doubtless be a considerable demand the present winter and coming spring for several of the finer kinds of raisin grapes, and it will be well for those having such varieties, to save all their trimmings that will possibly make good cuttings. If those who have been successful in putting up the past summer a superior article of raisins, and will have cuttings for sale, by sending to the office

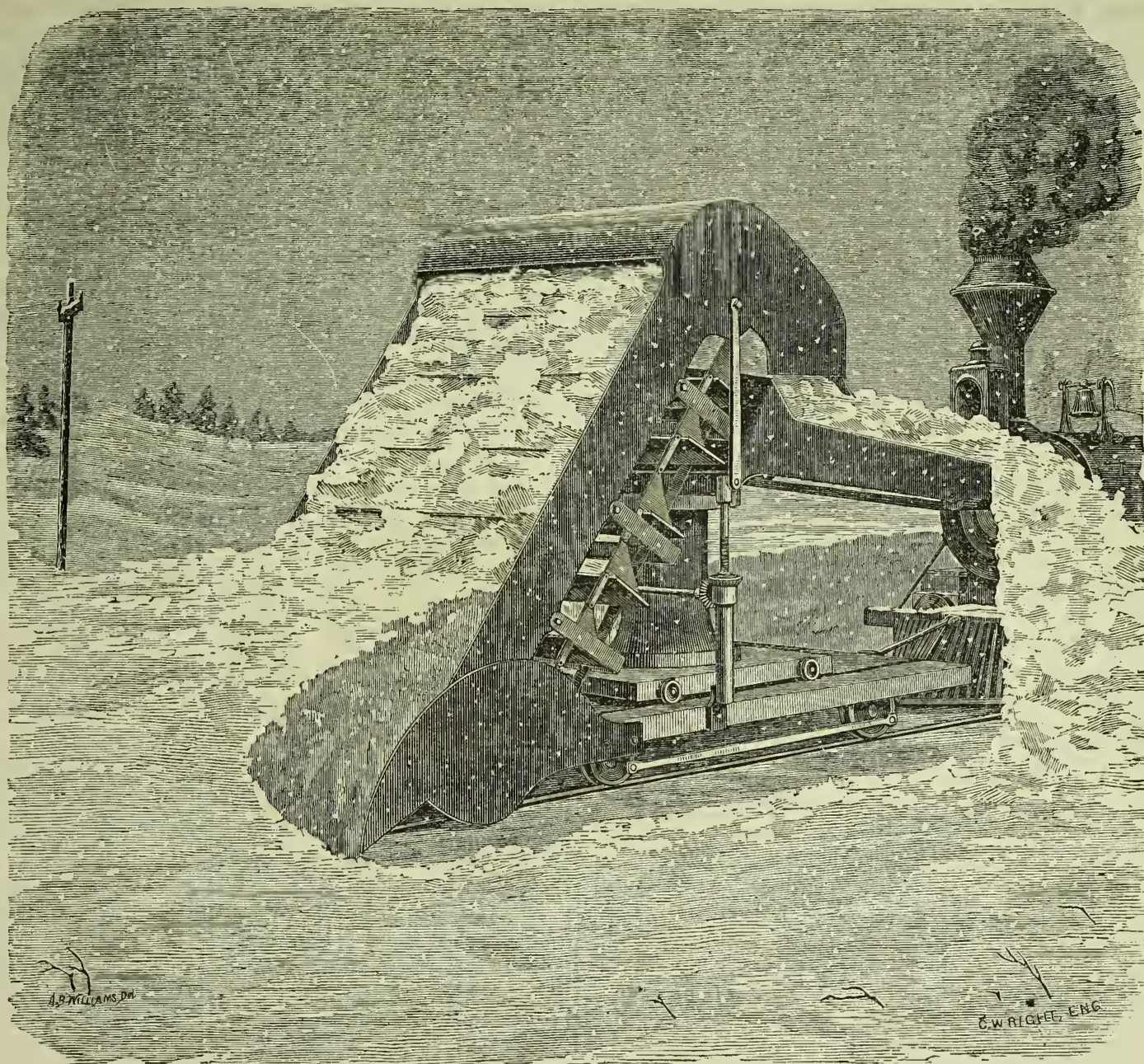
of the *RURAL* samples of the raisins they can be certain of having mention made of them just in keeping with their merit or quality.

Fair Criticism.

"Farmers write for your paper." This is a kind of standing motto of ours, and we mean just what the words indicate; and we are glad to see that our views are seconded by those who read the *RURAL*; in proof of which we append an extract from a letter just received in regard to just criticism:

A plain, free-spoken criticism—not in a caviling spirit—cannot injure the *RURAL*. This you know as well as I; but in fact makes it stronger and more at home among farmers, making them feel as though it were truly a medium through which they might interchange or combat ideas, call for facts and figures, and work out the truth, without fear or favor, and talking just as they feel, induce many to write for the paper who would not otherwise, and so bring to the surface many ideas and a great deal of valuable experience. A deal of useful information lies scattered among our farmers—a crumb here and a crumb there, which should be made available. The farmers of California have never had a journal that they felt was peculiarly their own and for them to make the best use of. Eastern farmers have grown up alongside of numerous farm papers and journals; but the *RURAL* Press is really the first one we have had. It is for you to educate them up to writing for such papers. G. W. T. C.

EARLY ROSE POTATO.—This famous potato having gained almost a world wide celebrity, an advertiser in our columns would like to have those who have never tasted them, give them a trial.



SEWELL'S MACHINE FOR CLEARING RAILROAD TRACKS FROM HEAVY SNOWS.

mountainous portions of the Union and Central Pacific railroads. The cutting edges of this scraper are so arranged that irregularities met with at the joints of the rails will not obstruct its operations.

The use of the tooth projecting below the rail, as seen in Figs. 3 and 4, is to open a channel in the ice for the flange of the wheels. This also is shaped so that irregularities at the joints of the rails will not obstruct its passage. When not required, it can be thrown up, as shown by the dotted outline.

During the obstruction of the Union and Central Pacific roads, the Pacific Mail Steamship Company and the Panama Railroad Company reaped a rich harvest, and these companies are now making extensive preparations to do the same thing during the coming winter, feeling that neither freight nor passengers will again take the risk of a similar detention. It is fair to suppose that the officers of the two great roads named are awake to the necessity of securing this traffic, and will eagerly embrace any plan that offers a reasonable prospect of relieving them from their embarrassment.

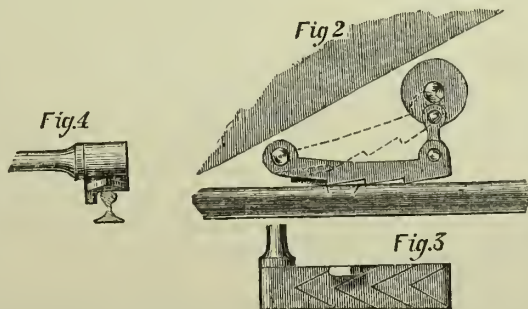
Any further information concerning this machine can be procured from Mr. Geo. Sewell, Brooklyn, N. Y.

known as the Champion of England.

He prefers importing his seed, only from the fact that experiment has convinced him, that the peas from the same variety grown in California, produce smaller peas than the imported seed. Let our farmers make a double headed note of this: one, that it is now time to plant early peas in favorable localities; and the other, that the Champion of England is a splendid early pea to plant, and then turn to our advertising pages and see who the reliable seedsmen of our State are;

for such as these find it profitable to advertise in the *PACIFIC RURAL PRESS*.

WANTS THE *RURAL* PRESS.—Wells H. White, of Troy, Miami Co., Ohio, having somewhere seen the *RURAL*, after desiring it sent to him, says: "I want something from California that will post me regularly as to its *Flora*, its Grape-growing, Pomology, and especially who are there to whom I can send at any time for California's finest plants, flowers and fruits—or the cuttings—and at the same time have all my orders faithfully, punctually and truly attended to, as I am now in the business of raising and selling flowers, fruit-trees and shrubbery; but in the mean time getting ready to emigrate to the Pacific Coast, just as soon as I can do so."





Home is What we Make It.

The elements which constitute this Mecca of our affections, this Jerusalem of the human heart, are in every age, and race, and country the same. If we would see them in their exact and perfect development, we have but to consider what constitutes heaven, for home is heaven and heaven is home. To all of us there may be a heaven to go to heaven in.

The first element in importance is charity. Our conception of a happy fireside is one around which love is king; where foibles and faults, covered by the mantle of charity, are hidden from view, where discords are drowned in concords, and care and toil are made sweet by being shared. The refrain of the heavenly song is: "Unto Him who loved us and redeemed us." He bore our sorrows and carried our griefs, and so are we to bear each other's burdens.

Next to charity we would place order, and include in this obedience to law. Said a shrewd observer of domestic management, "I have always noticed that noisy, mischievous, and ungovernable children and bad housekeeping go together." Let the head of the family impose and sustain a wise system of house hold government, and its effects will be seen and felt in the remotest nook and corner of the premises upon which it is established. Have you never been in houses where you felt that the eye of the mistress took in garret, cellar, out-house, grounds, that nothing escaped her observation, and everything was subordinate to her will? Every woman has not the power to fill her house "top full" of her presence, but when that power is hers, and used beneficially, that house is a happy one, its inmates are blessed.

In every well-constituted home there must be festivity and ornament. In the New Jerusalem there is the Marriage Supper of the Lamb, a high festival and even the foundation stones of the city are garnished with all manner of precious stones. We want laughter and merriment around the hearth-stone, we want pleasant pictures on our walls and treasures of books and mementoes on our shelves. The children, God bless them every one, will make the house vocal with fun and frolic if we let them have their way. How little it takes to make them happy when they are properly cared for. Children are rarely ill-tempered unless they are ill, and proper diet, abundant sleep and suitable clothing are the usual conditions of perfect health. As to ornament, it flows in upon us with every season. Spring flowers give place to Summer roses, these to the gorgeousness of Autumn foliage, and these to the Christmas evergreens. One can find in many a five-cent newspaper pictures worth the framing in cones at least. These home-made ornaments speak to the heart so much more quickly than anything bought at the store. Not that we would decry a taste for works of art; we mean to suggest that this taste may be cultivated without expense, where one has no money to expend on it. A golden butterfly and a blue gentian, drawn from life on a bit of card-board, is fastened with a pin to the walls of our dining-room, and the baby's eyes dilate as he points to it and lisps his admiration.

Is there any other element wanting in this sketch? If we know that at our hearthstone our errors will be pardoned, our faults overlooked, our very selves loved, if we find there order and obedience to those laws which underlie our entire nature, if cheerfulness and merriment abound, and evidences of taste smile around us, what else is wanting to make this a home?

But these results do not come by accident. Only those who exert themselves to compass these most blessed ends may hope to succeed. That charity which thinketh no evil, that long suffering which cannot be overcome, that patience that cannot be wearied must abound; there must be words of commendation for actions well done and silence under provocation, for we are all mortal.

At best we can but approximate remotely in our earthly habitations to the perfec-

tion of that heavenly home, but the effort will give us some moments of bliss, some brief foretaste of the joys that await the blessed on the other shore.

Pluck.

Few virtues are more popular, more fascinating, and, unfortunately, more rare than pluck. I do not refer to the blind, spasmodic, feverish, impulsive manifestations that are usually classed under that head. I mean that steady, cool, quiet, invincible, and persistent quality, founded on neither ignorance nor miscalculation, spurred on neither by emulation nor conceit, following out, though clearly foreseen and well-appreciated dangers and difficulties, some purpose, be it good or bad, which is the fortunate heritage of some individuals. Pluck is distinct from physical courage; rather, the latter is but an element of it. It is, perhaps, best described as moral courage in relation to physical matters. No eminent man has retained the light he occupies without it; and no one who possesses it but has in him the most valuable element of a great man. The world pays to it its most heartfelt if not its loudest homage. There are few who cannot sympathize with it, for it is peculiar to no class in life; and, though always retaining the individuality, it accords just as well with the muscles of the prize-fighter as well as with the transcendent genius of Napoleon. Either may exist without it; but then the Napoleon is a vulgar schemer, and the prize-fighter a brute—and there are plenty of both. It is a virtue beneficent solely through the magnetism of its own intrinsic quality. In whatever cause displayed it is always a noble and ennobling trait. If exercised for good, so much the better; if not, it still remains pluck, and commands admiration.—Julian Hawthorn.

A Sermon on "Push."

When Cousin Will was home for vacation, the boys always expected plenty of fun. The last frolic before he went back to his studies was a long tramp after hazle-nuts. As they were hurrying along in high glee, they came upon a discouraged looking man and a discouraged looking cart.

The cart was standing before an orchard. The man was trying to pull it up hill to his own house. The boys did not wait to be invited, but ran to help with a good will. "Push, push," was the cry. The man brightened up; the cart trundled along as fast as rheumatism would do it, and in five minutes they all stood panting at the top of the hill.

"Obliged to ye," said the man "you just wait a minute;" and he hurried into the house, while two or three pink-aproned children peeped out of the door.

"Now boys," said Cousin Will, "this is a small thing; but I wish we could all take a motto out of it and keep it for life. 'Push!' it is just the word for a grand clear morning like this.

"If anybody is in trouble, and you see it, don't stand back; push!"

"If there's anything good doing in any place where you happen to be, push!"

"Wherever there's a kind thing, a Christian thing, a happy thing, a pleasant thing, whether it is your own or not, whether it is at home or in town, at church or at school, just help with all your might; push!"

At that moment the farmer came out with a dish of his wife's best dough-nuts, and a dish of his own best apples; and that was the last of the little sermon.

WORK!—There is a perennial nobleness and even sacredness in work. Were he ever so benighted, forgetful of his high calling, there is always hope in a man that actually and earnestly works; in idleness alone there is perpetual despair. Work, ever so mammonish or mean, is in communication with nature; the real desire to get work done will itself lead one more and more to truth, to nature's appointments and regulations that are truth. Consider how, even in the meanest sort of work, the whole of man is composed into a kind of real harmony the instant he sets himself to work. Doubt, desire, sorrow, remorse, indignation, despair itself, all these like hell-dogs, lie beleaguering the soul of every man; but if he hurls himself with free valor against his task, all these are stilled, all these shrink murmuring far off into their caves. Blessed is he who has found his work; let him ask no other blessedness.

BRIDGET ENJOYING HERSELF.—Two servant girls employed in an aristocratic family in Reading, Penn., recently carried on a high lark while the family was away, wearing all the fine clothes they could lay their hands on and inviting company to the house, doing the honors in fine style. They went out for a ride, got caught in a shower, ruined some \$900 worth of rich wearing apparel, and to cap the climax, found the family at home on their return. They are now enjoying the fruits of their frolic in jail.

A House of Our Own.

Next to being married to the right person, there is nothing so important in one's life as to live under one's own roof. There is something more than a poetical charm in the expression of the wife:

"We have our cozy house; it is thrice dear to us because it is our own. We have bought it with the savings of our earnings. Many were the soda fountains, the confectionary saloons, and the necessities of the market we had to pass; many a time my noble husband denied himself of comforts, wore his old clothes, and even patched up boots, and I, O me! made my old bonnet do, did the plainest of cooking; saving was the order of the hour, and to have a 'home of our own' was the united aim. Now we have it. There is no landlord troubling us raising the rent, and exacting this and that. There is no fear harbored in our bosom that in sickness or old age we will be thrown out of house and home."

What a lesson do the above words teach, and how well it would be if hundreds of families would heed them, and instead of living in rented houses, which take a large share of their capital to furnish, and a quarter of their earnings to pay their rent, and the rest to eat accordingly, would bravely curtail expenses and concentrate their efforts in having "a home of their own." Better a cottage of your own than a rented palace.

The Death of a Good Woman.

The fell Reaper is no respecter of persons, times or places. He gathers his harvest everywhere. The death of Mrs. Horace Greeley is an illustration of this trite saying. The roar of political conflict was hushed for a moment to do honor to the memory of her many virtues, and both factions paused at the brink of the grave, and uncovered at the sight of the great grief of the Nestor of the Press, as the partner of his toils, and the life-long sharer of his joys and sorrows was laid in the narrow house appointed for all living.

The boast of heraldry, the pomp of power,
And all that beauty, all that wealth e'er gave,
Await, alike, the inevitable hour—
The paths of glory lead but to the grave.

SOCIETY is the atmosphere of souls; and we necessarily imbibe from it something which is either infectious or salubrious. The society of virtuous persons, is enjoyed beyond their company, while vice carries a sting into solitude. The society or company you keep, is both the indication of your character and the former of it. In vicious society, you will feel your reverence for the dictates of conscience wear off and that name at which angels bow and devils tremble, you will hear condemned and abused. The Bible will supply materials for unmeaning jest or impious buffoonery; the consequence of this will be a particular deviation from virtue, the principles will become sapped, the fences of consciences broken down; and when debauchery has corrupted the character a total inversion will take place, and the sinner will glory in his shame.—Robert Hall.

THE INVISIBLE CHILDREN.—Oh, it is not when your children are with you, it is not when you see and hear them, that they are most to you; it is when the sad assembly is gone; it is when the daisies have resumed their growing again in the place where the little form was laid; it is when you have carried your children out, and said farewell, and come home again, and day and night are full of sweet memories; it is when summer and winter are full of touches and suggestions of them; it is when you cannot look up toward God without thinking of them; it is when they have gone out of your arms, and are living to you only by the power of the imagination, that they are the most to you. The invisible children are the real children, the sweetest children, the truest children, the children that touch our hearts as no hands of flesh ever could touch them.

HABITS.—It has been said that we are creatures of habit, and it should be remembered that good habits are quite as easily formed as bad ones. Persons who complain of being unable to break themselves of a bad habit may be assured that the same difficulty will exist in breaking a good one, when it is formed.

A LADY CONTRACTOR.—An exchange says that Mrs. Catharine Strange, of Ottumwa Iowa, has just completed the grading of two miles of railroad near that town. This is certainly a new field for the industry of women, and one that has not heretofore been mentioned.

THE art of saying appropriate words in a kindly way is one that never goes out of fashion, never ceases to please, and is within the reach of the humblest.

YOUNG FOLKS' COLUMN.

Don't Discourage the Boys.

We give this a place in the Young Folk's Column although it might seem more appropriate in the Home Circle department. It should be read, however, by both parents and children—by the former to the end that they should be careful how they discourage the well meant efforts of their children, and by children that they may be made aware that efforts are being made to instill correct ideas into the minds of thoughtless parents, as well as into the inexperienced minds of Youth:—

A father had given his son a book, and as he was going away to preach at a distant appointment, he spoke of the appropriateness of his spending his leisure hours on the Sabbath in reading it.

When he was gone, a sudden impulse seized the boy to win the father's approval by seeing how much he could read.

So every moment he could gain he read in his new book, thinking all the time how pleased his father would be with his diligence. When he returned he hastened joyfully to meet him, showing him the mark, and telling him the number of pages he had read. But the father was cold and tired, and worse still, was thoughtless. So he hastily put the boy aside, with the chilling words "You should have read twice as much."

If a blow had struck the boy to the earth, it would have been a slight injury, compared to this blow to the spirit. It crushed hopelessly for the time all aspiration, all efforts after knowledge. It made him look almost with aversion on his father. The scar on the spirit was carried away into manhood. The book stood on his library shelf, but the mark had never been moved. No additional page was ever read in it.

Oh, how we need to watch ourselves in these moments of weariness and perplexity! Hasty, petulant words, where a child looks for approval, are wounds to the spirit, hard indeed to bear. It takes all our maturer fortitude to meet with and even mind such disappointment, and can we be surprised that the tender child's spirit grows discouraged and bitter under them?

Evening Pastimes.

THE RIBBONS.—Let the company stand in a circle, each provided with a piece of ribbon, strip of old cloth, or something of the kind, of which he holds one end, while the leader, standing in the center, holds all the remaining ends in his hand. The leader then announces that all who strictly obey his commands shall be rewarded with a forfeit, while no notice will be taken of those who act contrary to orders. When the leader says "Hold on," all are to let go the ribbons; when he says, "Let go," they are to hold on. A great many will be caught by this simple game. The object is to secure as many forfeits as possible.

THE CURATE.—Each of the company must select a trade or profession, when the one who has chosen that of a curate must begin by saying: "I called at your house, Mr. Tailor, to be measured for a coat, but I found you absent. Where were you, Mr. Tailor?" The one who has chosen the vocation of tailor must immediately reply, naming some other trade, as for instance, "I was at the jeweler's to get my watch repaired; but, Mr. Jeweler, you were absent—where were you?" The jeweler might immediately answer, "I was at the dress maker's, and wished to order a new dress for my wife; but, Miss, Dress-Maker, I found you absent—where were you?" And thus the game can go on, at the will of the company, and any one who is called on must answer promptly, and give the reason for absence, and a forfeit is due from every player who fails to give an answer suitable to the trade named, or who assigns any reasons that has previously been given.

THE KEY OF THE KING'S GARDEN.—This game requires only memory and attention. The company being seated in a circle, the leader begins by saying to his next neighbor, "I sell you the key of the king's garden." Thus having passed round the circle as before, the leader next says, "I sell you the rat, that gnawed the cord, that held the key of the king's garden." The next time round, he says, "I sell you the cat, that eat the rat, that gnawed," &c. Next, "I sell you the dog, that killed the cat, that," etc. "I sell you the stick, that struck the dog, that," etc. "I sell you the fire, that burned the stick," etc.; "the water that quenched the fire—the pail that carried the water—the wood that made the pail," etc., etc. This game can be extended as far as may be desired; there should be no delay or hesitation, and each mistake is to be punished by a forfeit. J. C. B.

NO WONDER we have the small-pox! A member of the medical profession makes this startling statement concerning that loathsome disease: "There are certain hypoglycemic and diaphoretic conditions of the organism dependent on the hypodermic action of the ganglia of the cerebro-spinal system, which evolve an abnormal diathesis affecting the levator labii superioris aliiqui nasi muscle, and producing follicular degeneration of the buccal and gastroenteric mucous membrane."

DOMESTIC ECONOMY

OATMEAL BREAKFAST CAKE.—This is made of coarse oatmeal, with water enough to saturate it, and little or no salt. Pour it into a baking tin, half an inch or three-quarters deep, shake it down well, and when this is done it should be so wet that two or three spoonfuls of water should run freely on the surface. Put it in a quick oven and bake twenty minutes. Eat warm. It will be as light and tender as the best "Johnny cake," or else you have wet it too much or baked it too long. This is one of the most accommodating baked dishes that can be made. It will do very nicely with a little longer time, if the oven is not quite hot. If it will not bake there at all, pour it into a frying-pan, cover it close and set it on the top of the stove, where it will even bake in fifteen minutes. For a hurried breakfast and a slow coal-fire, it is invaluable. Scarcely any wholesome thing in the bread line can be prepared more readily. It can be made still thinner and baked quicker. It is good, either crisp or moist. For emergencies alone, every housekeeper will find it convenient to be able to make the breakfast cake. Many use oatmeal mixed with buckwheat, wheat or corn, for griddle cakes. For this use it should be cooked first. Take, say one-half pint of the porridge or the mush, diffuse it in one quart of water and add the wheat meal, sifting it in and stirring slowly.—*Western Rural*.

THE PHILOSOPHY OF WASHING FLANNELS.—Many persons buy flannel partly cotton to avoid the shrinkage in washing which is supposed to be inevitable. We have in the house all wool Shaker flannel which has been washed every other week for two years, and although nearly worn out the shrinkage is scarcely perceptible. The secret of washing lies in two particulars. First, the soap used must contain no resin, as this hardens the fibres of the wool. Flannel soap, so called, is manufactured by our leading soap boilers, and differs from other laundry soaps chiefly in containing no resin. Second, no water below 110° or 112° Fahrenheit ever comes in contact with the flannel. Our white flannels take precedence over all the rest of the washing. We fill the Doty washer with soap suds, pass the flannels through it, wring them out, scald in blue water, wring again and hang out immediately, then go on with the rest of the washing. Blankets are washed in this way as easily as sheets, and feel as soft and look as nice almost as when they come from the store. If one has no washer, with a wringer and a pounding barrel, blankets and flannels need never come in contact with any but boiling water.—*Cor. N. Y. York-Tribune*.

TO BOIL CORNED BEEF.—If the piece is very salt, let it soak over night. If young beef and properly corned, this is unnecessary. For boiling, throw cold water over it after washing off the salt, letting the meat be well covered. The rule is twenty-five minutes to a pound for boiling meats, but corned beef should never be boiled; it should only simmer, by being placed on a part of the range where the simmering can be uninterrupted from four to six hours, according to the size of the piece. If it is to be served cold, let the meat remain in the liquor until cold. Tough beef can be made tender by letting it remain in the liquor until the next day, and then bringing it to the boiling point just before serving. For rump pieces this is a superior method. A brisket or plate-piece may be simmered until the bones can be easily removed; then fold over the brisket-piece, forming a square or oblong piece; tie over it a piece of muslin, place sufficient weight on top to press the parts closely together, and set it where it will become cold. This gives us a firm, solid piece, which, eaten in slices, is a delightful relish.—*Hearth and Home*.

OBSERVATIONS ON PRESERVES, THE BOILING OF SUGAR.—All preserves should be kept in a very dry place, and so covered as to exclude all air. If a very small quantity of sugar has been used, a warm place does no harm, but when not properly boiled, that is, boiled sufficiently long, but slowly, heat makes them ferment, and damp makes them mouldy. For the first two months after they are made sweetmeats should be inspected frequently, that they may be re-boiled in case they are not likely to keep.

Boiling the sugar is the great art in preserving. Few people are aware that in two or three minutes a syrup over the fire passes from one gradation of boiling to another, called by confectioners "degrees of boiling." Attention is only drawn to this fact in order to guard against under boiling, which prevents preserves from keeping, and against too quick and too long boiling, which makes them candy.—*Ex.*

CREAM TAPIOCA PUDDING.—Soak 3 table-spoonfuls of tapioca in water over night, pour off the water and put the tapioca into a quart of boiling milk, and boil ten minutes. Beat the yolks of four eggs with a cup of sugar, add 3 table-spoonfuls of prepared coconut, and stir in and boil five minutes longer. Pour into a white pudding dish—beat the whites of the four eggs to a stiff froth with three table-spoonfuls of sugar. Put this over the pudding, sprinkle prepared coconut over the top, and brown five minutes.

MAKING SAUER-KRAUT.—The best sauer-kraut is made from Savoy cabbage, and in this wise: In the first place let your "stand" holding from a half barrel to a barrel, be thoroughly scalded out; the cutter, the tub and the stamper also well scalded. Take off all the outer leaves of the cabbage, halve them, remove the heart and proceed with the cutting. Lay some clean leaves at the bottom of the stand, sprinkle with a handful of salt, fill in half a bushel of cut cabbage, stamp gently until the juice just makes its appearance, then add another handful of salt and so on until the stand is full. Cover over with cabbage leaves, place on top a clean board fitting the space pretty well, and on that a stone weighing twelve or fifteen pounds. Place away in a cool place, and when hard freezing comes on remove to the cellar. It will be ready for use in from four to six weeks. The cabbage should be cut tolerably coarse. The Savoy variety makes the best article, but it is only half as productive as the Drum-head and Flat Dutch.

FRYING POTATOES.—First take the required amount of potatoes, pare and slice very thin, and sprinkle salt over them. Have ready a frying-pan, with equal parts of melted butter and fat from salt pork, if you have it; if not, use a little less of nice lard; any housekeeper can judge as to the required quantity. Have the fire pretty hot, and as soon as they are nicely browned on the bottom turn carefully, so as to not have them look broken or mussy. As fast as they are brown on the bottom, turn (but not before) until they are sufficiently cooked. We think potatoes, fried thus good enough for any one. It takes one-half or two-thirds as long to cook this way as to boil. The other way is to take cold, boiled potatoes, slice thicker than for raw ones, and fry in the same way; the boiled ones fry much quicker.

CONSUMPTION OF FOOD.—An instructive article in a German newspaper makes known, by carefully selected statistics, the great increase that has taken place of late years in most European countries in the consumption of articles of food and drink which our grandfathers regarded as luxuries. In Prussia the yearly consumption of meat per head had advanced from 33 lbs. in 1806 to 40 lbs. in 1849; brandy had grown from 3 quarts to 8, and wine from $\frac{3}{4}$ quart to 2 quarts. The increase in sugar, again, was from $1\frac{1}{2}$ lb. to 7 lbs., and in coffee from $\frac{1}{2}$ lb. to 4 lbs. These figures do not bring us to the latest times, but the increase has been even in a greater ratio during the year since 1849.

FROZEN CUSTARD.—This is a nice dish for dessert, and very easily prepared: Boil two quarts of rich milk. Beat eight eggs and tea-cupful of sugar together, and after the milk has boiled, pour it over the eggs and sugar, stirring all the while. Pour the whole mixture into your kettle, and let it come to a boil, stirring it constantly. Then take it off the fire, and let it become cold. Flavor it with whatever essence you prefer. Then freeze it.—*Western Rural*.

CURING BEEF.—A writer in the *Western Rural* says: Dissolve eight pounds of salt, and four ounces saltpeter in about a pail of water, by heating on the stove. When it comes to a scald, add two quarts molasses and two pounds of sugar. After skimming carefully pour the whole over the beef, and place weights on it, to keep it under. These are the proportions to about a hundred pounds of meat. Let this lie from four days to two weeks.

APPLE FRITTERS.—This is a favorite dish with many, and often preferred to dumplings. We like them prepared thus: Make a batter, not very stiff, with one quart of milk, three eggs, and flour to bring it to a right consistency. Pare and core half a dozen large apples, and chop them well in the batter. Fry them in lard, as you would doughnuts. For trimmings, we like powdered white sugar best, though good brown sugar will do.

The good effects of associated action have never been better illustrated than in the establishment of cheese factories in the United States. The improvements that have been introduced into the manufacture of this important article of diet, have through this agency been so great that the American product now competes with the best English in the London markets, whereas it was almost unsalable twenty years ago.

PATENT FLOUR.—Take 6 lbs. wheat flour, mix 5 tea-spoonfuls dry carb. soda (carefully pulverized) through it; then 7 do. cream tartar, and 6 do. of salt. Incorporate these, and you have risen cake at hand, to which add either milk or water, shortening or not, as suits, and you have several kinds or what is called soda cake. To this quantity of flour $\frac{1}{4}$ lb. butter would answer.

CLEANING STOVES.—Stove lustre, when mixed with turpentine and applied in the usual manner, is bleaker, more glossy and durable than when mixed with any other liquid. The turpentine prevents rust, and when put on an old rusty stove, will make it look as well as new.

WISTARIA VERSUS FLIES.—A New York housekeeper has discovered that the wistaria creeping plant will keep out house-flies. The pestiferous insects will not enter a window where one of these creepers is growing.

Dressing and Marketing Turkeys.

Thousands of dollars are wasted by turkey-raisers each year, for lack of system and carefulness in dressing their fowls. A bird picked clean, and without a bruise, will generally sell for from two to five cents a pound more than one that lacks either of these recommendations. The plan practiced in New England, and one that generally procures a prompt sale in Eastern cities at considerable advance over the prices that are obtained in the markets of New York, is substantially as follows:

Never feed the morning of the day on which the turkeys are to be killed; and at an early hour drive them into some easily-accessible stable. Gather your neighbors in the proportion of one man to about fifteen birds, if your flock is large. Provide two half-hogshead tubs for the feathers, or one, as you may need, and, having set it under some shelter, place a row of chairs or stools in a circle round it. Now darken the doors of your stable, and quietly seize a bird, holding it so that, in its struggle to free itself from your grasp, it shall not hit its body or wings against any solid substance. Then, with your left hand take fast hold of the legs and wings, drawing the latter backwards and placing the neck of the bird across a round stick, sever the head from the body with a sharp axe, held in the right hand; then hold the bird at an angle from you, or what is as well, press it firmly against the even ground, breast downward, so that there will be no possibility of its bruising itself while struggling.

As soon as the bird's struggles are ended, seize and pull out first the tail and larger wing feathers, up to the third wing-joint, counting from the body outward; then holding the bird on your knees, never allowing it to touch the tub, carefully and quickly take out the smaller feathers, being specially particular not to tear the skin, and always keeping in mind that the least disfigurement will injure the sale. When it is nearly picked, consign the bird to some less muscular person to take out the pin-feathers. This can be easiest done with the point of a sharp pen-knife, pressing against the thumb, with the feather between. In no case should the body be laid aside till everything is removed that would offend the eye.

After the bird is cooled lay it on a board covered with several thickness of woolen cloth, and while it is held on its back by an attendant, cut with a sharp pen-knife a circle about the size of a two-cent piece around the vent, through which aperture remove carefully and completely the entrails, keeping all the fat attached to them in the body with the fingers of one hand, while the drawing is performed with the other.

Then cut off the wings, if you have not done it before, at the third joint, wipe the neck thoroughly, leaving not a particle of dirt or a stain of blood; lay the turkey on its back in a cool place; the next morning, draw the skin over the bone of the neck, and tie it firmly with a common cotton string, and your bird is ready for sale, and if well fattened, will bring the best price.

When they are packed for market, they are laid breast down in clean boxes (shoe boxes are best,) the cover firmly nailed, the box marked with the gross weight, tare and net, with the shipper's name on one end and the consignee's in bold characters near the middle, and if they are cold when put into the box, and kept in a cool place afterward, they will be as salable at the end of three weeks as they are on the day after their first packing.—*Hearth and Home*.

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Ten Acres Enough: A practical experience, showing how a very small farm may be made to keep a very large family, with extensive and profitable experience in the cultivation of the smaller fruits. Tenth edition, 1871. Price, post free, \$1.50, at this office.

Observations on the Culture of Silk in California. By L. N. HOAR, of Sacramento, 1870. Pamphlet, 33 pages. For sale by DEWEY & CO., Publishers of PACIFIC RURAL PRESS, San Francisco. Post paid, 25 cts.



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AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

Daily News, Dec. 12: THE COLLEGE OF AGRICULTURE.—The walls of the College of Agriculture at Berkeley are rising day by day, and the magnificent building is fast assuming its proper proportions. On the south end, the wall has been carried up to the cornice, as high as it will go. It presents a handsome appearance.

There are no openings in the third story of the south end; but, instead, there are iron panels, of window size, upon which are represented various California cereals and fruits. All the iron work will be set within a week from this time, and all the mason work will be done by the first of next month.

ARTESIAN WELLS.—The artesian well which Mr. Van Eastland has had bored on the gas company's grounds, at the corner of First and Washington streets, is down two hundred and thirty feet. This depth was reached last week and a good supply of excellent water was found, equal to about one hundred and eighty gallons per hour.

OYSTER BEDS.—There are two oyster companies owning beds in the creek. It is reported that another company is coming in. Oystermen say that these bivalves thrive much better here now than they did some years ago. Then the water was kept muddy by the frequent passage up and down of boats, and the oysters had a hard job of it to live. There is less travel now on the creek and the water is clearer. Hence, the oysters lay off, enjoy themselves and grow fat.

Transcript, Dec. 11: THE CROPS.—It is not premature to speculate on the crops of the next season. Already the early rains are proving of the very greatest benefit to our agricultural interests. The earth retains much of the moisture of last year's rains, so that with less than the usual quantity of rain during the ensuing winter fair crops will be secured. In some counties the grass is already up and growing finely. Farmers will doubtless sow more grain this year than last.

Yesterday morning Oakland was enveloped in another heavy fog which did not rise and leave us until noon. The ferry boats had to run very slowly and cautiously, and the fog bells sounded as dismal as the notes of the funeral bell. They are welcome however, so long as we can't get the much-needed rain for our gardens.

LOS ANGELES.

Cor. Sac. Record, Dec. 12: I am still loitering in the "City of the Angels," enjoying the very pleasant Indian summer weather, which is indeed summery, for in the middle of the day the sun is too warm for comfort, and one is glad to keep in the shade. The nights and mornings are quite cool and were it not for this the visitor, especially from the Eastern States, and there are scores of such, could hardly believe that December had come. The thick dust is still a serious drawback to comfort. The plentiful rains which, as the telegraph informs us, have visited California generally have not reached this valley, and everything in field, valley and town has still the sombre, dusty appearance of September. The farmers generally tell me, however, that they do not wish for rain before the middle of this month—they feeling more sure of good field crops if they then come for the first time than if the rains fell in November. As I am only a sojourner here at present I can give no personal testimony on the subject. I feel quite sure, however, when riding out I get half smothered in a cloud of dust, stirred up by a "prairie schooner," that a little rain would be agreeable.

The Beauties of the Country.

The visitor to Los Angeles must not keep himself to its hotels and streets, if he would know all the beauties and advantages of this section of the State. I have mentioned the San Gabriel valley, and it is one of the most lovely spots on the face of the globe. It is due east from this city and about ten miles distant. A very low ridge of hills separate it from Los Angeles valley, so low, indeed, that Frank Malone, were he driving a span of his horses over, would not break a fast trot on a single rod of the road. It is a charming drive. The San Gabriel valley is about thirty miles long and about fifteen wide. The climate is still more balmy and even than that of Los Angeles. Its productions are of the tropic and temperate zones indiscriminately. On the east the valley is flanked by a spur of the Sierra Nevadas, from every few rods of which gush out refreshing springs and streams of the purest, softest water that can be possibly found. This water is used for irrigation, and so gradual and peculiarly so is the slope of the land that almost every acre in the valley can be irrigated without danger of being washed away by the torrent, or the inhabitants troubled with miasma from stagnant water. The San Gabriel river comes from the same range of mountains and passes through the "El Monte" portion of the valley, and on to the Los Nietos section, and so to the ocean, fertilizing the land for scores of miles.

MERCED.

S. F. Bulletin, Dec. 14: THE FIRST SHIPMENT OF CALIFORNIA COTTON ARRIVED.—Sixteen bales of cotton were received by Simon, Jacob & Co. to-day from the fields of H. F. Buckle & Co., Merced county. The cotton is of good quality, and some has already been sold to the Marysville Mill for trial. Buckle has some 250 acres planted with cotton this year, and employs

from fifty to sixty men in its cultivation. Col. Strong, the first cotton planter, of the State, has also a considerable quantity of cotton in the neighborhood of Bear creek and Suelings. As there has been a partial failure in the Eastern cotton crop, the California article will sell at a fine figure. Middling, and all above middling, is much scarcer in the market than usual. The California producers will demand the Eastern rates for their cotton. When another lot is received here, the consignee will make a shipment to Liverpool.

Ventura Signal, Dec. 7: A FINE PLACE.—Col. Hollister will soon have the largest almond orchard in the State. It will contain about 20,000 trees. Besides these he is planting large numbers of limes, lemons and oranges, and many other fruit trees. A recent importation of bananas by him, from the Sandwich Islands, is looking well. The Colonel can have, and seems determined to have, the banner farm of Southern California.

NEVADA.

Republican, Dec. 14: FRUIT STORED IN TRUCKEE.—Over five thousand boxes of Winter fruit have been sent from parties in Santa Clara to Truckee for storage. This is a good place to embalm Winter fruit, and the fruit men down in the warm valleys have found it out.

NOT FROZEN YET.—The surface of Donner Lake still refuses to congeal, notwithstanding the cold nights we are having. In consequence of such stubbornness our skaters are obliged to go to Boca and Martis Valley to indulge in their favorite pastime.

POTATOES.—The Boca Mill Company have purchased 40,000 pounds of potatoes which were raised on the Truckee river this side of Verdi and in Nevada county. They are superior to any that can be had in any other portion of California.

CALIFORNIA has six potteries, of which two are in Sacramento, one at Oakland and one at Antioch. They are engaged at present in making articles at Rockingham, yellow and earthenware, sewer pipe, red crockery, flower pots and fire brick, but one of the Sacramento establishments will soon commence to burn terra cotta.

SAN DIEGO.

Union, Dec. 12: HOP CULTURE.—The Los Angeles *News* points to the magnificent specimens of hops exhibited at the recent Southern District Agricultural fair as evidence that the soil and climate of both Los Angeles and San Bernardino counties are admirably adapted to the culture of this valuable article of commerce. We do not know whether anything further than mere experiment has been ventured upon in hop growing in San Diego county; but we are quite sure that there are sections where the hop would prove as thrifty as in our two bordering counties. The *News* quotes from Miller's circular some interesting facts concerning hops in California. The estimated yearly consumption in the State is 450,000 pounds. The product in 1870 was 558,118 pounds; in 1871, 277,055 pounds. There was, August 1st, a prospect of a fair average crop this season.

World Dec. 7th: SUCCESSIVE CROPS.—CANNING A USELESS PRECAUTION IN SAN DIEGO.—In strolling around the city, the other day, we were struck by a sight that, to a Northerner, is almost incomprehensible. In passing one garden we noticed a large number of vegetables growing, in the various stages of advancement, from the tender leaf first bursting through the earth, to the same vegetables in the fullest maturity. Peas that were scarcely two inches high graduated in the different rows up, until, in the last, we found the full pod, fit for table use. Tomatoes, that had just been "set out," up to kindred plants filled with the ripe and delicious esculent. Beets, beans and the innumerable family, that add so much to the comfort and health of man, we found in the same transition, from the embryo, to the full and ripened state.

In another part of the same garden, in contrast with these, was a lemon tree, hanging full of that delightful tropical fruit. Nor, with all this useful array, was the ornamental forgotten, for in every available spot, flowers in such a variety, and with such richness of coloring, were scattered about as is never seen outside of a hot house, by the inhabitants of the bleak East.

Union Dec. 5th: A sweet potato, weighing 23 pounds and measuring 36 inches in circumference, is exhibited at the Horton House. It was grown at Pardee's place in the Sweetwater Valley, without irrigation.

MORE INVALIDS COMING.—Dr. McAllister, surgeon of the P. M. S. S. Co's steamer *Montana*, informs us that there are several invalids among the passengers of the steamer from New York, who purpose after making a short visit to San Francisco, to return to San Diego to remain here during the winter. The Doctor is a first-class physician, and his advice, we think, had some influence on their determination.

SANTA BARBARA.

Index, Dec. 7: DECEMBER IN SANTA BARBARA.—Sunday, December 1st. We sit at our writing table trying to realize that this is winter. The windows and doors are wide open to the slight breeze that just rustles the shades. The little fire on the hearth, kindled at sunrise, has left nothing but a dull red ember slowly covering itself with an ashy paleness to show that it ever lived. The sunshine lies upon the fields like the sunshine of August, except that a trembling haziness, scarcely amounting to cloudiness, relieves the eyes from the power of its fullest brightness at intervals during the day. We look out as we write, upon a scene tranquil as the ideal Sabbath, whose emblem and crown is peace.

The lower air is tremulous with quick vibrations, of reflected sunbeams. The vineyard whirs with happy hum of insects. The olive trees mingle their outer and their inner colors as their myriad fingers toy with the unquiet air. The pomegranate slowly swings its crimson censers, and the plant pepper gathers its drooping robes of green about it as the dreamy wind goes by. The town lies before us, sloping easily, far to the sea. Unfinished buildings meet the eye on every side and seem oppressed with a sense of their incompleteness, as they rest in silence for the day. Houses of all bright and sombre shades are thick among the spreading trees that seem to cover the plain. The view is broad, of garden and vineyard, dark groves and open hillsides, every line and angle and graceful curve fully perceptible in the crystal clearness of the sun-saturated air.

The limit of this terraced vision but touches another of a broader and a different beauty in the expanse of water. An hour ago a heavy fog lay close upon it, revealing only the mountain tops upon the islands thirty miles to sea. Now the dark ocean stretches in the interval, smoothed as if pressed by angels' feet, sparkling with joyous light from a myriad of ever-shifting points, while beyond, against the islands it washes the base of a bank of fog, white and compact as a wall of snow, reaching a dozen miles with borders as symmetrical as though formed by rule and plummet.

Midsummer on land and sea; yet no languor nor summerheat invades this slight shadow where we sit, but the delicious coolness of autumn, with its light breadth just lifting the paper under our pen.

SANTA CLARA.

Mercury, Dec. 12th: ORANGE CULTURE.—The orange tree is hardier than many people imagine. In this city during the heavy frosts of last week, when ice formed during the night in exposed places a half-inch in thickness, the orange trees, growing in the open air and unprotected, were uninjured. It is not the frosts that stand in the way of successful orange culture in this section, but the lack of sufficient summer heat. In the Sacramento Valley, where the frosts are much heavier than with us, but the summers much warmer, the orange has been found to grow in perfection. With a little extra care in the culture of the orange here, we believe like results could be obtained. The trees should be planted on the south side of buildings or high board fences. The soil should be well stirred around the roots of the trees, and the summer growth forced by frequent irrigation. By this method they will acquire a vigorous growth, which our severest winter frosts will fail to impair.

SANTA CRUZ.

Sentinel, Dec. 13: OUR GRAPES EAST.—Several of our citizens here favored their friends East with choice varieties of grapes grown in the Santa Cruz Mountains, and lately received such grateful acknowledgements through the press, as the following, taken from the *Laporte Argus*, in noticing some select grapes (sent by Mr. B. Cahoon, of Cahoon's sawmill,) grown in Fitch Bros.' vineyard:

"Our thanks are due for some choice specimen bunches of California grapes, received by express direct from the land of gold. The fruit is something wonderful to Hoosier eyes, as it bears a greater resemblance to plums than it does to our home style of grapes."

Such are the good words always spoken in praise of the fine fruits grown in this land of choice fruits, viands and more delightful climate.

How pleasant it is to go into the orchards and vineyards this 7th day of December, and find these choicest varieties of fruit still clinging to the tree and vine, and still pleasanter to know that this is a land of perpetual summer, wherein one may live and enjoy life without experiencing the dreaded winters, so many of us have been familiar with in Eastern homes, but to which we have bid farewell forever.

DELICIOUS PEACHES.—B. Cahoon, near Soquel, six miles from Santa Cruz, brought to our office this morning, a choice variety of clingstone peaches, quite as delicious as any of the cling variety we ever tasted. The peach was grown from a seedling and is the latest variety known; a fine flavored peach that matures in December will be quite an accession to the nurseries of this coast. The sample was plucked December 2d.

CHOICE RAISINS.—Some of our various vine-growers are entering quite extensively into raisin making, and that class dried or prepared from the Muscat grape are a choice variety indeed. Mr. Jarvis has a large quantity now ready for market, which excel the best quality of foreign raisins now in market. This too promises to become an extensive and profitable branch of business in this county. A visit to the Vine Hill vineyards will amply repay all trouble and expense. Go, see, and be refreshed.

PAPER SHELL ALMONDS.—While on a visit to the vineyard of G. M. Jarvis, of Vine Hill, a day or two since, we had the pleasure of gathering from his almond orchard, a few soft shell almonds. In size, texture and general appearance, they equal any grown in any part of the world. This branch of agriculture will yet become extensive and profitable in this county, for there are thousands of acres well adapted to almonds and the English walnut.

SAN JOAQUIN.

Republican, Dec. 9: LARGE SALE OF WHEAT. Saturday the price of wheat advanced from \$1.75 to \$1.85, several lots having been sold late in the day at the latter price. One large

lot of 11,000 tons, was sold by John Jones to Moore Bros. at \$1.76, on Friday.

FARMERS' CLUB.—There was no meeting of the Farmers' Club on Saturday last. The members appear to have lost all interest in the organization.

Independent, Dec. 14: IRRIGATION CANALS.—The San Joaquin and King's River Irrigation Company, which is engaged in constructing a canal to carry the water of the San Joaquin river from a point near its intersection with Fresno slough out upon the plains on the west side of its present channel, for the purpose of irrigation, are still pushing forward their work. The canal is now completed for about sixty miles, and an immense body of land is thus rendered available for cultivation. During the last season but a short section of the canal was completed in season to use its water for irrigating the last crop, yet the result of the experiments made were highly satisfactory. This canal runs through the driest portion of the San Joaquin valley, and, owing to droughts, it is only in the most favorable seasons, which only occur at long intervals, that a crop of grain can be raised upon the best of land. Last winter was unusually wet in most parts of the State, yet in this locality so little rain was had that the grain sown upon the land above the canal where it could not be irrigated, produced nothing, and the crop was not even cut for hay; while below the canal, where facilities for irrigation were afforded, the yield was immense. One party put in two hundred and fifty acres of wheat as an experiment, and, although he was unable to obtain water to irrigate his land until April, he harvested from his field an average of fifty bushels to the acre.

ANOTHER CANAL.—In addition to the canal above mentioned, another one has been organized and has commenced work upon a proposed canal which will take water from Tulare Lake and carry it still farther back from the San Joaquin river, to irrigate that portion of country which is above the canal first mentioned. The latter company, profiting by the experience of the first company, will give their ditch less fall, and making it wider they will be enabled to carry the water so near the foot of the Coast Range as to irrigate nearly the whole of the vast plain on the west side of the river. This company believe that they will easily secure all the water they need for this purpose, and if they are not deceived in this respect their work will be one of the most important enterprises ever undertaken in the interior of this State. It will convert a tract of country which in usual seasons is but little better than a desert, into one of the most valuable and productive sections of the country in the State.

YUBA.

Appeal, Dec. 10: DRY OR WET?—Is the season to be dry or wet? That's the question. We find on examining the rain record that December is the wet month; that in December, 1849, twelve and a half inches fell; in 1852, 13.410; in 1862, 8.637; in 1866, 9.511; in 1867, 12.850—the mean for the month for 20 years being 5.004. This is the 10th of December, and if the storm does not appear soon there is reason to fear a dry winter. There is plenty of time for the December rains, but none to spare.

HARDY TREES.—Though severe frosts have occurred in this city night after night, and on one or two occasions ice has formed in vessels, and pumps have been frozen stiff, the thousand of young and old orange trees all escaped injury—their large and green leaves showing no evidence of being damaged. A few days ago it was supposed that young orange trees must be treated as tender house-plants, but we find that they will stand the cold weather as well as other fruit trees.

DEC. 12: RANCH STOCK.—A drove of cows, yearlings and calves, were driven through the city yesterday evening, from the foothills. We asked the driver whose stock it was, and he said: "It is mine." The public is therefore left with only this information as to the proprietorship.

ALFALFA.—There is an active demand for alfalfa seed, and the price is advancing. Two weeks ago it was selling at 20 cents, but now commands 25 and 30 cents per pound. There are many farmers who are stocking ten and twenty-acre fields for pasture, and so long as this continues seed will command a high price. The crop appears to be admirably adapted to our climate, and alfalfa pasture is timely as a substitute for the common grazing grounds which have been purchased, fenced and put under cultivation. The alfalfa-grazing field has become a necessity with every farmer who has stock.

AN EXTENSIVE NURSERY.—Two years ago, Dr. Teegarden purchased a part of the "Hudson Extension," in Yuba City, and laid out about three acres of the same in a nursery. The proprietor ordered from the East the best seeds and the choicest varieties of small tree in the market and planted his field. The result now begins to show itself. His nursery, which is surrounded by a flourishing orange hedge, contains millions of desirable shade, ornamental and fruit trees, besides flowers and shrubs of the most desirable varieties, many of which are now suitable for transplanting. Among the ornamental trees we noticed a large number of Monterey cypress, Spruce pines, Eucalyptus, Cassias, Norway and American Sugar Maples, Elms, etc. In the first line the Doctor has every kind, and many of the trees are thrifty and hardy. In the ornamental as well as fruitful list are oranges, lemons, limes, almonds, walnuts, etc.

MONTANA.

It would be useless to argue which is the best valley where all vie in producing such

really wonderful crops. The Gallatin, Boulder, Missouri, Prickly Pear, Sun River and Deer Lodge, and others which I have visited during the progress of the surveys for the railroad, presented landscapes dotted alike with the homes of quiet husbandmen; but, though sparsely taken up, sufficiently cultivated to judge of the general fertility of the soil. In a word, the wheat, oat, rye and barley fields were marvelous.

I have seen a great deal of the best wheat lands of Cumberland and Lancaster counties, in Pennsylvania—the garden spots of that State—and have traveled all through Ohio, and in Indiana and Illinois somewhat; also Pierce and St. Croix counties, in Wisconsin, which latter counties I thought produced heavier crops and better spring wheat than I had ever seen; but I do not remember seeing or hearing of more than forty-five bushels of wheat raised per acre, and in none of these districts the average ever reached more than twenty-eight bushels per acre. In fact the average yield in Wisconsin, the greatest wheat growing State in the Union, is only seventeen bushels per acre, and in Ohio not quite twelve bushels at present, while in Montana this year the average is over fifty-five bushels per acre, the average of many farms being over sixty-five bushels, as I have been informed. Not one, but several farmers that I could name, from specially measured acres, have taken off somewhat over one hundred bushels of wheat to the acre, that would weigh sixty-one pounds to the bushel. One hundred bushels to the acre seems almost incredible, but whether it is believed or not in the East does not alter the fact.

WASHINGTON.

Walla Walla Union, Nov. 30: WHEAT.—Since the prospects have been that navigation would soon close on the Columbia for the season, they have had the effect to bring down the price of wheat still lower, and now some buyers are only offering 40 cents per bushel. The demand has been so light during the fall, and the prices offered at Portland so low, that there has not been a great deal of this year's wheat disposed of, consequently we have a large surplus on hand, with no prospect of getting it to market before spring. Still we believe that those who can hold on to it until that time, will be able to realize a much better price than they can now get. One or two months of open river would be of vast benefit to our people.

Rain Fall.

SACRAMENTO, Wednesday Morning, Dec. 4, 1872.

The rain-fall from 3 P. M. of the 28th of November to midnight of the 30th, measured 1.500 inches. Since this period heavy fogs have prevailed, amounting in aqueous precipitation in the rain-gauge to .024 inches more. It is worthy of remark that since the rainy and foggy term set in, the wind has maintained steadily a Northerly direction, while the daily mean temperature has averaged six degrees above that of the five days previous to the rain, with the wind also from the same quarter. This anomalous condition of the atmosphere was attended with a high barometer—only one single day (Dec. 1st) falling as low as thirty inches. What we are to expect from these eccentric meteoric phenomena, which put to fault all our calculations, remains to be seen.

T. M. LOGAN.

"Scattering Seeds!"

We herewith offer, till further notice, to send the PACIFIC RURAL PRESS FREE for the term of THREE MONTHS (12 Nos.) to any one address which any new yearly subscriber may designate. Every old subscriber, upon renewing his subscriptions may send us the name of any neighbor or friend in any part of the U. S.—who does not already receive the PRESS—and a copy of the paper shall be sent for ONE MONTH free. Making the paper, in this manner, known to those likely to subscribe, we believe will more rapidly extend our list. We know there are thousands who would subscribe at once if fully acquainted with the benefits to be derived from our columns.

GROCERIES AND PROVISIONS.—Wines and Liquors are shipped to country orders with dispatch, carefully packed and packed free of extra charge, by B. SBRABONO & BRO., 531 Washington street, S. F. This long established firm now import their goods from the four parts of the world, and consequently undersell all other grocers in San Francisco. All orders from the State and coast are promptly attended to. Address B. SBRABONO & BRO., Lock Box 1126, San Francisco. d14-3m

Notice to Farmers and Others.—Skilled plowmen, general farmers, teamsters, laborers, mechanics, servant girls, etc., can be obtained by applying by letter or personally, at CALIFORNIA LABOR AND EMPLOYMENT EXCHANGE, 637 Clay street, extending to 630 Commercial street, San Francisco. 20v4-3m

EXTRA CHOICE EARLY ROSE POTATOES.—For SEED.—Acknowledged by all to be the best Early Potato. Selected and put up in new, double-sewn gunnies, in fine order for shipping. For sale in lots to suit. Address orders or apply to H. DUTARD, 217 Clay street, San Francisco. de21-1m

AGENTS WANTED.—The new REVOLVER TRAP winds up like a clock. Kills Rats, Gophers, Squirrels, etc. Throws them away and sets itself. One Trap, by Express, for \$1; or postpaid, by mail, \$1.50. COMBINATION TOOL CO., 124 Nassau street, New York. del4-8t

THERE is nothing like leather Shoes with a SILVER TIP for children. Try them. They never wear through at the Toe. For Sale by all Dealers.

25 CTS. PER COPY

Will be paid for copies of No. 2 of the RURAL PRESS, of January 15, 1873, at this office.

Farmers, everywhere, write for your paper.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

SAN FRANCISCO, Wednes., A. M., Dec. 18.

FLOUR.		do, butter.	
Alviso Mills, bbl. 4.00	@ 25	do, large, do.	4 @ —
California, do.	25	do, bays, do.	3 1/2 @ —
City Mills, do.	25	do, pink, do.	4 @ —
Comme'l Mills, do.	25	do, dsh'd shell	8 @ 10
Golden Gate, do.	25	do, soft, do.	18 @ 25
National Mills, do.	25	Peanuts, do.	3 @ 6
Santa Clara Mills, do.	25	Peanuts, do.	3 @ 6
Genesee Mills, do.	25	Hickory do.	25 @ 12 1/2
Oregon, do.	25	Brazil do.	25 @ —
Vallejo Star, do.	25	Prince Almonds, do.	16 @ —
Venus, do.	25	Cocanuts, do.	12 1/2 @ —
Stockton City, do.	25	BAGS.	
Lombard, do.	25	Eng. stand, Wht.	1 @ 15
GRAIN, ETC.		Flour Sacks 1/2s.	13 1/2 @ 16
Wheat, Cal. coast, 70	@ 85	Wool Sacks.	15 @ 17 1/2
do, shipping, 1.75	@ 1.80	" Barley do.	15 @ 12
do, milling, 1.75	@ 1.80	Hessian 40-lb gds.	12 @ —
do, Oregon, 1.35	@ 1.45	COFFEE.	
Barley, Dark, 1.35	@ 1.45	Costa Rica, do.	19 @ 19 1/2
do, light, 1.35	@ 1.45	Guatemala, do.	15 @ 18
do, Brewing, 1.35	@ 1.45	Java, do.	21 @ 23 1/2
Oats, Coast, 2.00	@ 2.25	Manilla, do.	16 @ 17
do, Bay, 2.10	@ 2.25	Rio, do.	21 @ —
Corn, White, 1.40	@ —	Ground in cs.	30 @ —
do, Yellow, 1.40	@ —	Chicory, do.	12 1/2 @ —
Buckwheat, 2.00	@ —	FISH.	
Rye, 2.00	@ 0.5	Psc. Dry Cod, new	— @ 7
POTATOES.		Salmon in bbls.	— @ 25
Sweet, 75	@ 1 1/2	do 2 1/2 cans, 35	@ —
Humboldt, 1	@ —	do 2 1/2 cans, 35	@ —
Monterey, 1	@ —	Pick. Cod, bbls.	— @ —
Tomatoes, 1	@ —	Pug. Sd. Smok'd	— @ —
WOOL, ETC.		Herrg. bxs 3/4 bbl	— @ 30
Native, 12	@ 20	Mack'l No. 1, 1/2 bbl	— @ 12 1/2
California, 25	@ 28	" Extra, do.	— @ 14 1/2
Oregon, 25	@ 28	" in kits, 35	@ 2 1/2
Hides, dry, 20	@ —	" ex. mess., 35	@ 2 1/2
do, wet salted, 10	@ —	" ex. mess., 35	@ 2 1/2
Tallow, 8	@ —	NAILS.	
DAIRY PRODUCE.		Assorted size, 8	@ 9
Butter, Cal. fresh, 32	@ 40	PAINTS.	
do, ordinary, 35	@ 40	Stand. Wb. Lead.	— @ 12 1/2
do, choice, 55	@ 40	Whitening, do.	— @ 2 1/2
do, new firkin, 37 1/2	@ 33	Chalk, do.	— @ 3
do, packed, 37 1/2	@ 33	Paris White, do.	— @ 3
do, New York, 32 1/2	@ 33	Ochre, do.	— @ 3
Cheese, Cal. new, 14	@ 16	Venetian Red, do.	— @ 3
do, Eastern, 14	@ 16	Red Lead, do.	— @ 11 1/2
Eggs, Cal. fresh, 57 1/2	@ 60	Litharge, do.	— @ 11 1/2
do, Oregon, 57 1/2	@ 60	RICE.	
do, Eastern, 57 1/2	@ 60	China No. 1, 1/2 bbl	6 @ 6 1/2
FRESH MEAT.		do 2, do.	6 @ 5 1/2
Beef, fr quality, 8	@ 9	Japan, do.	6 @ 5 1/2
do, second do., 7	@ 8	Patna, do.	6 @ 5 1/2
do, third do., 5	@ 6	Hawaiian, do.	8 @ 9
Mutton, 7	@ 11	SOAP.	
Pork, undressed, 6	@ 6 1/2	Castile, 1/2 bbl.	10 1/2 @ 12 1/2
do, dressed, 8 1/2	@ 9	Local brands, 5	@ 10 1/2
POULTRY AND GAME.		SPICES.	
Live Turkeys, 19	@ 21	Allspice, per lb.	— @ 16
Hens, per doz., 7.50	@ 8.50	Cloves, do.	21 @ 24
Roosters, 6.00	@ 6.50	Cassia, do.	24 @ 30
Chickens, 4.00	@ 6.00	Nutmeg, do.	97 1/2 @ 100
Ducks, tame, doz. 10	@ 12	Whole Pepper, 18	@ 19
do, Mallard, 4.00	@ 5.00	Ground Allspice, 22 1/2	@ 25
Geese, per doz., 1.75	@ 2.00	do Cassia, 25	@ 25
Quail, per doz., 1.75	@ 2.00	do Cloves, 25	@ 25
Hare, per doz., 1.50	@ 1.75	do Mustard, 25	@ 25
Rabbits, per doz., 1.50	@ 1.75	do Ginger, 22 1/2	@ 25
Larks, per doz., 1.50	@ 1.75	do Pepper, 22 1/2	@ 25
Doves, per doz., 1.50	@ 1.75	do Mace, 22 1/2	@ 25
Plover, per doz., 1.25	@ 1.50	SUGAR, ETC.	
Curlew, per doz., 2.00	@ 2.25	Cal. Cube per lb.	— @ 12
Teal, per doz., 1.50	@ 1.75	Circle A crushed	— @ 12
Snipe, Eng., doz. 25	@ 30	do granulated	— @ 12 1/2
do, small, doz. 75	@ 100	Golden C, do.	— @ 10 1/2
Venison, 8	@ —	do Extra, do.	— @ 10 1/2
FRUIT MARKET.		Hawaiian, do.	20 @ 22 1/2
Good fair supply in the market. There have arrived 700 crates and boxes of oranges from Mexico. There is a good supply of apples and pears.		Cal. Syrup in bbls.	32 1/2 @ 35
Mex. Or. per 1000 40.00	@ 50.00	do in 1/2 bbls.	35 @ 37 1/2
Limes, 12.00	@ 15.00	do in 1/2 bbls.	40 @ 45
Art. Lemon, 1.00	@ 1.25	SALT.	
Malaga do, 12	@ —	Cal. Bay, per ton 5.50	@ 15
Bananas, bch 20 40.00	@ 40.00	Carmen Island, 14.00	@ 15.00
Pineapples, 1/2 doz. 50	@ 60.00	Liverpool fine, 23	@ 24
Apples, eat g, bx. 1 50	@ 2.00	do coarse 19.00	@ 20.00
Cooking, 75	@ 1.00	TEA.	
Pears, Eating, 1.00	@ 1.25	Oolong, Canton, 19	@ 25
" Cooking, 50	@ 75	do Amoy, do.	20 @ 25
Pomegranates, 100	@ 1.00	do Formosa, do.	20 @ 25
Grapes, Mission, 3	@ —	Imperial, Canton, 25	@ 35
Rose of Peru, 1	@ —	do Pingsuey, 45	@ 90
Black Prince, 1	@ —	do Moyne, 60	@ 100
Muscad of Afr, 8	@ 12 1/2	Gunpowder, Canton, 30	@ 42 1/2
Flame Tokay, 7	@ 10	do Moyne, 65	@ 125
Black Morocco, 8	@ 12 1/2	Ying Hy, Canton, 25	@ 40
Wine Grapes, 14	@ 12 1/2	do Pingsuey, 45	@ 70
DRIED FRUIT.		do Moyne, 65	@ 100
Apples, 1/2 bbl. 6 1/2	@ 8	Japan, 1/2 chests,	30 @ 75
Pears, 1/2 bbl. 8 1/2	@ 9	Japan, 1/2 chests,	30 @ 75
Peaches, 1/2 bbl. 8 1/2	@ 9	Japan, 1/2 chests,	30 @ 75
Apricots, 1/2 bbl. 8 1/2	@ 9	Japan, 1/2 chests,	30 @ 75
Plums, 1/2 bbl. 6	@ 10	Japan, 1/2 chests,	30 @ 75
Pitted, do 1/2 bbl. 18	@ 20	Japan, 1/2 chests,	30 @ 75
Raisins, 1/2 bbl. 6	@ 12 1/2	Japan, 1/2 chests,	30 @ 75
Black Figs, 1/2 bbl. 7	@ 12 1/2	Japan, 1/2 chests,	30 @ 75
White, do 1/2 bbl. 15	@ 20	Japan, 1/2 chests,	30 @ 75
VEGETABLES.		Japan, 1/2 chests,	30 @ 75
Cabbage, 1/2 bbl. 5	@ 6	Japan, 1/2 chests,	30 @ 75
Garlic, 1/2 bbl. 5	@ 6	Japan, 1/2 chests,	30 @ 75
Green Beans, 1/2 bbl. 5	@ 6	Japan, 1/2 chests,	30 @ 75
Green Corn, 1/2 bbl. 5	@ 6	Japan, 1/2 chests,	30 @ 75
Marrowfat Squash, 1/2 bbl. 5	@ 6	Japan, 1/2 chests,	30 @ 75
Artichokes, 1/2 bbl. 4	@ 5	Japan, 1/2 chests,	30 @ 75
Tomatoes, 1/2 bbl. 4	@ 5	Japan, 1/2 chests,	30 @ 75
Spring Beans, 1/2 bbl. 4	@ 5	Japan, 1/2 chests,	30 @ 75
Lima Beans, 1/2 bbl. 4	@ 5	Japan, 1/2 chests,	30 @ 75
Peppers, 1/2 bbl. 4	@ 5	Japan, 1/2 chests,	30 @ 75
Okra, 1/2 bbl. 6	@ 7	Japan, 1/2 chests,	30 @ 75
PROVISIONS.		Japan, 1/2 chests,	30 @ 75
Cal. Bacon, 13 1/2	@ 15	Pickets, rough, pntd., 16	@ 20
Eastern do., 13	@ 15	Pickets, fancy, pntd., 22	@ 25
do sugared, 18	@ —	Shingles, 1/2 M., 13	@ 18
Cal. Hams, 17 1/2	@ 18	Rough, 1/2 M., 25	@ 30
Eastern do., 17	@ 18	Half-inch Siding, M., 22	@ 25
Cal. Smoked Beef, 12	@ 14	Half-inch Siding, ref. M., 18	@ 20
MISCELLANEOUS.		Half-inch Siding, ref. M., 18	@ 20
Bras., 27 1/2	@ 30	Half-inch Siding, ref. M., 18	@ 20
Middlings, 32 1/2	@ 35	Half-inch Siding, ref. M., 18	@ 20
Hay, 16	@ 22	Half-inch Siding, ref. M., 18	@ 20
Straw, 60	@ 70	Half-inch Siding, ref. M., 18	@ 20
Oil cake meal, 18	@ 20	Half-inch Siding, ref. M., 18	@ 20
Beeswax, 10	@ 12	Half-inch Siding, ref. M., 18	@ 20
Honey, 3 1/2	@ 4	Half-inch Siding, ref. M., 18	@ 20
Onions, 3 1/2	@ 4	Half-inch Siding, ref. M., 18	@ 20
Flaxseed, 3 1/2	@ 4	Half-inch Siding, ref. M., 18	@ 20
Canary do., 3	@ 4	Half-inch Siding, ref. M., 18	@ 20
Mustard, white, 13 1/2	@ 14	Half-inch Siding, ref. M., 18	@ 20
do, brown, 13	@ 14	Half-inch Siding, ref. M., 18	@ 20
Peas, 3 1/2	@ 4	Half-inch Siding, ref. M., 18	@ 20
Beans, sm'l white, 3 1/2	@ 4	Half-inch Siding, ref. M., 18	@ 20

RECEIPTS.—Receipts of Wheat and Flour have been up to the average; receipts of Wheat have been in excess of last week. With these exceptions, and that of Brandy, receipts of Bay produce have fallen off largely, compared with last week. Receipts of Potatoes from Coast ports still continue up to the average of last week; those of Barley have increased, while those of Oats have fallen. We have received 300 cents of Maccaroni Wheat from Valparaiso. From Oregon the "J. L. Stephens" has

brought us 2,851 sacks and 11,034 qr. sacks of Flour, and quite a large consignment of Oats—2,672 sacks.

We summarize receipts of Bay produce to date—17,088 qr. sks. of Flour; 186,056 cents of Wheat, 7,806 do. of Barley; 1,516 do. of Oats; 4,368 do. of Potatoes; 226 do. Corn; 86 do. Buckwheat; 1,326 do. of Beans; 724 do. of Middlings; 673 do. of Onions; 1,278 tons of Hay; 98 do. of Straw; 1,530 Hides; 301 bales of Wool; 11,618 gallons of Wine; 4,045 do. of Brandy; 100 bbls. of Beet Sugar; 10 bales of Hops, and 32 bales of Cotton.

Wheat receipts at Oakland were 36,800 cents. Receipts from Coast ports have been as follows: Wheat, 13,694 cents; Barley, 4,721 do; Oats, 2,437 do.; Potatoes, 23,837 do. From British Columbia we have received in addition 773 cents of Potatoes. Three-fourths of the Wheat came from Moss Landing, and the balance principally from Santa Cruz, the remainder being divided between Santa Cruz, Amesport and San Diego, in nearly equal quantities. One-half the Oats came from Tomales, the balance from Carmel, Pigeon Point and Amesport, with 25 sacks from Humboldt; while more than one-third the Potatoes came from Humboldt, the balance hailing from Santa Cruz, Pigeon Point, Moss Landing, Carmel, Russian River, with small quantities from Tomales, Point Arenas, Amesport and Monterey.

WHEAT.—The total receipts to date this week from all quarters have been 236,850 cents. The top price has not advanced beyond that of last week, but for all grades below choice milling, the price of the lower grade this week, has advanced to that of the next higher grade last week. Wheat in Liverpool has remained stationary at 12s. to 12s. 4d. Freight still continues to fall being now at £3 15s. with a prospect of further falling to £3 and £3 5s. Sales reported during the week may be summarized as follows: 400 sacks of common, \$1.52 1/2; 2,250 do. of Dark Coast, \$1.70; 13,650 do. of Dark and Fair Coast at \$1.75; 800 do. of common, at \$1.80; 10,800 do. of ordinary and choice, at \$1.85; 600 do. of choice, at \$1.87 1/2; 1,420 do. of choice, at \$1.90; 23,800 do. at \$1.95; 73,600 do., at \$2; and 20,460 by private contract.

Exports have been much smaller than last week. They have included, to Liverpool, per "Robert Lane," 32,631 cents; per "Deira," 17,283 cents; and per "Elizabeth Cushing," 30,693 cents; to Cork, per "Arracon," 31,785 cents; and per "Pearl," 10,464 cents; and to Queenstown, per "Britannia," 21,026 cents. Total, 144,422 cents worth \$244,415.

FLOUR.—There have been some large sales last week. Highest brands have advanced to \$6, twenty-five cents higher than last week, and Bakers Extra has been advanced to \$6.25. Exports have included 143 bbls., 320 half sacks, and 22,100 quarter sacks to China and Japan, per Mail steamer and 4,267 to Sydney. Latest advices represent Flour as only worth \$4.60 per bbl. in Hongkong, where there was a stock of 65,000 bbls.

BARLEY.—Barley has remained nearly stationary. Sales during the week have included 800 sacks of Coast at \$1.32 1/2, 1,450 do. at \$1.35, 900 do. at \$1.37 1/2, 300 do. of Bay and Feed at \$1.40, 3,000 do. of Bay and Brew at \$1.42 1/2, 3,000 do. of Bay at \$1.40, 1,500 do. and 800 sacks of Choice Bay Brew at \$1.50.

OATS.—Oats have been very quiet and remains the same. We quote sales of 70 sacks of Coast at \$2 to \$2.10, 1,055 do. of fair at \$2.05; 200 do. of fair at \$2.12 1/2; 400 do. good and Coast at \$2.15; 150 do. at \$2.20 to \$2.25; 900 do. of Choice at \$2.25 and 2,000 of Coast at private rates.

POTATOES.—All the sidewalks of the streets near the City Front are now covered with Potatoes, which have fallen from 12 1/2 to 27 1/2 cents per centals during the week. We note sales of 1,400 bags of Monterey White and Red at from 65c. to \$1.00; 500 do. of Petaluma at from 95c. to \$1.00; 2,500 do. of Humboldt from \$1.00 to \$1.12 1/2; 100 do. of Peachblow at \$1.15; and 1,000 of Pigeon Point a very choice lot bringing as high as \$1.30 to \$1.50; the balance private. Most of the Humboldt lacking buyers are now in store.

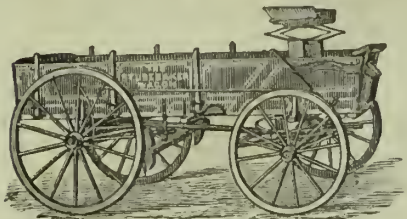
WOOL.—Wool has remained stationary. We note sales of 130,000 lbs. of Fallat current rates. Late mail dates from New York and Boston report a lessened demand. Cape Wools were 2c to 3c less. At Boston sales of 136,000 lbs. of Spring and Fall, California, had been made at 28c to 42 1/2c. Receipts at New York aggregated 164,700 bales for the eleven months, being 19,700 bales less than during the same time last year. The Evening Bulletin remarks:

The Eastern markets continue quiet. At Boston, on the 4th instant, the receipts from the interior were reported to be on the increase, and manufacturers expressed a willingness to purchase desirable lots on reasonable terms. Good Ohio Wools were quoted at 69¢ to 70¢. New York dates of the 7th report a quiet demand. The Wool trade has been very remunerative during the past year, and the prospects for the future are good. It is noteworthy that while there is a steady increase in the consumption of Wool, the facilities for producing it are gradually curtailed in the more settled States. In 1871, there were about 32,000,000 sheep in the United States, yielding an aggregate of 128,000,000 lbs. We annually import 70,000,000 lbs. of Wool, valued at \$10,000,000 and about \$44,000,000 in Woolen goods. To supplant these demands on foreign sources, we ought to have an increase of 25,000,000 to 30,000,000 sheep. The Pacific States and Territories furnish a sufficient area for this purpose, and are looked to as the section whence must come the

most material increase in the Wool product of the country. In this connection, a reference to the British Wool trade will be of interest. According to the returns of the London Board of Trade, the imports of Wool into the United Kingdom for the ten months ending November 1, 1870, were 233,216,000 lbs. and the exports were 77,388,000 lbs., making the net imports 155,828,000 lbs. During the same period in 1871 the gross imports were 300,630,000 lbs., to which 18,000,000 lbs. must be added for stock carried over, while the exports were 121,490,000 lbs., leaving 197,140,000 lbs. for the net imports. In the first ten months this year, the gross imports were 275,035,000 lbs.; exports 127,406,000 lbs., making the net imports only 147,629,000 lbs. As the imports there from November 1st to April 1st are generally light, high prices must continue to rule during the interval.

GENERAL MERCHANDISE.

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,

They Have no Peer.

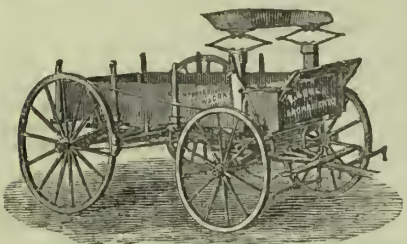
IRON AXLE,
THIMBLE SKEIN,
HEADER AND
SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BARRACKS and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed,

As I make a SPECIALTY of the WAGON TRADE.
The attention of DEALERS is especially requested.
Send for CIRCULAR and PRICE LIST.

16v3-3m E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,
San Quentin, Cal.

ap22-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow,

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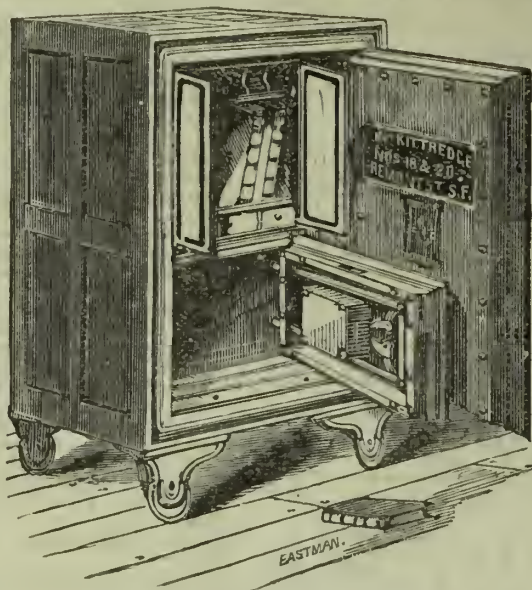
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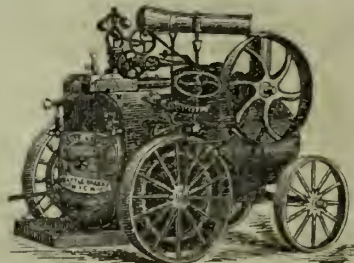
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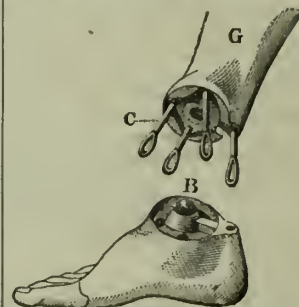
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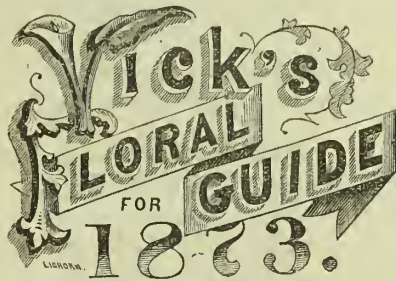
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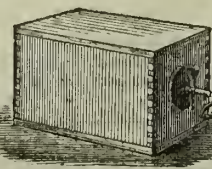
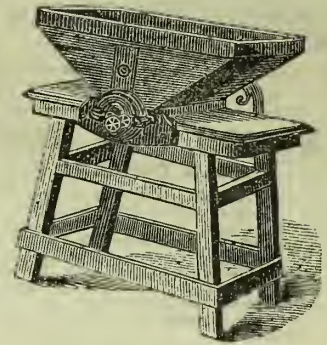
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A Beautiful Parlor Amusement. Fifty Chromo Scenes on the Overland R.R. "Across the Continent." Splendid gift for the Holidays; suitable for old or young. Sent to any address on receipt of \$2. THURSTON, 9 Post street. A new Comical Game, "A Wolf in the Fold," sent for \$1. Agents wanted. de21-1m

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21v2-1y

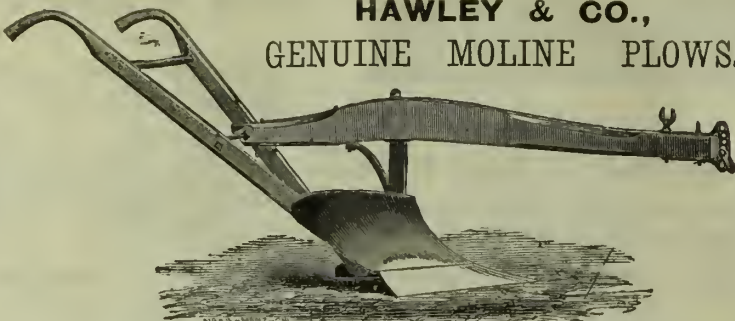
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GENUINE MOLINE PLOWS.

Dealers in Agricultural Tools and General Hardware.



\$350. Fully Guaranteed!

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Nos. 623 and 625 Clay street, SAN FRANCISCO.

13v4-cow

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Fruit, Shade and Ornamental
Trees, Plants, Etc.

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CAPITAL NURSERIES, SACRAMENTO.

Having a very large Nursery Stock, I can furnish Trees and Plants of all kinds cheap. Fruits guaranteed true to name. Send stamp for printed Price List, Catalogue, and instructions for hedge-growing. A large stock of Osage Orange Hedge Plants for sale. Letters of enquiry promptly responded to. Office and Main Tree Depot, U street, between Fifteenth and Sixteenth, Sacramento. Branch Yards, Sayles & Williamson, J street, Sacramento; Burney & Williamson, Modesto; and W. T. Wright, Agent at Colusa.

ROBERT WILLIAMSON,
Proprietor.

25v4-3m

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EVERGREEN TREES AND

Plants for Sale,

At the old stand, corner Oregon and Battery streets, Directly opposite Post Office, SAN FRANCISCO.

I NOW OFFER FOR SALE

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Prosidio Road, near U. S. Reservation (on the line of the Sutter street Cars), SAN FRANCISCO.

A Large and Well Selected Stock of New and Rare Plants for the

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FLOWERING AND ORNAMENTAL FOLIAGE PLANTS AND SHRUBS, Evergreen Trees, Geraniums, Pelargoniums, Roses, Fuschias, Pinks, Gladioli, Lilies, Colons, Pansies, Primroses, in great variety. Also, Tuberoses, Verbenas, Cactus, Heliotropes, etc.

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Eddy street, corner Powell and Market, San Francisco. Bouquets and Ornamental Flower Baskets. Plants in great variety. de21-1m

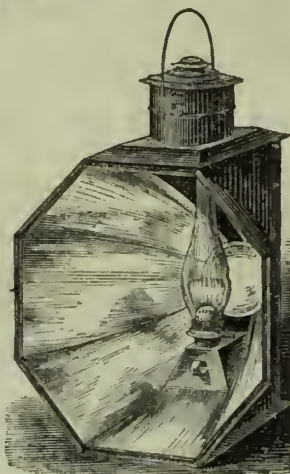
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THE BEST HELP,
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637 CLAY STREET
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WOMAN'S PUBLISHING COMPANY,
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This printing Establishment has been founded for the purpose of opening up a SCHOOL of Instruction for Girls and Women, who are dependent and wish to learn the art of TYPE-SETTING and Printing, as a means of livelihood. A FIRST-CLASS JOB OFFICE has been purchased, with Type and Presses unsurpassed. Experienced and Expert Printers are engaged, capable of executing every class and variety of Book and Job Printing, in No. 1 Style.

CITIZENS, will you aid this enterprise by giving us a portion of your Printing, which will be Guaranteed equal to that of any other House, and at Fair Rates? Lawyers' Briefs, Books, Cards, Pamphlets, Billheads, Statements, Circulars, Posters, etc. We wish to be able to give employment to at least FIFTY Women and Girls by January 1st, 1873. Large numbers of applicants are necessarily refused, as present facilities are not equal to the accommodation of all. Lend us a helping hand, that we may increase our sphere of usefulness. Office, 511 Sacramento st. 23v25 EMILY PITTS STEVENS, Pres. and Sup't.

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GOOD CABLE SCREW WIRE

Boots and Shoes.

BRONZE TURKEYS,

Descended from stock weighing 62 lbs. to the pair - Premium Birds of N. Y. State Poultry Society. Address W. CLIFT, Mystic Bridge, Connecticut.

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Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

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Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,
In quantities to suit purchasers.

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N. GILMORE

El Dorado, El Dorado county, California.

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HAVE YOU A FARM
FOR SALE,
TO RENT,
OR ON SHARES?

The CALIFORNIA LABOR AND EMPLOYMENT EXCHANGE, having ample opportunities to dispose of farms or business places to the many immigrants who daily arrive in California, and whose first steps are invariably directed toward this institution, has opened a Land Department in connection with its Labor and Employment office.

Parties having farms or business places for sale will do well to send the fullest particulars to

California Labor & Employment Exchange,

637 CLAY STREET,

San Francisco.

"Male and Female Labor sent to all parts of the country." 17v4-2am3m

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Condition
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HORSES & CATTLE

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For reliable men, with the assurance of making from \$2,000 to \$5,000 per annum, can be secured in connection with an Agency for the exclusive sale of works by HENRY WARD BEECHER, WILLIAM CULLEN BRYANT, HARRIET BEECHER STOWE, etc. Write for particulars to J. B. FORD & CO., New York, or 339 Kearny street, San Francisco. no304t

PURCHASERS please say advertised in Pacific Rural Press.

PACIFIC RURAL PRESS

Volume IV.]

SAN FRANCISCO, SATURDAY, DECEMBER 28, 1872.

[Number 26.]

Fancy Poultry.

We are well aware that there are those who have little or no confidence in the improved or so-styled "fancy poultry" of the present day, and consider all the new acquisitions as just so many catch-penny concerns, gotten up merely to get big prices for a thing no better than was known to our great-grandmothers.

To all such we would put the simple question—do you believe the present beautiful shorthorned cattle of the present day, any improvement upon the old, big horned Mexican or native California stock? Or the fine woolled Merino any better than the common Mexican coarse woolled, hairy sheep? If you do, why may we not find improved poultry as well? True, there are some humbug introductions, all good things are liable to counterfeits.

The fact is just this, the old barnyard fowl would lay two or three layings a year, of ten or fifteen eggs to the laying, whilst there are layers among the improved breeds, that lay the greater part of the year, nor think of stopping at less than from 100 to 150 eggs in a year. And so with the improved ducks and geese, we have not only larger and finer meated birds, but superior layers.

We herewith give an illustration of a variety of the duck family, introduced by Mr. Geo. B. Bayley, of Oakland; particulars in relation to which, can be obtained by addressing him, Box 659, San Francisco.

Our Second Rain.

The second rainfall of the season, amounting to anything worth noticing, commenced on Monday, the 23d., and has continued with but little intermission through the whole of Tuesday and Wednesday. It is a most timely rain, gladdening the heart of the farmer, and giving promise of another year of bountiful harvests.

In every direction the plows are running, and the acres that are being seeded daily, can be counted by thousands. Already the green blade is starting, and the warmth of the rainfall insures its continued growth, at least till a change shall come over the now-teeming earth.

The past year, simply from the abundance of the rainfall, last winter, has been one of general prosperity with all classes, for when the farmer has his garners well filled, they are sure to fill the purses of the tradesmen, and these two constitute the larger number of our population.

The manufacturer and mechanic in every department of industry, also feel the revivifying influence of a general thrift; and though there is, as usual, the same chronic complaint of closeness of money that we always hear at this season of the year, it bodes no great evil, for the farmers have yet in store vast reservoirs of wealth in their unsold wheat.

And so it is that, in our distress from the tightness of money, all eyes are turned to the condition of the farmer for the solution of the question of our prosperity or adversity, and simply because agriculture is the great throbbing heart, affecting for good or evil the welfare of every civilized country.

THE Board of Supervisors of Santa Barbara County have made provisions for planting trees along some of the principal highways, in that region of the country.

More California Cotton.

From all parts of the great valleys of San Joaquin and Tulare we are getting good tidings of the cotton crop. We have heretofore made mention of the successes attending its culture in Merced county and other parts of great southern inland valleys, and now we get the first report from Fresno county. Mr. Amos Child, from Centreville, Upper King's River, left with us last week a sample of cotton the first out of Fresno county.

To say that it is a fair sample of cotton, would not be enough, for it is fully up to

There is no doubt but his cotton is worth and ought to bring 25 cents a pound; his best offer, however, is 18 cents in San Francisco, which he will probably take, rather than forward so small a lot to an Eastern market. So complete has been his success the past season, he will increase his next year's crop to the full extent; he will be able to irrigate about 90 acres, growing as an experiment on a portion of the same, the well known and always valuable, Sea Island Variety.

Relative Value of Immigrants.

The laboring classes of the Chinese who come among us are not immigrants, under a proper

New York tried to ascertain what amount of cash each immigrant who landed in this city possessed. According to the information received it was estimated that it averaged 68 dollars per head. This, however, was far below the actual sums brought; for the immigrants got it into their heads that the information was asked in order to tax their property, and they accordingly in many cases gave sums ridiculously below the actual amount.

Taking, however, the sum of 68 dollars as the average amount, we have in that year, with 142,342 new-comers, \$9,679,256 in hard cash. In addition to the money, which may be fairly taken at least at \$100 per head, there is a large amount brought in wearing apparel, jewelry, workman's tools, etc., which may be safely reckoned on an average at \$50 more. This would make the personal property of every immigrant landing in New York \$150, so that \$38,848,350 were added to the national wealth in the one year 1869, the last upon which calculations have been based, by those who come to that city alone.

This, however, is a very small portion of the benefit conferred on the country to which these immigrants come. It takes a very considerable sum to rear a full-grown, able-bodied laborer, and every such person that comes to the States brings with him in his own person that sum, with the addition of further value from the brisk demand for the labor which he can give. An immigrant then who comes to stay, is of just as much value to a country as the cost of rearing a native-born laborer till he is able for the same amount and kind of work.

But the Chinese, though he may do the same amount of work, is not of the same value to the country, for he cannot become a citizen, will not stay longer than to get what money he wants, and therefore should not claim or receive that consideration which is due to the European laboring immigrant, or our own native-born.

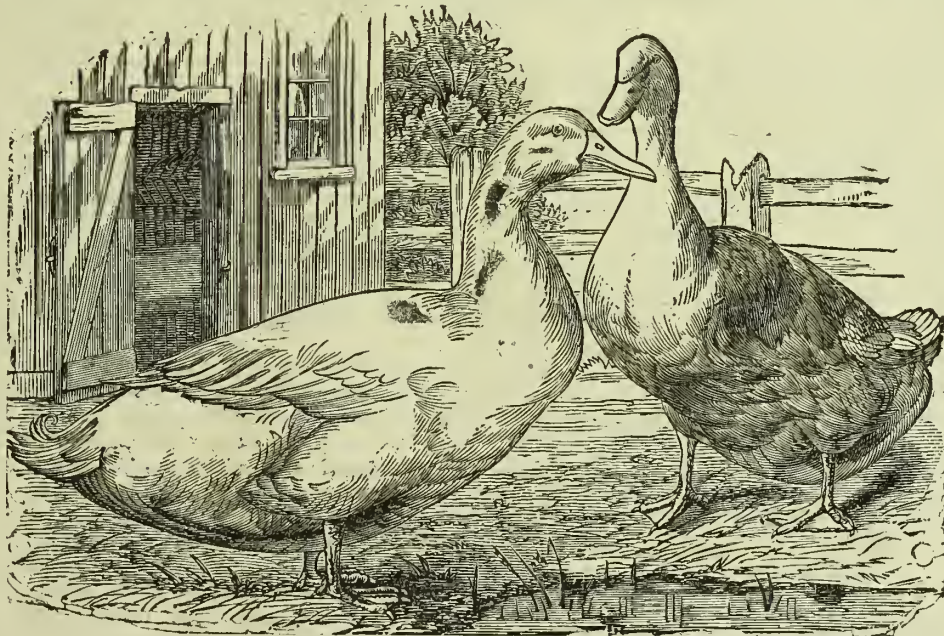
A New Pear.

We have received a box of excellent pears from J. R. Crandall, of a variety quite new to us. They are just now ripening and in fine condition. The history of the pear as given by Mr. C. would indicate it to be a seedling, and the fact that no pear answering its description is found in any of our published catalogues, we cheerfully indorse the name proposed for it, Crandall's Seedling.

We learn from Mr. C. that owing to the extreme productiveness of the tree this year, the fruit was not as large as last year; still it is above medium; of a dull yellow color, sweet and juicy with something of the flavor characteristic of the White Doyenne. It will no doubt early prove a valuable acquisition to our list of best December pears.

NO MORE CLUB RATES.

For the amount of useful and fresh agricultural matter it contains, the RURAL is the cheapest journal of its class in the Union at \$4 per annum. We cannot afford it at \$3 and continue so good a paper. So we intend to put all subscribers impartially on the same paying basis after the first of February next, and do away with Club rates. This will be the fairest and ultimately the best rule for both subscribers and publishers. We are going to make a paper worth more than \$4 a year for every agriculturist, if not everybody else. We give this timely notice that those who have kindly worked for us in getting up clubs may have time to complete them for 1873. We will receive Clubs till that date, and no later.



IMPROVED AYLESBURY DUCKS.

choice, in quality, because of the several samples we have received within the last two months from other parts of the State, this certainly is equal to any, if it does not surpass them all.

A matter of interest connected with its production is this; it was grown upon a light, loamy soil, where nothing like a farm crop can well be grown without irrigation. Here Mr. C., who never cultivated an ounce of cotton before, attempted its production on one and a half acres. With water from King's River, he irrigated his cotton ground no less than five times, once in about three weeks during its growth, by running the water in small ditches midway between the rows, never allowing it to spread over the surface or touch the stalk of the plant.

Extent of Irrigation.

As to the extent of irrigation, to secure the largest and best yield of cotton, the experience of Mr. C. is just this, that where he irrigated the most abundantly, he got the best yield in all cases and places. His cotton was planted on the 25th of April, but thinks the first of April would be better, or as soon after all danger from frost is passed as possible. The first ball of mature cotton was picked on the 28th of June.

He would plant in rows five feet apart, because he finds when sufficient water is given the plants, they will fill that amount of space. His present planting was three, four and five feet apart and thinks five feet the best. The yield on the one and a half acres was 445 pounds or at the rate of very nearly 300 pounds to the acre,

acceptation of the term. They are simply laboring adventurers, pennyless visitors, many of them without a dollar in their pockets when they arrive here and large numbers actually in debt for the cost of their passage. They can neither speak nor understand our language, so that as regards their use to us or benefit to the country, they are simply as any other animal that can work, but cannot talk, though he must be fed, and in addition to this, paid.

If they become anything more than this, it is because we teach them; they are therefore, even in the sense of servants, dependent upon us and indebted to us for what they learn or have at the end of a term of years, when they bid adieu to us, and with their earnings go back to China. Now there is no good reason why we should pay this leach of a visitor, the same amount of money for services rendered, that we do the true legitimate immigrant, who comes amongst us hoping to find work and fair wages that he may become a citizen of the country of his adoption.

European or Asiatic.

But there is another reason why we should favor the European laboring immigrant over the Asiatic. He brings money, and in his family population to the country, both of which we claim to want, and really do need them for the more rapid development of every interest dependent upon money or human muscle. Let us look for a moment at the figures and see if there is not an advantage largely in favor of our European immigration, over that of the Asiatic.

In 1857 the Commissioners of Emigration in

CORRESPONDENCE.

Out of Obispo into Barbara.

EDS. PACIFIC RURAL PRESS:—The "scar and yellow leaf" of our deciduous trees is all there in some localities to mark the seasons, so mild and genial is the climate. But there are other distinctive features, recognizable so palpably that summer and winter could never be mistaken; one of these is dust. We have gathered on an average a pound a day of dust, by the flying wheels casting the particles into our vehicle. This dust, if it had been preserved, would by a careful analysis have determined whether our hoast of superior soil was warranted; for this pulverized earth was no doubt a good sample of the soil from San Francisco to San Diego; as it was gathered by a zig-zag path of 3,000 miles, through Southern California.

The time is not far distant when the RURAL AND SCIENTIFIC PRESSES will require to keep an analytical chemist and assayer to be able to meet the demand for positive knowledge on the subject of the chemistry of agriculture, and its relations to hygienic, aesthetic and utilitarian progress.

A Phenomenon.

The alluvium deposited at the mouth of the Santa Maria river, on the boundary between San Luis Obispo and Santa Barbara counties, is worthy of note.

The old Hacienda of Guadalupe, is on a neck of land between the river and a slough, probably $\frac{1}{4}$ mile in width in each, and not more than 20 feet below the level of the bank is running water; at the house between the two is a well, in which it is 120 feet to the water; the water in the well is at least 100 feet below that in the river and slough, and both are nearly level with or below the ocean, which is distant, probably, half a mile. These are among the geological curiosities, and are interesting in that connection.

A Beautiful Country.

We will now move southward again, and leave the hospitable country of San Luis Obispo, and once more wind through one of the most beautiful portions of southern California; the portion of Santa Barbara county lying north of the Santa Ynez mountains. It is almost in the primitive condition the Padres found it, although the evidences of their matchless skill and industry yet exist in the well preserved aqueducts, reservoirs and other works in concrete. It is a matter of some wonder that we in this age are defective in our knowledge of the mixing of mortar, that will stand the ravages of time as some of those old concrete walls appear to do. Striking this material with a pick it is as firm and hard as the rock that is imbedded in it, apparently, and will endure as long.

There is just enough frost in this region to make the air bracing, and with a few exceptions the water is good, making on the whole a most desirable place to inhabit.

Native Stock.

There are yet some of the old mustang breeds of stock roaming at will, and devouring four times their value in feed. Mr. J. W. Cooper informs me that he sold the last that were owned by him last year at four dollars per head, and is now earnestly praying for some means of restricting the depredations of the lawless bands that forage upon them; the trespass law, like most other laws that are enacted now days, being entirely inoperative.

We shall never be done with the complaints about the deficiencies or non-effectiveness of laws, either for the government of morals or health until society is so arranged that it is for the interest of the law makers to keep the people well in both body and mind, instead of cultivating a chronic state of disorder, as the interests of society now demand in order that certain classes may have heritage. It is refreshing in this "fast" age to drop in upon such sequestered nooks as this.

Santa Ynez Region.

And fancy ourselves secluded from the all-contaminating influence of gold, even if it be only fancy; for if those who are hungrier and thirstier for pure life cannot feel their hope of a redeeming element finally predominating, by such communion with nature as this region offers, how else is it to be kept alive?

How long will it be, does any one suppose before there will be anything like equality before the law? A small farmer complains to me that his little piece of 100 acres was taxed at seven dollars per acre, while his neighbor, who owned 3,000 acres of nearly as good land, was only taxed forty cents per acre! The man whose land was taxed the highest and had little, paid his tax without opposition, but the large landholder fought the forty cent tax to the last.

Equalization of Taxes.

Is it not plain that an equalization of taxation would work a most desirable change, inasmuch as it would soon compel the land monopolists to disgorge. In other words, when there is no discrimination between large and small holders of land of same quality, and all is taxed alike, the non-producer and speculator will be glad to sell at fair prices to the pro-

ducer, and thus relieve the now over-burtheued and industrious classes.

The farce of a pretended freedom and equality is getting rather transparent. But the "great people" are also good, kind, ever bearing, and will, no doubt, sustain many, many grains of sand before a final catastrophe. Nevertheless the catastrophe is inevitable.

F. M. SHAW.

Santa Barbara, Dec. 15, 1872.

Sherman Island.

EDITORS PRESS:—Never has there been so much activity shown on this island as now. In whatever direction the eye glances, plowing is going on, not only with single plows, but with gangs, and the work that is being done by them is well done. Land that has been cleared presents decided advantage to the gang plow, being easier for the team and the plowman; about five acres are plowed with ease each day.

From what I can learn, nearly every acre of land that can be put under cultivation will be; scarcely an acre of land can be rented upon the Island, this time early in the season; all that could be rented has been taken up for a term of years, and the class of men that have taken the lands are of the best class, care being taken by those having land to lease, to have none but good tenants, and it is well that such was the case; this land is getting to be too valuable to be carelessly farmed.

Delegations from Alameda County have come up here this fall, and are now busy plowing and getting ready to sow large tracts of land with wheat.

The Island was never in a better condition than at the present, and from the amount of work being done, the farmers will make a good show for the next harvest. Considerable grain has already been sown all along the front, and as they go further back, the sowing will keep up with the plow.

Potato Harvest.

At the present time large quantities of potatoes are being dug, the quality of which this year is, I think, the best that has ever been sent to the market, for two reasons: First, better stock was used for seed; second, they are better put up, and ripen; farmers will find that it pays better to put in good seed and use better care in putting them upon the market.

The Levee.

The work of building our large levee is drawing to a close, the gangs of men are drawing nearer to each other, and a few weeks will show one of the finest and strongest levees upon reclaimed land, that is to be found in the State; the owners of land on this Island know full well the value of their lands, and some have been to a great expense to put a strong levee the entire circuit of it. To do this work this season, from 600 to 800 Chinamen have been employed; these have all worked in gangs of from 12 to 20 each, and all the work has been under the surveillance of good, reliable white men. I cannot, for my part, see how any accident can come upon us this winter; all the weak places have been made doubly strong; the disaster that overtook us last year, I trust, will not again befall us.

Confiding in the strength of the work many have commenced to fence in their lands; 200,000 feet of fencing has been put up here the past season, many new buildings are being erected, and several new orchards will be set out.

D. L. P.

Overland to Oregon.

He who would enjoy every variety of scenery to be seen on the Pacific coast cannot do better than to start out next April or May for Portland. Send your extra baggage by steamer as the Stage Co. allows only 40 lbs, and charges an extra fare for each 100 lbs over that allowance. You are well acquainted with the trip to Sacramento. The cars will take you through Marysville and Chico, past lovely fields and pastures 170 miles to Redding.

There begins the stage ride of 281 miles to Roseburg. You will find the line thoroughly equipped with the best of Concord coaches, and the horses are as well cared for as at any livery. They start off glossy and prancing. Every horse is wiped down when he comes in, and thoroughly curried before he goes out. The harness is carefully cleaned and soaped, and the coaches are examined. We had been wondering why they did not have more accidents on those lines, arising from break-downs. We suspect that by this extra care the breakages are almost always anticipated, and that the company practices as well as preaches the old maxim: "A stitch in time saves nine."

The Drivers

You will find remarkably temperate and gentlemanly, and so thoroughly skilled in the use of the reins as to rival the illustrious Hank Monk or Clark Foss. Men that have made it their business to drive on these mountain roads often at full speed down steep grades and around sharp curves, acquire such skill that they can always drive to hit the mark. When inside the

coach we thought we must surely be going to destruction. But when you sit by the driver, and see how he does it, confidence takes the place of fear. There are stations every twelve or fourteen miles, where fresh horses are always in waiting. You have a new driver and another stage every four stations. You will find good resting places in Yreka, Ashland and Jacksonville, but those who stop over must take their chances of finding an empty seat in the next stage.

The Road

Leads through scenery varying from the beautiful farms and park-like groves to the picturesque gorges and rocky forests, and again to the grand old mountain peaks, whose hoary old heads are crowned with perpetual snow. Sometimes you go round a cañon for a mile, constantly climbing higher and higher until finally you look below, and throw a stone down to the road where you passed half an hour ago.

The Completion of the Line.

Like the location of the North Pacific Terminus is one of the great conundrums of the northwest. Rumor generally lies, and most of us must depend on rumor for any information that we gain of the plans of these great companies. Almost every one you meet thinks he knows just what they will do, and why they cannot do otherwise. It is reported that Ben. Holladay has sold, or will sell, the Oregon & California road to the North Pacific, and that it will not be for their interest to have a through line to California. Again, it is rumored that the charter of the two companies compel them to form a connection by rail within eight years. The remaining miles of the road will have many heavy cuts, short curves and much trestle work.

The road through Oregon leads through the beautiful valley of the Willamette, the garden and granary of Oregon. Every now and then you see a beautiful farm and a pleasant house, which suggests what the country may become. School houses are plenty and their seats well filled. People came here to make homes, and we see large and happy families. The people have too much land and are very anxious to have more settlers. Two of their citizens are on their way East as Commissioners of Emigration. We may expect to hear of their lectures and writings. Mr. Applegate, the chief speaker, once held an audience four hours listening to an extempore speech. It was in a political canvass, and his opponents secured the hall and meant to prevent his having any meeting, but he organized one outside and drew their audience all out to hear him; so people may depend upon it that the advantages of Oregon will be fully stated to our Eastern friends.

C.

Alfalfa for Cattle.

It has frequently been stated that no pasture could be found better adapted to the sustenance and fattening of cattle than alfalfa. Its merits are based on several distinct facts, established by experience. First, it is more nutritious than ordinary grass; second, it produces more abundantly; third, it requires but little attention; fourth, it is good either for pasture, when green, or hay, when cured. These conclusions were arrived at in a debate held the other day before the Farmers' Club of Napa County. Mr. Cornwell stated that he had twenty acres in alfalfa, seeded in 1854, and although it had suffered greatly from the depredation of gophers, he regarded it as the most profitable piece of land he owned. It yields three times more feed for cattle than any other pasture. In sowing, he seeded first with grain, and when it was half an inch high sowed the alfalfa and brushed it in.

He gave the grain a start so that it would protect the alfalfa from frost. He understood that seed raised here is not as tender as that which comes from Chile. The seed is worth 25@30c. per pound. The second year after sowing his, he cut it down five times. Loose soil is more favorable than heavy. Mr. Trubody has a neighbor who sowed three or four acres of alfalfa on low, close land, and cut from it seven tons to the acre. He thought there was no trouble in producing it, if it was safe beyond the danger of frost. Mr. McIntire had a similar experience to relate. Alfalfa, he said, does well when it is properly cultivated. One of his neighbors has drained and plowed twice before sowing; another has plowed and harrowed well, and both pieces were fine. The former was seeded on the 10th of April. Mr. Laue, near St. Helena, has ten acres from which he cut two crops of hay before August, and then kept stock on it till late in the fall. Thought Spring sowing best. Had sowed with barley, but thought it better to sow alfalfa alone. This concurrence of testimony ought to be satisfactory as to the superiority of alfalfa as food for live stock, and secure it more popularity with farmers than it has hitherto possessed.

CANNED SALMON ABROAD.—It must be gratifying to every one to know that our Canned Salmon is about to become one of our principal exports. The American Grocer adds it to its list of prices current, quoting it at \$3.25 for lb and \$4.50 for 2½ lb tins. Europe has taken 50,000 cases this year, and one house in New York has sold 700 cases within a week. This must be cheering to our Pacific Coast packers.

Trees for Street Planting.

The Committee appointed by the Oakland Farming, Horticultural and Industrial Club, to recommend the most suitable trees for street planting offer the following report for Friday evening, Dec. 7th.

In selecting trees for the above purpose, care should be taken to observe the following requisites: to choose those varieties which will best harmonize with the width of the streets, which are best adapted to the conditions of climate and soil, and which will require the least care and attention.

Our climate being very equable, and the heat during the summer months seldom if ever becoming oppressive, the object of shade is secondary to that of ornament. During the winter season, the atmosphere being very humid, it is best to avoid having too much foliage to obstruct the rays of the sun and thereby add to the pervading dampness. We have therefore chosen deciduous trees as the standard ones best suited to the purpose; and, in order to obviate any appearance of barrenness, which the adoption of deciduous trees exclusively would tend to produce, we recommend that evergreen trees be planted alternately. This arrangement would give us the vernal effect so pleasing in winter, without increasing the dampness of the atmosphere or interfering with a free circulation of air.

We suggest the following plan for the streets of Oakland:

For Broadway—Elm trees, of the white and cork varieties, placed thirty feet apart, with evergreens equidistant between. Of these we would indicate the Eucalyptus Viminalis, the Black Acacia, the Peppermint Gum, the white Mahogany, the Red-edged Gum and the Weeping gum.

Telegraph Avenue—The Ash, Sycamore and Balm of Gilead, planted alternately with the varieties of evergreens above mentioned.

San Pablo Avenue—The native and English Walnut, the Poplar and Ash-leaved Maple.

For the narrow streets the following deciduous trees are best adapted: the Tulip, Horse Chestnut, Lombardy Poplar, Native and Spanish Chestnut, Aspen-leaf Poplar, Wild Cherry and double flowering cherry.

The Committee would recommend that all the oaks be spared as far as practicable.

In selecting the trees herein enumerated, the Committee have chosen those which may be most easily obtained, looking, of course, to their adaptability to the soil and climate. But Nature's domain is so broad and her store so ample that, in the future, with more time to deliberate, with greater opportunities to improve, and with the practical teachings of experience to guide our choice, we can so diversify the arrangement of our trees as to render Oakland one of the most beautiful and attractive cities in the Union.

WM. HARRISON WOOD,
A. F. MONTANDIN,
A. D. PRYAL,
CHR. PETERSON,
JOHN KELSEY,
MRS. E. S. CARR,
Committee.

SAN JOSE WOOLEN MILLS.—The *Mercury*, in noticing the woollen mills of San José, gives the following statistics: Eighty-five hands are now employed at the factory; twenty-four men, three young ladies, five boys, and fifty-three Chinamen. The boys have light but steady work, and the girls pick the knots and specks from the white blankets, with a burling iron—very easy but confining work. There are three sets of cards in operation, and eight spinning jacks—three of which are self operating—and twenty-two looms. Thirty-five hundred pounds of yarn are used per week, two hundred and seventy-five pairs of blankets made, three thousand yards flannel and from fifteen to twenty-five hundred yards of various kinds of men's clothing woven, thus making about twenty thousand dollars' worth of goods finished up per month for wholesale trade.

SAND SPOUTS.—We copy the following from the *Virginia City Chronicle* of the 13th instant: Half a dozen "sand-spouts"—columns of sand drawn up by whirlwinds—were to be seen on the twenty-two mile desert yesterday afternoon from 2 till nearly 3 o'clock. They waltzed about, keeping always about the same distance apart, and moving in the same direction, each apparently a solid column ten feet in diameter and 1,000 feet high. The top of all these columns seemed to be cut off by a brisk breeze from the west, which carries the dust in clouds over the range of mountains lying to the east of the sink of the Carson; sometimes two of these "sand spouts" or whirlwinds—call them what you may—come together, when they explode with a loud report, and both instantly disappear.

We lessen our wants by lessening our desires
We seldom find out that we are flattered.

THE SWINE YARD.

History of the Poland-China Breed of Hogs.

The following is the report of the Committee on Poland-China hogs adopted at the recent National Swine Breeders' Convention, the name Poland-China being retained: The history of the breed of swine known as the Poland-China is as follows:

In the early history of swine breeding in the Miami Valley, Ohio, it is clear, from the best written authorities available, and from oral testimony, that there were two breeds, which to a great extent had been profitably crossed with the common bristled breed of the country. These were the Russia and Byfield breeds. The Bedford breed is also named in connection with the other two. To what extent it was used cannot now be readily determined.

In 1816, we have positive proof from an unquestioned source, that the Shakers of Union Village, situated in Warren Co., Ohio, and being four miles from Monroe, in Butler Co., purchased at Philadelphia one boar and three sows of what was at the time believed to be pure China. They were represented to be either imported or the immediate descendants of imported stock. They were called "Big China hogs." These animals were the first China hogs ever brought into Southwestern Ohio. Subsequently other China hogs were introduced and extensively used.

The Shakers and other judicious breeders in Warren and Butler counties, continued to use the breeds at command, and produced by repeated crosses a hog of exceeding fine qualities, for that period which was generally known as the "Warren County Hog." These hogs continually increasing in good qualities, were bred in both counties, and the very best specimens were carefully and interchangeably used, so as to make the best crosses.

Such was the progress that had been made in forming the ground work of a good specimen of a hog. This condition of the breed continued until about the year 1835 or 1836, when Mr. Munson or Beach of Warren county, first introduced the Berkshire, which were obtained from C. N. Bement of the State of New York; other lots of Berkshires continued to flow into the Miami Valley until about 1841.

The Berkshire blood was liberally infused into the stock existing in, not only Southwestern Ohio, but in Kentucky also. Crossing with the Berkshires was almost exclusively done until about 1838 or 1839, when Mr. Wm. Neff of Cincinnati, imported some choice specimens of the Irish Grazer. This breed soon grew into high favor, and as a consequence, was liberally used in making crosses with the best specimens of the crosses previously made. This intermingling of blood, this crossing of breeds, continued for some time. In a few years, however, the use of the purer blooded Berkshire was entirely discontinued, and there were no further importations made of the Irish Grazer. The breeders of swine in the Miami Valley settled down to the conviction that the basis of a good breed of hogs had been established, and that in the future judicious and discriminating breeders could use, and if necessary modify, the material furnished, so as to meet the highest demands of the public. For more than thirty years no new blood has been introduced into our breed and no effort made to obtain a new supply of the blood of either breed previously used.

While this is true, our breeders have not been indifferent to the further improvement of our breed. Stimulated by their success, they have perseveringly aimed to improve what they have been so successful in forming. The best points or qualities have been preserved, and where practicable, have been made even more excellent. All defective points, or undesirable qualities have been corrected or improved by the care, skill and judgment of our experienced breeders.

Thus, we have a breed thoroughly established, of fixed characteristics, of fine style and unquestioned good qualities, which can be relied upon for the production of a progeny of like qualities and character.

The following are presented as the characteristics of the foregoing breed:

The best specimens have good length, short legs, broad, straight backs, deep sides, flanking well down on the leg, very broad, full square ham and shoulders, drooping ears, short heads, wide between the eyes, of spotted or dark color; are hardy, vigorous and prolific, and when fat are perfect models all over, pre-eminently combining the excellencies of both large and small breeds.

J. M. MILLIKEN, Chairman.

NOT A GOOD CROSS. — John Britton says he has tried a cross between a Berkshire boar and a Chester sow, and is disgusted with the result. He is getting rid of the progeny as fast as possible, and will have no more of it. He regards the pure Berkshire as the best hog in the country. They will fatten where the Chester Whites will hardly keep in working order. This is the experience of all who have tried to cross these two breeds. Separately they are both good breeds, but together they are a failure. — *Western Agriculturist*.

The Swine-Yard.

Swine-ology.

Swine hold an important position in the list of domestic animals, as they form no inconsiderable item in the nation's wealth in supplying a large amount of food for the people. Hence their well-being is a matter of national importance. They do not, however, like the horse, dog, ox, and some other animals, contribute during their life very much to the comfort of man, but, rather on the contrary, very often to his discomfort. It is, nevertheless, desirable, for the reasons above stated, that we should know something of their habits and idiosyncrasies, so as to be better able to understand the nature of the diseases they are subject to.

The hog, although wallowing in the filthiest mire, and sometimes feeding upon the most disgusting kinds of food, both animal and vegetable, and often when in a decomposed state, does not always do so with impunity. We feel persuaded that many animals of this class are annually lost from the effects of improper food, or from living in an atmosphere surcharged with poisonous effluvia, the product of animal or vegetable decomposition; and we think that the owners of pigs often make great mistakes in not paying more attention to the quality of their food and the condition of their lodgings.

Decomposing substances, both animal and vegetable, corn that has undergone a change from long-keeping, or exposed to damp, and which is loaded, perhaps, with the spores of poisonous fungi, the sweepings of warehouses, consisting sometimes of agents of an injurious character, brine from the meat tub, etc., these and other similar substances are often given to pigs as food, and in several instances have been known to cause very great losses.

As a rule, we believe that old, strong hogs are not so easily affected by improper food as young ones, and we have sometimes known sows to appear in perfect health when sucking their pigs, but yet to have their milk so altered in quality from the effect of bad food as to destroy the pigs. — *Prairie Farmer*.

THE HOG MARKET. — It would seem that our stock-raisers and farmers might take the hint from the result of the two last seasons' experiments in importing hogs into this State from Iowa. These hogs, after paying expenses of railroading realized handsome profits to the importers in this city. In California, some land-owners seem to ignore almost every branch of husbandry but one—that of raising wheat. If the season be a dry one, they go where the woodbine twines,—"up the spout,"—and it takes them several years to get on their feet again, financially speaking. Acres of land, in such seasons, lie idle all through the summer with a partly-matured crop, and are turned to no account. It almost seems as though these dry seasons were visited upon us occasionally for the purpose of teaching our farmers the importance of adopting some more general system of mixed farming.

IMPROVING THE BREED OF HOGS. — The Edison Brothers, of Shasta Valley, deserve a great deal of credit for the interest they are taking in improving their stock. In addition to other improved stock, they are paying special attention to the raising of hogs, and their enterprise in this direction will, no doubt, be the means of adding greatly to the resources of the county. The time has already come when our farmers, if they would be successful and prosperous, must not restrict their energies to the raising and selling of grain. Cattle, suitable for the dairy, must be raised; and hogs must be bred and fattened for bacon. Thus will the farmer's industry be varied, and the products of his farm put in a shape that will bear transportation to markets outside the country.

EFFECT OF MAGNETISM ON IRON. — During the recent session of the National Academy of Science, at Cambridge, Mass., Prof. Mayer gave some interesting information regarding the effect of magnetism on iron:—He states

has discovered, by means of the Saxton comparator, that rods of iron suffered a permanent elongation by magnetization of one hundred and fifty-millionths of an inch. English refined iron gave the maximum of elongation; scrap iron the minimum. Whether the current was gradually increased in intensity or whether it was sent full charge at once, it produced the same degree of elongation. With one cell the elongation took place in six-tenths of a second; with 25 cells it took place in two-tenths of a second. Prof. Pierce thought if the elongation of iron under magnetization were true, it might make in its effect on the earth an appreciable difference in the length of the day. This could be detected by astronomy. A change in the day of seven-hundredths of a second would be perfectly easy to discover now.

SINGULAR DEFECT IN AUSTRALIAN GOLD. — It is said that some 6,000 or 7,000 lbs. of Australian gold, known as "brittle," having recently been coined by the French Mint for the Bank of France, all the pieces have been found to admit of being easily broken, and they have therefore to be re-melted. This is attributed to the presence of a small percentage of antimony and arsenic, extremely difficult of removal; and these elements are known to produce a similar effect in all metals or alloys which are subjected to the molecular changes induced by the pressure and heat developed under the action of the dies in the coining-press.

Scientific and Mechanical Possibilities.

A correspondent of the *Scientific American*, says: Gas wells found in various localities indicate that immense deposits of coal oil and petroleum exist in the earth, which may be found at great depths; and late experiments show that we may burn it for fuel as well as for illumination; by its use steam boats may cross the ocean, and locomotives fly by its aid. We are just beginning to learn the power of this new servant that man has awakened from the sleep of ages. The country also abounds in limestone, sandstone and bituminous shales, which, by scientific and mechanical aid, may afford an almost never ending supply of this wonderful material.

And notwithstanding the seemingly advanced state of the means of transportation, it is inadequate to the present wants of man. Steamboats and railroads do not even meet the wants of our own country. Can the possibility of aerial navigation be doubted? Every year is bringing us nearer to the practical solution of this great problem.

If a light motive power is required, science may yet discover a cheap method of separating aluminum from our clay, some of which contains as much as 30 lbs. of this most wonderful material to the ton. This metal is three times stronger than steel, and as light as chalk. On the very surface of the earth, we daily walk over a material from which the machinery for a motive-power may be constructed of about one-tenth the weight of iron or steel. In the oxygen of the atmosphere is abundant fuel, which may yet be used to rarify the air for a motive power; other powers also exist in Nature, which will, no doubt, yet become the servants of man. One discovery opens vast and expansive avenues leading to unexplored regions, where magnificent creative Nature holds in store rich treasures which the scientific hand may drag from her dark arcana.

He who engages his mind, his time, or his fortune in the development of scientific means for bringing forth from Nature's rich stores that which will add to the enjoyment, happiness and comfort of man is entitled to the greatest honors that can possibly be bestowed by an appreciative world.

FLUORESCENCE. — President Morton, according to the *Gas Light Journal*, has been interesting the Philadelphians with a display of some novel discoveries which he has recently made in the fluorescence of certain hydro-carbons found associated with anthracene. In the course of his lecture he showed the following: A large screen, of a pale yellow color, was lowered from the upper regions of the stage, and as the lecturer expressed it, was interrogated in the way of experiment as to what property it possessed, by various colors of light. A brilliant yellow, a green and a red light were successively thrown upon it from an electric lamp, but it remained unchanged and made no sign; then a violet light from the same source streaming over it the word "Fluorescence," flashing out upon the cloth in immense letters of luminous green, at once answered the question and illustrated the property. So again a gigantic flower, painted in pale monochrome, gleamed out in varied and vivid tints, under a like treatment. In another place the speaker alluded to the invisible rays present in the solar beam and some other light, which though inappreciable to the human eye, are very active in photography, and then did, what has certainly never before been accomplished—that is, showed the rays, on a fluorescent screen, to the immense audience assembled to hear him. The invisible spectra of copper, silver, zinc, etc., were thus projected and compared.

THE BOTTOM OF THE ATLANTIC. — In a communication to the London Geographical Society, Capt. Osborne states that the bottom of the North Atlantic is occupied by two valleys, the Eastern extending from 10° to 30° west longitude, and traceable as far as the equator, with an extreme depth of less than 13,000 feet. The western valley he says, reaches from the thirtieth to the fiftieth degree of west longitude, and the two are separated by a ridge in 30° west longitude, along which the average depth is only 1,600 fathoms, and which can be traced northward to Ireland and southward to the Azores, so that it is volcanic in character at both extremes. Its extreme breadth is found to be somewhat less than 500 miles, and the depth of water is found to increase on both sides of it in accordance to the distance from the axis. From Capt. Osborne's researches in regard to deep sea beds generally, he is inclined to believe that there are no rough ridges, abrupt chasms, nor bare rock, and that the sea bottom at great depths is not affected by currents or streams, even by those of the magnitude of the gulf stream, and that it rather resembles the American prairies in general appearance, and is everywhere covered by a kind of mud.

NEW USE FOR OZONE. — A German chemist has ascertained that ozone has the power of decolorizing blood; leaving it a white and perfectly coagulated albumen, in which condition it may be used in calico printing and for some purposes for which the coloring matter in that class of albumen has heretofore rendered it useless. Ozone has also been found to act very powerfully as a disinfectant.

Scientific and Technical Thought.

Prof. W. K. Clifford, in an address before the British Association, at its late meeting at Brighton, illustrated as follows the difference between technical and scientific thought:—Ancient astronomers observed that the relative motions of the sun and moon recurred all over again in the same order about every nineteen years. They were thus enabled to predict the time at which eclipses would take place. A calculator at one of our observatories can do a great deal more than this. Like them, he makes use of past experience to predict the future; but he knows of a great number of other cycles besides that one of the nineteen years, and takes account of all of them; and he can tell about the solar eclipse of six years hence—exactly where it will be visible, and how much of the sun's surface will be covered at each place, and, to a second, at what time of day it will begin and finish there. This prediction involves technical skill of the highest order; but it does not involve scientific thought, as any astronomer will tell you.

By such calculations the planet Uranus at different times of the year have been predicted and set down. The predictions were not fulfilled. Then arose Adams, and from these errors in the prediction he calculated the place of an entirely new planet, that had never yet been suspected; and you all know how the new planet was actually found in that place. Now this prediction does involve scientific thought, as any one who has studied it will tell you.

Here, then, are two cases of thought about the same subject, both predicting events by the application of previous experience, yet we say one is *technical* and the other *scientific*.

THE NEBULAR HYPOTHESIS. — As regards the stellar and planetary universe, its origin from an all-diffused, nebulous mist, was taught by Kant a century ago. This view was subsequently elaborated by Laplace the mathematician, and Herschel the astronomer, into the Nebular Hypothesis, which was the outcome of the whole body of known astronomical facts. This hypothesis affirmed the progressive condensation and differentiation of the nebulous mass through successive stages to more and more concrete and specialized groups, systems, and orbs. That the solar system was gradually formed in the way the nebular hypothesis implies, and that its facts can be explained by that hypothesis and no other, is now the general belief of astronomers. Consisting of more than one hundred and fifty bodies, revolving and circulating according to one grand method, it has been pointed out by Prof. Leconte that there are no less than three hundred and seventy facts concerning the distribution, form, and motions, of the sun and planets, which are the simple consequences of the nebular hypothesis, and can be accounted for in no other way. The nebular hypothesis is the doctrine of to-day, in its application to the most perfect of the sciences, and it has replaced an *a priori* cosmogony that swayed the human mind for thousands of years before the solar system was discovered. — *Science Monthly*.

MORE EXPERIMENTS IN STREET-CAR PROPULSION. — Mr. H. Frank, of Pittsburg, is making an experiment in the propulsion of street-cars by an invention which consists in the use of two cylinders, of different capacities, as 1 to 8, the smaller cylinder to be filled with gas at a pressure of 300 lbs., the other with air at the same pressure, the pressure first to be utilized as power and then supplied in the right proportions for combustion under a vertical tubular boiler, where it is ignited by a small burning jet of gas. It is so arranged that no fuel is used except when the car is in motion, when of course neither steam nor smoke will be generated. The inventor claims that the fuel or gas, for a 9 horse-power engine, can be supplied at a cost of only 8 cts. per hour.

AN INTERESTING EXPERIMENT WITH ELECTRICITY. — Mr. T. C. Webb of Philadelphia has made experiments with a plate electrical machine in an insulated room, that seem to show the fallacy of the ordinary theory of the discharge of a charged conductor. A room 8 feet by 9 and about 8 feet high was constructed, and suspended upon gutta percha and its perfect insulation shown by a Thomson galvanometer. The plate machine acted in all respects the same as in an uninsulated room, sparks were given off, and the conductor completely discharged when touched to the sides of the building. The experiments given in the *Philadelphia Magazine* seem to show conclusively that the common theory of the electrical machine is erroneous.

POLARIZED LIGHT. — The difference between ordinary light and polarized light is due to the fact that while the particles in ordinary light vibrate in every direction, the particles in polarized light, whether it is produced by reflection or by the action of crystalline bodies, vibrate in only a single direction.

ODOR OF NAPHTHALINE. — The odor of naphthalene of commerce is due to leukoline and lepidine, both of which may be removed by dilute acids, when the remaining naphthalene will be almost inodorous.

ELECTRICITY is developed in metallic wires by merely bending them, and the development appears to be independent of any thermic action.

FARMERS IN COUNCIL.

Farmers' Club of Sacramento.

The Club met at the usual hour, Dec. 21st, Vice-Prest. Manlove in the chair. The minutes of the last meeting were read and approved.

On motion of Johnston, the regular order of business was dispensed with, in order to enter at once upon the business of the annual meeting.

The Secretary then read the following Report of the Board of Directors.

To the members of the Farmers' Club, Sacramento—Gentlemen: In compliance with the requirements of our constitution, we submit our first annual report. One year ago the 9th of the present month, fifteen farmers of this county met in the rooms of the State Agricultural Society to consider the propriety of organizing a farmers' club, and the result of that meeting is the present organization, numbering seventy-five members.

With only a few exceptions, our club has held weekly meetings during the past year, and has discussed many questions of interest to its members and to the general agricultural interests of the State. We are fully satisfied that the benefits derived from such meetings and discussions have more than compensated members for the time they have spent in their attendance and the slight expense they have incurred. The reports of these discussions have been published in the *Daily Union* and *Record* and the *Pacific Rural Press*, and have attracted a very general interest among all classes of society, both in our State and other States of the Union.

As a result of these discussions a more lively interest has been awakened in horticultural and agricultural subjects, not only in our vicinity but throughout the State, and many valuable experiments have been made, from which much practical information has been obtained and published. Through the instrumentality of the club quite a large number of Eastern and European forest trees have been imported and planted in this State, and through the efforts of the club, in connection with the Bay District Horticultural Society at San Francisco, a bill for the encouragement of forest tree culture was passed by the last Legislature, which if it had received the sanction of the Governor, would have been of great value to the State. The bill was just what the club desired, but it was the best that could be agreed upon at the time, and it is to be regretted that it is not now a law of the State. The Board would recommend that the club take steps for the preparation of an unobjectionable bill to be presented to the next Legislature for that purpose, believing that such a bill will receive the Legislative and Executive sanction, and will be universally approved by the people of the State.

The subject of steam cultivation has been pretty thoroughly discussed by the club, and its advantages over the ordinary manner of cultivation set forth in so plain and incontrovertible a manner as to attract the attention of the press and the farmers and capitalists of the State generally, and the prospect now is that steps will soon be taken for the introduction of steam-plowing and cultivating-tackle—about which there can be no question of success—direct from the shops of the celebrated builders, Fowler & Co., England.

The Board are well satisfied that the double-stationary engine system has so many advantages over the traction system that they would recommend the club to use its influence in the future as in the past for the encouragement of the former and the discouragement of the latter. There are very few countries in the world where so many advantages for steam cultivation are presented as in California, and they believe that the day is not far distant when it will be generally adopted as the most efficient means of cheapening and increasing the production of our agricultural products.

The Farmers' Club of Sacramento, we believe, was the second organization of the kind in the State, while at the present time there are some twenty already organized and a number of others being organized, and a State Farmers' Union has been formed consisting of delegates from the several clubs, the objects of which, as set forth in its constitution, are the protection and promotion of the agricultural interests of the State. The influence of these clubs and of the State organizations, if properly exerted, as we trust will be, cannot be otherwise than very beneficial, not only to the interests immediately affected, but to all the other industrial interests of the State. Hence we feel that we have reason to congratulate the members of the Sacramento club upon the good they have, in the short space of one year, already accomplished, and to express the hope that they will continue in well-doing.

We wish to call the attention of each member of the club to a practice which, if inaugurated and closely adhered to, will lead to astonishing results in the way of agricultural improvement and financial success. We refer to the keeping by each farmer of careful field or crop accounts. Let each member procure for the first of the coming year a book to be called the "Journal of the farm." In this book let him enter, at the close of each day, a complete journal of the day's transactions—charging each field or crop with the amount of labor, seed or other expense bestowed upon it, and crediting it with

the amount and value of the crop that has been gathered from it.

One year's practice in this book-keeping will prove of incalculable benefit to each one who shall begin and faithfully carry it out. And who can tell the aggregate good that will thus result from the general adoption of the practice? The general good-will entertained by each member towards the others, and the careful regard manifested by all for the feelings of their fellow members, on all occasions, is worthy of remark. During the most heated and earnest discussions, when members have honestly entertained directly opposite views, we cannot call to mind a single unpleasant word or unkind insinuation. This universal good will and careful regard has contributed much to the pleasure, interest and usefulness of our meetings, and if continued in the future, cannot fail to contribute in no small degree to the good results to be expected from our organization.

The Board cannot, in justice to their own feelings, close this report without referring to the fact that the first presiding officer of the club, S. N. Baker, a man universally loved and respected by all who knew him, has been called suddenly to abandon his labors upon earth, and to vacate his seat among us to fill a place in a higher sphere—to occupy a position in the promised land, upon which all our permanent hopes are centered, and to which we are all journeying.

The initiation fee to the club was originally fixed at \$1 for each member, and the monthly dues at fifty cents per month. By resolution of the club the dues have been reduced one-half, or to twenty-five cents per month, payable quarterly in advance. This sum is found ample to meet current expenses.

Below we give a statement of the receipts and expenditures of the club for the past year, together with the amount due the club from its members as monthly dues: Total receipts, \$103.50; expenditures, \$82.58; cash on hand, \$4.92; cash due the club from members for dues, \$150. Respectfully submitted,

W. S. MANLOVE, Acting President.

I. N. HOAG, Secretary.

On motion, the report was adopted as read and ordered on the minutes. The club then proceeded to the

Annual Election of Officers.

W. S. Manlove and James Holland were each nominated for President. W. S. Manlove having received the largest number of votes was, on motion of Holland, declared the unanimous choice of the club for the ensuing year.

The President's Speech.

Dr. Manlove in resuming the chair, which he had vacated during the balloting, said: Fellow-members—In returning thanks for the honor conferred upon me, by elevating me to the highest office in your gift, allow me to express the hope that the same interest which has been maintained by the members the past year may be kept up during the year to come. We have accomplished a good deal during the past year, and we may well hope to do even better and accomplish more good for ourselves and the agricultural interests of the State generally during the next twelve months than we have during the past twelve. Let us try and keep up the dignity of the club to the highest standard, and thus give character and influence to all our proceedings.

The farmers of the State have but one way to protect their own interests and render their occupation honorable and remunerative, and this is by united concert of action. They must act upon the old and true maxim that "the Lord helps those that help themselves." If we do not look after our own interests no other class will do it for us. It is one of the best signs for California that the farmers are waking up to their own position, and learning their own power and how to use it.

Let our farmers continue to form clubs for self-improvement and self-protection. Let them encourage and instruct the officers of the Farmers' Union, and the day of their deliverance from rings, commissions and freight extortions is not far distant. I again thank you for the honor you have conferred upon me, to maintain order and decorum during the sittings of the club, and to administer the duties of my office with strict impartiality.

The next business in order was the election of two Vice-Presidents.

On motion the rules were suspended and Jas. Holland and E. F. Aiken were respectively elected First and Second Vice-Presidents by acclamation. A. S. Greenlaw and I. N. Hoag were in the same manner re-elected respectively to the offices of Treasurer and Secretary.

On motion \$20 of the funds on hand were paid to the Secretary on account of salary; and on motion of Johnson, all members were requested to square up their dues before the commencement of the new year, and particularly to come prepared to do so at the next meeting.

On motion of Lockett the Secretary was requested to report to the next meeting the expense of having the Constitution and By-Laws printed in pamphlet form.

Aiken—Moved that at the next meeting the Club take up the Constitution and By-Laws and make such amendments as they may deem proper.

The motion prevailed.

New Members.

On the recommendation of Greenlaw, H. M. Karue and John Denton were elected members of the Club.

The Carrying Trade

Was selected for discussion at the next meeting, and Judge J. H. McKune was appointed to lead in the discussion.

The Club adjourned to meet Saturday at 1 o'clock P. M., sharp.

Stanislaus Farmers' Club, at La Grange.

Pursuant to adjournment, the Club met at the house of Jno. Roberts, Dec. 8th, 1872, at 2 o'clock P. M. Upon call Mr. Gallup stated to the farmers in attendance—bless us, a goodly number—the efforts he had made during the last six months to find a community of farmers that would bear clubbing even for their own good, and he was happy to find so many of them together, and he would proceed to rap them over the knuckles from the columns of the *RURAL* as to the objects of the gathering.

He read from the report of the Sonoma county Club the excellent address of Wm. McCollough, Esq., who had just returned from the West and spoke of the great city of Indianapolis, reared and sustained in wealth and luxury from the farmers of the great West, the farmers have formed clubs called Granges, and by their co-operative efforts have over 200,000 members, and by their united force they freight their grain \$4 per car less than merchandise, and ship their grain to foreign ports by their own agents. They have banks of their own at low rates of interest. They trade at the country stores, as a club, at only ten per cent. profit. Others have company stores of their own; they have their own store-houses. Insurance was offered to them at one-half per cent. They buy their own sacks without any "riug" in them.

These Granges were incorporated; and in their corporate capacity did business as any corporation, having the firm confidence of all business men.

After this address the following names were added to the Club roll: William Fitzhugh, R. B. Warder, Wm. King, W. J. Warder, Henry Maptson, P. Haskins, J. W. Roberts, Wm. McKenney, H. A. Davis, A. G. Hestor, S. C. Smith, R. Turpin, B. Ramsey, H. Anderson, B. F. Newman, Capt. Wm. Smith, W. W. Walker, S. M. Gallup, and Joseph Dominici.

The Club then went into an election of officers. R. R. Warder was chosen President; J. W. Roberts Vice-President; S. M. Gallup, Secretary. James Dominici was then chosen reporter for the Club on meteorology and also for the Commissioners of Agriculture. Mr. W. J. Warder was proposed as crop reporter for the same, but the election was deferred till the next semi-monthly meeting. H. B. Davis, Wm. Warder and S. M. Gallup were appointed a committee to draw up a circular address for distribution among the farmers, setting forth the object of the Club. After consideration it was deemed best to confine the working and interest of this Club to Branch township, but members will be received on its roll from any part of the county. Mr. William J. Warder then gave to the Club an item illustrating what could be done by the Club or Granger system. He related a conversation had with Mr. Ten Basch, of California street, San Francisco. His offer was to ship for the farmers at the lowest going rates, independent of all rings—offers to advance \$20 per ton without interest while afloat—if retained after arrival to await a rise, four per cent. per annum only; no drayage or storage, cargo insured, and no commission except for selling in Liverpool. He understood that the Oakland Club, by combining, got their sacks this year at 11 cents, while the price was 18 to 20 cents apiece, and that parties had offered, on grain in store, 70 per cent. to the Club, at 6 and 7 per cent. per annum. Thus showing that the power of the Clubs but just opening into life were being felt, and that capital was reaching out its gold bags to them at reduced rates. He urged his brothers of the land of the living to stand by the Club, and with the Club we could beat back the wolves that fatten upon the farmers' toil, that we could have a company storehouse at Oakland, and when the word came from Mr. Ten Basch, we could load, even from Branch township, a ship in a week, and if the railroad would not deliver our grain in time and at reasonable rates, we could muster a team train to do it ourselves and ship an independent line from Stockton.

The Club then listened to a very interesting report on the weather for the month of November, from 1867 to 1872, by Dominici, after which it adjourned to meet again Dec. 22d, at 2 o'clock P. M., at the house of J. W. Roberts. Subject for next meeting—"Tax on growing Crops."

S. M. GALLUP, Secretary.

—Stanislaus Co. News.

Santa Rosa Farmers' Club.

At a meeting of the Farmers' Club, at Santa Rosa, on the 17th inst., the Committee on Hall was instructed to rent Mr. Morrow's hall, at \$20 per month and furnish it with suitable furniture. A committee, consisting of Messrs. Coulter, Maslin, Adams and Thompson was appointed to co-operate with a like committee from the Library Association to incorporate under the title of the "Citizens and Farmers' Union Library Association of Santa Rosa." The majority and minority reports of the Committee of the State Farmer's Union were ordered to be read at the next meeting. After a lengthy debate it was determined to elect Trustees at the next meeting for the purpose of

incorporating under the special act. The Club resolution suggested that the Farmers' State Union should incorporate, and that the State Club recommend that the several County Clubs should likewise incorporate, and take stock in the State Incorporation. Mr. Rector read a letter from merchants in Liverpool, in reference to the shipment of grain the coming year. The Secretary was instructed to correspond with the writers, in reference to the subject of the latter.

Oakland Farming, Horticultural and Industrial Club.

[Report of Meeting of Dec. 13th, Continued.]

Shade Trees.

The Committee on Fruit and Shade Trees reported progress. In this connection, the Secretary read the following communication or suggestions sent in by Professor Carr:

In connection with the subject of street improvements, the question is often asked what shall we do with our plazas? Usually such places are mere costly toys, useless for purposes of public recreation, and located just where they are most in the way of business.

Our streets, when properly planted, will do away with the necessity of having some green spot to relieve their monotony; our Telegraph and other avenues leading out of the most compact portions of the town ought to rival the Boulevards of Paris in their variety and beauty, in less than fifty years. In Europe it is not uncommon to find individuals and governments seeding for such long delayed harvests, and our plans for public improvements should be as large and generous as our expectations for the future.

I should be glad to hear the question discussed in the Club, whether it would not be better to sell such of our plazas as are likely to be ultimately sacrificed to the business wants of the city, and to apply the proceeds to the purchase of a single large and commodious park in the suburbs.

It has occurred to me that the tract of land recently given to the University by Mr. Tompkins to found the Agassiz Professorship, would make an admirable nucleus for such a park, and assist in the attainment of several desirable ends, viz:

1. A valuable park for the city of Oakland.
2. In a manner identifying the city with the carrying out of the noble and far-reaching plan of usefulness designed by that gift, and making it more speedily available.
3. In the Tompkins park, rearing a worthy monument to the memory of the distinguished citizen, whose loss we so deeply mourn.

—EZRA S. CARR.

Mr. Pryal did not know of a more beautiful place for a park than the land referred to by Prof. Carr.

Mr. Dewey thought the suggestion a noble one and he did not see why not a practical one.

Mr. Webster asked how it compared with the site selected several years ago, back of Lake Merritt.

Mr. Pryal said there was no comparison. On the Tompkins land a sheet of water could be introduced and a beautiful lake formed. There is living water—springs—on the land, even in the driest years. Broadway runs through it.

Fish Culture.

United States Deputy Fish Commissioner Stone was here introduced and gave a very interesting address on fish culture, which in this issue appears.

A resolution was adopted tendering a vote of thanks to Mr. Stone and acknowledging the pleasure of the Club at noting his official work on this coast.

The name of Mr. I. C. Moore was received for membership. Next meeting Friday evening, Dec. 27th, 1872.—*Oakland Daily News*.

Napa Farmers' Club.

The Club met Saturday, Dec. 21st at the usual hour. The question for the day, "What provision of green feed can we make for our stock during the winter season?" was discussed at considerable length by Messrs. Smith, Cornwall, Fisher, Gridley, Trubody, McIntire and Morris.

The merits of Alfalfa, Mezquit, Kentucky, Blue, Hungarian and other grasses were fully discussed. Preference was generally conceded to Alfalfa. The Mezquit grass has been grown by Mr. Hudspeith, of Green Valley, Sonoma county, and by Mr. Olds, of Marin county. But little is, as yet, known of this grass among our farmers. Mr. Hudspeith's experiments with it have resulted quite favorable. He thinks it well adapted to this climate, and that it will be a great help to farmers. It makes excellent feed for all kinds of stock.

Alfalfa had been grown by various parties throughout the county, and in almost every instance had proved eminently successful. Mr. G. N. Cornwell had a field of 20 acres seeded in 1854, and he regards it as the most valuable land he possesses. Alfalfa makes good hay, and stock will relish it finely after a short time. Loose soil is thought to be the best for it. It grows well most anywhere where the land is properly cultivated. The gophers were very troublesome in many parts of the county; so much so as nearly to prevent the cultivation of Alfalfa.

Some thought that corn and sorghum could be grown in many places where grasses could not, and be made quite valuable as feed.

Mr. Morris made some statements in regard to the condition and prospects of the Napa and Solano Agricultural Society. Elsewhere we publish an article giving the same items.

A committee, consisting of Messrs. Gridley, Robinson and McIntire, were appointed to investigate a Wash Boiler, patented by Mr. Bush.

The Club will meet again on the second Saturday in January, and will then discuss the feasibility of a narrow gauge railroad through Napa county into Lake.

Monterey County Farmers' Club.

The first regular meeting of the Club took place last Saturday at Baldwin's Hall. The President took the chair at two o'clock.

After the reading of the minutes of the last meeting, a recess was taken for the application of admission to membership, and on the resumption of the chair, the following gentlemen were proposed and admitted by unanimous vote:

Dr. Lee, J. Wandle, J. B. Swan, C. E. Mitchell, Wm. Courtney, C. D. Fowler, Mr. Swope, E. Harrison, J. Wright and A. Sally.

Resolutions were then passed for the appointment of departmental committees, as follows:

On disposal of present crops: Pomeroy, Kelly and Rose.

On co-operative store: Lathrop, senior, Rucklidge and Pomeroy.

On agriculture and implements: Fowler, Swope and Sally.

Notice of motion by Mr. Lathrop, junior, to add to the Constitution of the association the additional words, "in the interests of."

Resolutions of thanks were passed to Mr. Baldwin for the offer of the free use of his hall for the meetings of the Association, and to the *Advance* for the copiousness of their reports of the proceedings.

Shall We Lose Our Tea Trade.

A serious danger now threatens the tea trade of this city. The Isthmus of Suez shortening by more than one-half the length of the passage from India to Western Europe and America, and allowing of the passage of ships of burthen, has been made use of to send cargoes of tea from China to New York by swiftly sailing steamers. The result is that the merchants of New York have been enabled to have cargoes landed at the doors of their warehouses without breakage and in prime condition at a less cost than they could obtain the same teas by way of San Francisco. It is said, also, that in consequence of the cargoes being unbroken during the voyage, that there is far less risk of accident, and that the teas arrived in far superior condition. It is evident that we have been relying supinely on the hope that our natural position placing us in the commercial centre of the shortest route from China to New York, would suffice to secure to us the tea trade of a continent for all time coming. The awaking from this delusion is sufficiently unpleasant; let us hope that it will stir our merchants up to the necessity of adopting some means of securing cheaper transit. If not, they will be left only the local tea trade of the coast, and it is doubtful if they will be able to keep that entirely, for those who handle large quantities of goods can always handle them cheaply, and there is little doubt that the business men of New York would be content to lose a little on the Pacific Coast consignments of tea for a couple of years, to drive the San Francisco dealers from the market. And though by far the greater part of the tea imported by way of this city for the last two or three years has merely passed through, our merchants were beginning to take their share of it, and in a dozen years would have monopolized it. Such houses as those of Castle Bros.; Adolphe Low & Co.; Macondray, etc., etc., were gradually feeling their way further East every day with the commodities imported from the Pacific Coasts and Islands, and were building up for the city a grand trade in the future.

The *Chronicle* of this city has been proposing the building of a freight railroad, to cost \$100,000,000, and to pass south of the line of the Colorado. This is just what we want for the future, but how about the present. During the five years in which such a railroad would be building, we would, with things as they are now, have totally lost the trade, nay, Eastern merchants would have encroached on our own peculiar domain, and it would require ten years to recover the ground we had lost during the preceding five. We want to take action at once. And that action must be such as shall persuade the Central Pacific Railway Company, the China Mail Steamship Line, and the Union Pacific R. R. Co., that it is to their interest equally with ours to establish such a scale of freight charges for teas as shall render competition, via Suez, impossible. The majority of our business men not being in the tea line, may think that it is none of their business, but they should consider that the losing of the tea trade of the future will necessitate the loss of many other branches of trade which we are now endeavoring to grasp, but which will elude us as surely as the tea trade. We want immediate action on this matter.

Shall We Protect the Birds?

Professor Treadwell, of Cambridge, Mass., in a communication to the Boston Society of Natural History, gives a detailed account of the capture, feeding and growth of two American Robins. It contains much that is highly suggestive to those proposing to raise fruit, and who regard birds as a cost and nuisance. He says: "When caught, the two birds experimented on were quite young, their tail feathers being less than an inch long, and the weight of each about twenty-five penny-weight, less than half the weight of the full-grown bird; both were plump and vigorous, and had evidently been very recently turned out of their nest. He began feeding them with earthworms, giving three to each bird that night; the second day he gave them ten worms each, which they ate ravenously; thinking this beyond what their parents would naturally supply them with, he limited them to this allowance. In the third day he gave them eight worms each in the forenoon; but in the afternoon he found one becoming feeble, and it soon lost its strength, refused food, and died. In opening it he found the crop, gizzard, and intestines entirely empty, and concluded, therefore, that it had died from want of sufficient food, the effect of hunger being perhaps increased by cold, as the thermometer was about 60°. The other bird, still vigorous, he put in a warmer place, and increased its food, giving it the third day fifteen worms; on the fourth, twenty-four; on the fifth, twenty-five; on the sixth, thirty; and increasing each day, and still they seemed insufficient, and the bird appeared to be losing plumpness and weight. He began, then, to weigh both the bird and its food, and the results were given in a tabular form. On the fifteenth day he tried a small quantity of raw meat, and finding it readily eaten, increased it gradually to the exclusion of worms; with it the bird ate a larger quantity of gravel and earth, and drank freely after eating. By experiment, it appears that though the food was increased to forty worms, weighing twenty dwt., on the eleventh day the weight rather fell off; and it was not until the fourteenth day, when he ate sixty-eight worms, or thirty-four dwt., that he began to increase. On this day, the bird's weight was twenty-four dwt., he therefore ate forty-one per cent. more than his own weight in twelve hours, weighing, after it, twenty-nine dwt., or fifteen per cent. less than the food he had eaten at that time.

To meet the objection that the earthworm contains but a small amount of solid nutritious matter, on the twenty-seventh day he was fed exclusively on clear beef, in quantity twenty-three dwt.; at night the bird weighed fifty-two dwt., but little more than twice the amount of flesh consumed during the day, not taking into account the water and earth swallowed. The bird being in confinement, with certainly much less exercise than in the wild state, to eat one-third of its weight of clear flesh daily, and presuming that the food it consumed when young, was not much more than must always be provided by the parent of wild birds, as the food, he said, was never passed undigested; the excretions were made up of gravel and dirt, and a small quantity of white, semi-solid urine, we may well imagine the number of insects destroyed by birds.

At a meeting of the French Academy of Science, of Paris, some few years since, it was reported that Mr. Prevost, one of the gentlemen attached to the Jardin des Plantes in that city, had, after several years' labor, ascertained with certainty the different kinds of food on which European species of birds live at different periods of the year. The report establishes one "great fact," which is specially interesting to farmers, and that is, the birds do far more good to crops than harm, inasmuch as the number of insects they destroy greatly exceeds the quantity of grain they eat. The same thing has been proclaimed before, but a scientific demonstration of its truth is not the less acceptable.

Every farmer, and lover of trees, might derive from these facts a lesson, showing plainly and beyond controversy, the immense power of birds to destroy insects, by which our trees, both fruit and ornamental, are every few years stripped of their foliage, and often many of them are killed. The Robin while with us, subsists principally upon earth worms, various insects, their larvae and eggs, and a few cherries; of worms and cherries they can procure but few, and these during a short period; they are therefore obliged to subsist principally upon those fell destroyers of our fruit and leaves of the trees, canker worms, caterpillars, bugs, etc. Then if each Robin or other bird, as we may be allowed to class them as the same, requires for its support, an amount of these equal to the weight consumed by the Robin experimented on, it is easy to see what prodigious havoc a few hundred of these must make upon the insects of our orchards. This, it would seem, ought to prove a very strong argument in favor of the feathered tribe. Is it not then, to our advantage to purchase the services of the birds at the price of a few cherries. There has been an effort made to preserve our birds, and with a little extra exertion on the farmer's part, such an increase of birds might be obtained as would save us from all the labor required for the appliances of tar, oil, zinc, and all methods by which we seek with very little success, to destroy those troublesome insects. Spare the birds and preserve your orchards. Farmers see to it, that the birds are not killed, if you want plenty of fruit.—*Journal of the Farm.*

The Champion Numismatist.

It may not be generally known that Dr. Charles Spier of this place is the oldest living and most successful numismatist in the world. He has been engaged in the collection of coins for over fifty-seven years and has now over 14,000 pieces, representing every species of coin ever produced in any year or under the dominion of any sovereign or Government from the days of Semiramis and the Pharaohs down to the present time. His collection is worth hundreds of thousands of dollars. He has over 10,000 of his pieces in the vaults of the Bank of California, and 4,000 or over here. At the Bank of California his collection is pronounced the best and most valuable in existence, not excepting those of Queen Victoria and the Sultan of Turkey, which are particularly extensive and valuable. A few days ago we examined the 4,000 of his pieces which he keeps here. They proved a most interesting study. Coins of the ancient Jewish Kingdom, of the various kings, consuls and emperors of Rome, Tyre, Sidon, Carthage, Nineveh, Babylon, China, Palmyra, Egypt, Japan, etc., with specimens of every year's coinage in all Christian lands from the time of Constantine till now, were exhibited in prodigious profusion. The Doctor has many coins which would sell for many thousands of dollars each. His collection has been the work of a very extended lifetime. He has traveled nearly all over the world and is constantly receiving new additions to his pieces from Europe and the East. He has gold and silver coins from the size of a very large teacup down to that of a pea. We wish we had the space to particularly describe them. The Doctor, who is in easy circumstances and greatly advanced in years, though still robust for one of his age, remains in Visalia on account of the excellencies of the climate. His collection is very interesting to any one appreciating the mementoes of antiquity.—*Visalia Delta.*

Necessity of Ventilation.

I hold that the breathing of impure air is a fruitful source of disease of the heart occurring after middle age. How many people ignorantly favor its occurrence by confining themselves to closely shut, non-ventilated, hot, stifling rooms, in which the carbonic acid has accumulated to two or three per cent. of the air they respire! How many are thus destroyed by being compelled, through the exigencies of life, to pass the greater part of their time in pits and manufactories where ventilation is defective, or in which the air respired is poisoned by noxious fumes and offensive emanations from the materials undergoing the process of manufacture! How many are falling victims to the poisonous influence upon the heart of the atmosphere of an underground railway! What do these facts suggest? How are these evil results to be prevented? The simple answer is: Let the rooms in which you live be effectually ventilated by an incoming current of air filtered from all adventitious impurities, and so divided that no draught shall be felt; and by an outgoing current which shall remove from the apartments the carbonic acid, carbonic oxide, sulphurous acid gas, sulphuretted hydrogen, and other noxious compounds, as rapidly as they are generated. Apply the same principle to public buildings, theaters, schools, manufactories, pits, and to all places in which people are accustomed to congregate.—*"Foul Air and Heart Disease," in Popular Science Monthly.*

The New Pacific Mail Steamer.

On Saturday afternoon the new iron screw steamer Colon was launched from the yard of the Delaware River Iron Ship-building and Engine Works. Her dimensions are as follows: Length, 300 feet; beam, 40 feet; depth of hold, 30 feet 6 inches. The vessel is a four-decker, of 2,324 tons measurement, and has a carrying capacity of nearly 5,000 tons. Her machinery has been built by Randolph & Elder of Glasgow, Scotland, and her engine is of the compound type, with cylinders 51 and 88 inches in diameter with 42 inches stroke of piston. She has four boilers, nine feet nine inches in length and 13 feet in diameter, connected to one smoke-stack; each boiler is made of 13-16 inch boiler-iron, double riveted, and capable of carrying a working pressure of 70 pounds of steam. She has a super heater and surface-condenser. The line shafting is 13½ inches in diameter, the propeller-wheel being 16 feet 3 inches in diameter, with a varying pitch from 22 to 26 feet. The engine occupies a space of 13 by 19 feet, and the boilers 33 feet 8 inches by 28 feet, all inclosed in iron bulkheads, extending from the floors up to the top of the hurricane deck.

BEST TIME FOR PAINTING HOUSES.—The best time for painting the exterior of buildings is late in autumn or during the winter. Paint then applied will endure twice as long as when applied in early summer or in hot weather. In the former it dries slowly and becomes hard, like a glazed surface, not easily affected afterward by the weather or worn off by beating of storms. But in very hot weather the oil in the paint soaks into the wood at once, as into a sponge, leaving the lead nearly dry and ready to crumble off. This last difficulty, however, might in a measure be guarded against, though at an increased expense, by first going over the surface with raw oil. By painting in cold weather, one annoyance might certainly be escaped, namely: the collection of small flies on the fresh paint.—*The Technologist.*

Interoceanic Canal.

From the report of the Secretary of the Navy are taken the following facts relative to the survey of a ship canal across the Isthmus between North and South America:

Commander Selfridge, who conducted the previous surveys of the Isthmus of Darien, is now engaged in completing the final exploration of that Isthmus between Panama and the shoulder of South America. Recent information favors the exploration of the valley of the river Bojaya, lying some ten miles south of and, in general, parallel to that of the river Napipi, already examined. This completed, the entire Isthmus lying south and east of the line of the Panama Railroad will have been sufficiently examined to establish the relative difficulties of constructing a ship canal, as well as the line lying further south, between the river Atrato and the Pacific Ocean.

The expedition to Nicaragua, destined for a similar purpose, is engaged upon the work assigned to it. An unlimited water supply, at a summit of 106 feet above the mean height of the ocean presents too favorable a feature to forego, a close examination of the whole region. Difficulties, stated in the report of the chief of the Bureau of Navigation, delayed the progress of this survey; nevertheless, a location from Lake Nicaragua to Brito, on the Pacific coast, is found to be more favorable than any hitherto known.

These two expeditions will probably close the surveys and explorations of all the possible routes of that part of the American Isthmus.

How SOIL WAS MADE.—Prof. Agassiz says that all the materials on which agricultural progress depends are decomposed rocks, not so much those that underlie the soil, but those on the surface, and brought from a considerable distance, and ground to powder by the rasping of the glaciers. Ice all over the continent is the agent that has ground out more soil than all other agencies put together. The penetration of water into the rocks, frosts, running water and baking suns have done something, but the glaciers move. In a former age the whole United States was covered with ice several thousand feet thick; and this ice moving from North to South by the attraction of the tropical warmth or pressing weight of the snow and ice behind, ground the rocks over which it passed into the paste which we call soil. These masses of ice can be tracked as game is tracked by the hunter. He has made a study of them in this country as far South as Alabama, but has observed the same phenomenon in Europe, particularly in Italy, where, among the Alps, glaciers are now in progress. The stones and rocks ground and polished by the glaciers can easily be distinguished from those scratched by running water. The angular boulders found in meadows and the terraces of rivers not reached by water can be accounted for only in this way.

TO FARMERS.—Farmers as business men should employ the beginning of the year in making settlements of a business kind. Pay every debt that is on your books, collect every one that is due, or settle it in some way as soon after the first of January as possible. It is a great deal better to come to an understanding about these things, than for both debtor and creditor to grow cool and half unfriendly because one owes the other a few dollars and can not pay. There is no friendship lost by coming to a direct understanding about debts, and it will oftener than not happen that things may be turned in some way to lessen the account, or some way to cancel it. A man who has a practical, common-sense turn of mind, and has had a little mercantile training, having been a few years in a country store or in business in the city, or in some manufacturing establishment will almost invariably prove a more successful farmer than one who has been trained solely upon the farm. We ought to regard farming more as a business than as a trade, more as work for the head than for the hands and teams only.—*Cloverdale Bee.*

SUGAR SUPPLIES OF THE WORLD.—The constantly increasing demand for sugars, a demand which more than keeps pace with the growth of population, is constantly calling for new sources of supply. In this regard the cultivation of Beet Root in California becomes most important. In many countries of Europe the home market is entirely supplied from this source. Austria which thirty-five years ago imported all her sugars now not only supplies herself but exports largely, and some towns in North Germany and France are entirely supported by the beet root sugar manufacture. But we are not entirely dependent on beets, for the Chinese sugar grass will grow all over the State, and there is no doubt that with irrigation the sugar cane will thrive in Los Angeles and San Bernardino. We hope before many years to see California noted as one of the sugar producing countries of the world.

THE VISALIA AND STOCKTON narrow-gauge railroad is gaining ground and subscriptions are said to be satisfactorily increasing. An unusual interest is being manifested in this class of roads all over this Coast which they will materially benefit.

Lecture on Fish Culture by Livingstone Stone, A. M.

Pisciculture—The U. S. Deputy Fish Commissioner before the Oakland Farmers' Club, Dec. 13.

On being introduced, Mr. Stone began by referring to some of the prominent landmarks in the history of fish culture. The Chinese, as we know, have carried on trade in fish ova for centuries, and we read of a Chinese law enacted 2,200 years before the Christian era for the protection of that industry. The next account we have of fish-culture is that of the Egyptian King Moeris, who built two pyramids on Lake Moeris, and stocked the lake with fish. The fish increased so fast, we are told, that the returns were ten thousand dollars per day, and this the king allowed the queen as pin-money, which tradition, said Mr. Stone, we may put down as a pretty big fish story. Then we come down to the commencement of the Christian era, when we learn that the Romans engaged in the art, and raised so many that one single fish-pond netted its owners over one hundred thousand dollars in a season. In the fourteenth century a monk, named Pinchon, took the spawn of fish and hatched them in a trough. Four hundred years later, in 1763, Major Jacobi, an officer in the Prussian army, discovered an artificial process to vivify eggs. In 1812, a Frenchman, named Joseph Renny rediscovered the art, but kept it a secret for some time. It, however, at last came to the notice of Professor Coste, who visited the place in the mountains where Renny lived and examined into the process. He brought it before the French Government and an establishment was built for the artificial propagation of fish. The first gentleman to experiment in this country in the raising of Eastern trout was the Hon. Stephen Ainsworth, in 1859. He succeeded remarkably well, and was followed by the famous Seth Green, at Caledonia, on a large scale. In 1867, Green began hatching shad in the Connecticut river, and in 1872, the first appropriation was made for that culture by the United States Government.

Mr. Stone here explained the practical results which follow the cultivation of fish. When he first commenced, a skeptical friend, a farmer, asked him if he thought he could improve on the method of the Creator. His reply was, Yankee-like, by asking a question: Suppose you and your predecessors act on the same principle. We should all starve. Behind the natural product, there lies a large stock in reserve which can be brought out by cultivation. If you do not sow and cultivate your crops, you will not raise enough to eat. It is the same with fish. It is estimated that only a few of the millions of eggs of the codfish come to maturity. Take a pair of trout, weighing one pound each. The female lays her eggs in a natural brook. There should be a thousand. Four hundred will fail of being vivified, and die. Of the 600 left, 500 will be killed during the winter by the sediment and fungus in the water. Of the remaining 100, 50 will be devoured by its numerous natural enemies, and the chances are that 49 out of the 50 will not live to maturity. This is supposed to be the ratio of their life. Now, if we take those thousand eggs and are careful of them, we shall vivify 950.

The lecturer here divided the remainder of his remarks under two heads—private fish culture and public fish culture. Private fish culture in the United States has been confined almost entirely to Eastern brook trout, the most beautiful of fish, combining all the favorite qualities of other fish, with none of their failings. While it may be said to be a hardy fish, it dies easily in warm water. They can be almost starved and carried a great distance, and they are easily domesticated. They are also remunerative, for as a rule, it costs but fifteen or twenty cents to raise a pound, and they command a uniform price of one dollar per pound at the ponds in the East. When the law is first off, they bring \$1.25. They can always be sent to market and get seventy-five cents.

Perhaps some of you would like to know something about the interior of a fish-breeding establishment. Suppose we had 1,000 trout in summer. The spawning season in New England comes on in October. The usual method of procuring the spawn is to strip the fish. In this way the most eggs are retained. A second process is by the Ainsworth spawning screens. The screen is covered with gravel and upon this gravel the fish spawn. At night the operator goes to the lower screen, upon which the eggs have fallen, and takes them out. A third method is by the Collins' roller spawning box, which is a modification of the Ainsworth screen principle. Having got our eggs, we take them to the hatching troughs, and all we have got to do to them besides turning the water on them is to see that they are let alone. This is not easy, however, for in all springs there is a fine sediment, invisible particles of dust, which is fatal to the eggs. There must, then, be some system of filtering above the troughs. Screens of flannel are best. Another danger is the fungus, a low order of vegetable growth, which, when it once gets on the eggs destroys them. At first a great deal of trouble was experienced from this evil. Wooden troughs were used, and fungus grew out from the sides of the box. The remedy for this is to char the box with fire to the depth of one-eighth of an inch. A third danger is from fungus which proceeds from dead eggs, but this is avoided by picking out the dead

eggs once every twenty-four hours. Then there are the natural enemies of the eggs, and they are legion, consisting of almost every kind of water insect, and every kind of animal that is not afraid to wet its bill or feet. To protect the eggs against these, cover the troughs.

The period of incubation of trout and salmon eggs varies with the temperature of the water. As a safe rule we may assert that water of 50° temperature will hatch the eggs in forty days, and for every degree colder the eggs will be five days longer in hatching. For every degree above 50° the time is shortened five days, but for hatching trout the temperature should not be above 55°, and 50° is better than anything higher. When one-third of the period of incubation is passed, the eye-spots of the fish show, and this is the time to pack them for transportation—not sooner. They may be carried long journeys in wet moss. The speaker said he had sent a large number to England, and he had the honor to say that Her Majesty has some which he sent to her. He had also sent several thousand salmon eggs this fall from the McCloud river in this State to be put in the Susquehanna. During the other two-thirds of the hatching period, the eggs continue to grow in firmness. When first hatched, the yolk has hardly been touched, and the young fish appear with it attached to them. They have no fully developed mouths, and are sustained by absorbing the yolk. About six weeks after hatching, the yolk sac becomes absorbed and the young fish are ready to eat. During this period two curious instances take possession of them. The first shows itself in about fifteen days after they are hatched, in an uncontrollable desire to hide under something. They are helpless and seem to fear some danger. If there are any small chinks in the trough, they will crowd into them and die of suffocation. The other trouble referred to seizes them a short time later. It is a desire to pursue a current. If there is a leak anywhere in the box, they will make for the current and all go through.

The best food is common sour milk curd and liver grated fine and mixed together. There is no trouble in getting them to eat. After three weeks, a new trouble shows itself. They lose their appetite, become emaciated and turn around and head down stream, a bad sign in trout. This trouble is cured by placing a thin layer of fresh earth in the bottom of the trough. In fifteen minutes the effect is magical. They improve and soon become better than ever. The loam seems to furnish some needed food, and also serves to keep the water pure by covering the stale feed that has sunk to the bottom.

At the end of the first year, a brook trout is from five to seven inches long; the next year it doubles its size, and the next. At the third year it weighs a pound. Looking at it in a pecuniary aspect, it is remunerative. When you have fed five pounds of meat, you have about one pound of trout, under favorable circumstances.

Public fish culture in the United States deals principally with black bass, shad and salmon. The modus operandi of cultivating black bass is as follows: The State makes an appropriation of money, the Commissioners go to work and get the fish and put them in ponds or lakes and let them grow. That is all there is about cultivating them. Shad are hatched, put in a river, and left alone. The cultivation of salmon is more complicated. Ten years ago there was not one black bass in New England. The Commissioners put them in ponds that were worthless for food-producing purposes, and they are now taking them out by tons. It is a trite remark that an acre of water will produce as much as an acre of land. Now, about shad. In 1867, Seth Green made a proposition to the Massachusetts Fish Commissioners to go to the Connecticut river and hatch shad. This was the inauguration of shad raising. Massachusetts paid Mr. Green two hundred and fifty dollars, and he lost five thousand dollars worth of fish at his ponds while he was attending to the work. He did not know at first that shad required warm water, and the first experiment in such water as would suit trout was not successful. In the river where the temperature of the water was 80°, he put in another lot. After a few hours the eye spots appeared and he knew success was his. The speaker here read from a printed report of the Massachusetts Commissioners, showing the most wonderful increase of shad resulting from this experiment. The quantities taken out were so enormous that alarm was felt lest the river might be drained of them, and there was some talk of a protective law. Seth Green told them to let the fishermen go ahead; that he could put more shad in the river than they could take out, if they fished all the time. Shad fell from 30 cents to 3 cents per pound, and what had been the rich man's luxury became the every day diet of the poor man.

As to what has been done in this State, Mr. Stone said that about a year ago, the California Fish Commissioners employed Seth Green to bring some young shad to the Sacramento. They were put in at Tehama, but it is not absolutely certain that any of them have been seen since. About a month ago, some fish were seen in the river where the Pitt river empties in, and several persons who came from Connecticut pronounced them shad. The Indians would have nothing to do with them, a fact which proves the fish were strange fish to them.

In answer to a question as to the relative merits of the Eastern trout (*salmo fontinalis*), and the brook trout of California, Mr. Stone spoke decidedly in favor of the Atlantic species.

Fortunately it has been successfully introduced by the Acclimation Society.

Mr. Stone closed his remarks by urging the enactment of a law to protect our salmon, which he said would be scarce at no distant day if not protected.

HOME AND FARM.

Effects of a Dry Winter.

Beautiful sunshine and cloudless skies are fair to look upon and agreeable to the physical senses, but at this time of the year they are not ominous of future good to California. A dry winter indicates that an unprofitable summer must follow. Rain and snow are wanted by the farmer, the stock raiser, the miner, and even the lumberman. The mining and agricultural interests are the chief sufferers from drouth, but all other industries are affected by it. This mountainous portion of the State, which is chiefly valuable for its timber, will experience to some extent the ill effects of a rainless winter. Such a winter will not interfere with lumbering on the Truckee river, but will seriously affect the business on its tributaries. Prosser creek, Martis creek and the Little Truckee supply the means of bringing a large amount of wood, lumber and sawlogs to the line of the railroad. Fully one-third of all the wood and lumber marketed in Meadow Lake Township is made available by these three tributaries to the main Truckee. They receive their supplies of water in summer from the melting snows of the Sierras. If there is no snow to melt they will have no water to float saw logs, wood or railroad ties, mining timber, etc. The main Truckee river is one of those peculiar streams which do not suffer from drouths or floods. It has a natural reservoir of 300 square miles of surface to be drawn from in Lake Tahoe. A series of dams have also been constructed along the river between Truckee and the lake by which means the water can be accumulated at certain points and then discharged and used as wanted. The fine weather we are having, although it does not promise well for another season, has some compensating advantages just now, as it enables the saw-mills to continue in operation longer this winter than they otherwise would. It also facilitates getting lumber to the railroad and the cost of shipping it is less. Lumber goes principally by weight, and after it has been exposed for weeks to rain and snow from ten to fifteen per cent. is added to its weight.—*Truckee Republican.*

Farmers Should Care and Sell Their Bacon.

It seems to me strange, very strange, that farmers should allow themselves to be so much imposed upon. They are fleeced upon every hand. They are compelled to make the rich still richer. Capitalists form rings, combine together, and bind themselves not to pay over certain prices for nearly all kinds of commodities. Do the farmers of the west believe that the pork packers of Chicago, Cincinnati and St. Louis do not combine together and agree not to pay over a certain price for hogs? If they believe otherwise, I believe they are greatly mistaken. I believe, as certainly as I believe I am writing this, that the packers of every city have a perfect understanding as to price, and will not, dare not, pay more. Kings, combinations, monopolists are grinding the poor farmer down into the dust. They yearly impoverish the farmer. They rule and control everything—even our legislators themselves. Have the farmers any longer a hand in anything? They have become the mere dupes and tools of unscrupulous, designing men, who are themselves the tools of other men, whose bidding they cheerfully do. The farmers are in their meshes and can't free themselves, or rather will not do it. But I did not intend to say all this when I commenced this article. I want to say to farmers, become your own pork packers; put up your own pork and bacon, and put it up well, and then sell it in competition with these men who fix their own prices for others commodities. Farmers can make as good bacon and mess pork as pork packers themselves, and they can sell it at good prices. Farmers can also club together in a neighborhood and have some competent man put up their pork for them, and then, when cured, sell it. If the farmers would all put their heads together and work this way, they could soon burst all these rings and themselves make the fortunes which these rich men make by fixing up prices to suit themselves. I would like to hear what farmers have to say on this subject.—*S. P. in Colman's Rural World.*

SQUASHES.—A squash used to be a name which indicated a vegetable of moderate size, and had almost only one use, that of being boiled for the table, but now the name extends over a wide range of varieties, some of immense size, and more like pumpkins than our old-fashioned idea of the squash. In fact, it seems as if the good old-style Thanksgiving pumpkin stands in great danger of being rooted out by the new candidate for a place in the pies. Some great specimens of this vegetable from Minnesota have been on exhibition at the Institute Fair, and the papers tell of one raised in Calhoun County, Michigan, which weighed 160 pounds, also of a vine which grew 820 feet in length, one of the squashes on which weighed 207 pounds. No doubt California will double this and go still better.—*N. Y. Times.*

Utility of Farmers' Clubs.

A correspondent of the *Chico Enterprise*, speaking of the advantages to be derived from Farmers' Clubs, says: "No subject of so much importance to your patrons and the public generally receives so little attention as that which best promotes the welfare and prosperity of the agriculturist.

The every motive of his calling makes him, as a general rule, a peaceful, quiet and submissive being. The cultivation of the soil inspires man, or ought to, with a belief in the goodness and justice of a kind Providence. Hence, you may say he deals directly, on one side, with Him who is no "respector of persons." This very idea impresses him with the belief that other men are as honest as himself, and when he finds he is not, and that when the trickster, the speculator, the usurer, and all other persons who continually war upon his interest—when this class take all manner of advantage of his honesty and humanity, he will, in most cases, return to his farm, and through the peaceful exertions of his own labor, seek to recover what has been unjustly taken from him. This, I repeat, is the disposition and standing of the farmer of the present day. But a change is to be wrought. We must and will make ourselves the equal of other men, save in crimes, in all the departments of life—in intelligence, energy, wealth and all other qualities that elevate and dignify.

To do all this requires time, harmony and concert of action. Are not these in our hands? I say, yes. By harmonizing we can get together, make suggestions and submit questions, which, if carried out, will secure to us the profits and advantages that go to the merciless and overbearing speculator whose ancestors dealt in a "pound of flesh" with as much indifference as to the crime, as the present Shylock does in the sweat and labor of the poor wheat producer of California.

The farmers of Butte, Colusa and Tehama counties can well afford to pay a handsome salary to any competent man to go to Liverpool and make the necessary arrangements for the disposal of all the wheat raised for shipment. There are but very few farmers but what are perfectly willing to confide in the honesty and ability of Gen. Bidwell. It would amount to but a small tax upon each farmer, and all are blinded to their best and true interest who will not eagerly seek the first opportunity to connect themselves with such an organization.

Beautiful Illustration.

If a child had been born and spent all his life in the Mammoth Cave, how impossible would it be for him to comprehend the upper world. Parents might tell him of its life, its light, its beauty and its sounds of joy; they might heap up the sands into mounds, and try to show him by stalactites how grass, flowers and trees grow out of the ground; till at length, with laborious thinking, the child would fancy he had gained a true idea of the unknown land.

And yet, though he longed to behold it, when it came that he was to go forth, it would be with regret for the familiar crystals and rock-hewn rooms, and the quiet that reigned therein. But when he came up, some May morning, with ten thousand birds singing in the trees, and the heavens bright and blue and full of sunlight, and the wind blowing softly through the young leaves, all aglitter with dew, and the landscape stretching away green and beautiful to the horizon, with what rapture would he gaze upon them, and see how poor were all the fancies and interpretations which were made within the cave of things which grew and lived without; and how he would wonder that he could ever have regretted to leave the silence and dreary darkness of his old abode.

So, when we emerge from this cave of earth into that land where spring growths are, and where is eternal summer; how shall we wonder that we could have clung so fondly to this dark and barren life.

HORACE GREELY ON FAME AND HIS EPITAPH.—

"Fame is vapor; popularity is an accident; riches take wings; the only earthly certainty is oblivion. And yet I cherish the hope that the journal I projected and established will live and flourish long after I shall have mouldered into forgotten dust, being guided by a larger wisdom, a more unerring sagacity to discern the right, though not by a more unflinching readiness to embrace and defend it at whatever personal cost; and that the stone which covers my ashes may bear to future ages the still intelligible inscription: 'Founder of the New York Tribune.'"

HOW TO SAVE CLOVER SEED.—A Canada farmer put a wire bottom in a trough in which he fed his stock, the wire being two or three inches above the close bottom of the trough. The stock, in pulling the clover hay from the rack, would scatter the seed, almost pure, through the wire into the receptacle below. In this way he saved seed enough for his own sowing, and to pay for all the dry goods used in his family, and received \$25 in cash besides.

A MAN must be bolted and screwed to the community before he can work well for its advancement; and there are no such bolts and screws as children.

USEFUL INFORMATION.

Ought Shingle Roofs to be Painted?

If it is an economical practice to paint any other part of an architectural structure, most assuredly it is a commendable practice to paint shingles. We never could understand why certain builders have persisted in advocating not to paint shingles, except we judge them to be influenced by mercenary motives. Every intelligent builder is aware of the fact, that shingles and siding, when not painted, will wear out very much sooner than if they had been protected by a generous covering of paint. Hence, reasoning from a selfish policy, it is better not to paint shingles, because the paint will promote their durability, and whatever promotes their durability tends to diminish the labors of the craft, and thus curtail the revenue of civil architects.

The house in which the writer was born was covered with shaved pine shingles in the year 1805, at which time the roof received a generous coat of oil paint made of linseed oil and Venetian red. After twenty years had elapsed, another coat of paint nearly black was applied. Since that period, no paint has been applied, and it is now a good roof, for an old one. It does not leak, and the only repairs on it have consisted of a shingle added here and there, where a portion of a poor shingle was worn out. If the roof had not been painted, the butts of most of the courses would have been worn entirely away; and, if such long periods had not been allowed to intervene between the times of painting, the roof would have been a good one, even after the lapse of a hundred years.

Some one once suggested, that, if the roof is painted, the paint will cause the water to back up beneath the next course of shingles above, which will thoroughly saturate the two courses, and thus the decay of the roof will be hastened. That is unmitigated nonsense. There is not a word of truth in the assumption. On the contrary, when the surface is painted, the water will glide away so quickly that it will not be drawn back between the courses of shingles half so readily as it will be when no paint has been applied.

How to Paint.

The true way to paint a roof is to apply paint of some kind to both sides of the shingles. It is quite as important that the underside of every shingle be covered with paint as the surface, to prevent the water from being drawn up between the courses by capillary attraction. If good shingles are painted on both sides, and good paint be applied to the roof once in ten years, it will continue leak-tight for more than a hundred years.

When it is not desirable to save the water for drinking, coal-tar is an excellent and cheap paint for preserving shingles, and it will pay well to smear a roof with this material once in four or five years. When roofs are not painted, moss is liable to collect at the butts of every course of shingles, which promotes their decay more rapidly than alternate rain and sunshine.

When oil paint is used for painting shingles, it is always better to employ some light color rather than black, as the apartments of the attic story, beneath a black roof, are liable to be uncomfortably hot in the summer; and more than this, as black paint absorbs more heat than any other color, neither the paint nor the shingles will endure as long as if the roof had been covered with some light-colored paint. A metallic roof covered with light-colored paint will last much longer than if it had been painted with black paint. The most economical paint for a roof is a generous coat of coal-tar once in a few years; but coal-tar will color the water for five years after a coat is applied to the roof.—*Industrial Monthly.*

IS IT INSTINCT?—We usually explain all the actions of the lower animals as being guided by instinct. On this subject, Mr. A. R. Watson, an eminent scientist, writes: "It is said that birds do not learn to make their nests as man does to build, for all birds will make exactly the same nest as the rest of their species, even if they have never seen one, and it is instinct that alone can enable them to do this. No doubt this would be instinct, if it were true, and I simply ask for proof of the fact. This point, although so important to the question at issue, is always assumed without proof, and even against proof, for what facts there are, are opposed to it. Birds brought up from the egg in cages do not make the characteristic nest of their species, even though the proper materials are supplied them, and often make no nest at all, but rudely heap together a quantity of materials; and the experiment has never been fairly tried of turning out a pair of birds, so brought up, into an inclosure covered with netting, and watching the result of their untaught attempts at nest-making. With regard to the song of birds, however, which is thought to be equally instinctive, the experiment has been tried, and it is found that young birds never have the song peculiar to their species, if they have not heard it, whereas they acquire very easily the song of almost any other bird with which they are associated."

GAS-PROOFING INDIA-RUBBER.—Though there is nothing particularly novel (to chemists, at least) in the following, from an English exchange, some readers may nevertheless like to have the item:—

"Ordinary vulcanized india-rubber tubing becomes saturated with gas, which again evaporates at its outer surface, causing a most disagreeable smell. An invention for the prevention of this, by coating the india-rubber with varnish, has been patented. The chief novelty in it is that the varnish is easily made, and it renders the substance of the tube impervious to gases. This varnish is composed of linseed oil, fine litharge, or white lead, in the proportion of one quart of oil to one pound of litharge. These substances should be well boiled together until brought to a proper thickness or body, and while hot the composition is applied by running it through the tube to be coated or lined. The varnish for the outside is made by mixing one quart of linseed oil with half a pound of litharge, and by adding to the same about a gill of gold size. These ingredients should be well boiled together, and while hot should be applied with a brush or sponge.

ARTIFICIAL GEMS.—We saw, says the *Boston Journal of Chemistry*, a few days ago, in the hands of Alban Clark, Jr., some wonderful artificial rubies, emeralds, and sapphires, and some very fine artificial diamonds. They were all made by a French workman, and the emeralds are so perfect that they have even deceived experts. One of them was shown to a celebrated jeweller in Boston, some time since, and he at once pronounced it genuine, and gave his reasons for so doing. He said it was worth at least \$150, while in reality it was not worth more than \$5. The rubies have the exact composition of the native gems, and differ from them only in hardness. The process by which these gems are manufactured is known only to the inventor.

VARNISH TO IMITATE GROUND GLASS.—The *British Journal of Photography* gives the following receipt for this purpose: Dissolve ninety grains of sandarac and twenty grains of mastic in two ounces of washed methylated ether, and add, in small quantities, a sufficiency of benzine to make it dry with a suitable grain—too little making the varnish too transparent, and too much making it crapy. The quantity of benzine required depends upon its quality—from half an ounce to an ounce and a half, or even more; but the best results are got with a medium quantity. It is important to use washed ether free from spirit.

WHAT TO READ.—Are you deficient in taste? Read the best English poets, such as Thompson, Gray, Goldsmith, Pope, Cowper, Coleridge, Scott, and Wordsworth.

Are you deficient in imagination? Read Milton, Akenside, Burke, and Shakespeare.

Are you deficient in powers of reasoning? Read Chillingworth, Bacon and Locke.

Are you deficient in judgment and good sense in the common affairs of life? Read Franklin.

Are you deficient in sensibility? Read Goethe and Mackenzie.

Are you deficient in political knowledge? Read Montesquieu, the Federalist, Webster and Calhoun.

Are you deficient in patriotism? Read Demosthenes and the Life of Washington.

OIL ON THE WOODWORK.—Carefully conducted experiments have demonstrated the fact that seasoned wood, well saturated with oil when put together, will not shrink in the driest weather. Wheels have been known to run many years, even to wearing out the tires. Very many dollars to individual farmers might be saved annually in blacksmith's bills, especially in such seasons as the past, if this practice was adopted. Boiled linseed oil is the best for general use, although it is now known that crude petroleum on even old wheels is of great benefit.

HOW TO MAKE COLORED CHALK FOR TAILORS. Use.—Knead together ordinary pipe-clay, moistened, and ultramarine for blue, finely ground ochre for yellow, burnt ochre for red, etc., until they are uniformly mixed; roll out into thin sheets, cut, and press into wooden or metallic moulds well oiled to prevent sticking, and allow to dry slowly at ordinary temperature, or at a very gentle heat.

VALUE OF CHEMICAL EXPERIMENTS.—Not long ago, the whole stock of paraffine, in the world did not exceed 4 ounces, which was carefully preserved in the laboratory of Prof. Liebig as a chemical curiosity. There is now produced in Scotland alone not less than 5,800 tons annually. It thus often occurs that the unpaid labors of the chemist are made to benefit the world.

SPONTANEOUS COMBUSTION OF COAL.—A piece of bituminous coal lying on some dry pine boards against the side of a building in Millport, N. Y., spontaneously burst into flames on one of the recent hot days. It had been exposed to the rays of the sun nearly all day, the thermometer ranging from 100 to 105 degrees in the shade.

A NEW GREEN.—It is announced that a green of nearly the same brilliant shade as the poisonous "Paris green" may be obtained by taking twenty parts of oxide of zinc and one of sulphate of cobalt, mixed into a paste with water, and exposed to a red heat.

GOOD HEALTH.

Cold Weather and Warm Blood.

We should never allow ourselves to forget that nature intended us for warm blooded animals. In this climate of surprising changes, we are very apt to forget it, especially in the fall and spring. At such season, when we freeze and simmer on alternate days, there is engendered in us a certain recklessness, which takes no heed of cold or heat, dampness or dryness, and receives all temperatures with the same front, generally a defenseless one. It is certainly very troublesome to change front as often as the weather, and there is prejudice in American minds against such change, which has a great deal to do with the rapidly increasing population of our graveyards.

People like to have some stability of purpose, and if they can have it in nothing else they will have it in dress. They will not make a change until they make a permanent one for the season. No matter how hot it is in the spring, they will wear spring clothes until summer, and no matter how cool it may be in August, summer clothes must be worn until fall shall actually set in. Thus oft-times suddenly and with sad results we find ourselves approaching the condition of the fishes and lizards—for the chill, that alert forerunner of disease, is ever ready, in our climate, to take advantage of circumstances.

We suppose that there are no people in the world so indifferent to the demands of the weather—especially cold weather—as Americans, and one reason of this is that very many of us are ashamed to keep warm. To wrap up and button up and to button down windows whenever there is a chilling change in the air, argues, to most minds, a namby pamby eagerness to be well that is repugnant to the hardy American soul. So, rather than be laughed at, we shiver. We prefer tragedy to comedy, the grave to the ridiculous.—*Scribner's for November.*

TREATMENT OF POISONOUS BITES IN PERSIA.

Mr. Flaudin, in his narrative of a residence in Persia, relates a curious incident, which occurred when he was at Ispahan: The Persian servant of a European had been stung by a scorpion, and his master wished to apply ammonia, the usual remedy in such cases, but the man refused, and ran off to the bazaar. When he returned he said he was cured, and appeared to be so. The European, rather surprised at this almost instantaneous cure, questioned him, and found that he had been to a dervish, who, he said, after examining the wound and uttering a few words, had several times touched it with a little iron blade. Still more astonished at the remedy than the cure, the European desired to see the instrument by which the latter was said to have been effected. At the cost of a small pickech he was allowed to have it for a few minutes in his possession. After a careful examination, finding nothing extraordinary in the instrument, he made up his mind that the cure was a mere trick; that the dervish was an impostor; that the scorpion sting had not penetrated, and that his servant had been more frightened than hurt. He threw the blade contemptuously upon the table, when to his great surprise, he beheld it attach itself strongly to a knife. The quack's instrument was simply a magnet. But what power had the loadstone's attraction over venom? This discovery was very odd. Incredulity was at a nonplus, and yet the man stung by a scorpion was cured, and he who had cured him was in great renown at Ispahan for the treatment of that sort of wound.

A NEW CHILL CURE.—The local of the *Terre-Haute Journal* has discovered a new cure for ague. Here it is: To those afflicted with ague we say emphatically, crawl down stairs head-foremost. Laugh at the idea, if you please, but do your crawling first; you can then afford to laugh. Just as the chill is coming on, start at the top of a long flight of stairs and crawl down on your hands and feet, head, foremost. You never did harder work in your life, and when you arrive at the bottom, instead of shaking, you will find yourself puffing, red in the face, and perspiring freely, from the strongest exertions made in the effort to support yourself. It will effect a cure, beyond a doubt; but whether from this cause or from that, we will never tell you, nor need you care to know. Try it. It won't cost you near as much as quinine or patent medicines, and if it fails, it will only do what they do every day. If it cures, as it certainly will, lay the facts before our local scientists, and let them discover the cause. At all events, ye shaking sufferers, lay this maxim to your hearts: "Crawling down stairs head-foremost will certainly prevent a chill."

SALT AND THE AGUE.—The following appears as a leading editorial in the *Cleveland Herald*: "We wish to give a simple remedy for fever and ague, and wish to emphasize it by saying that it has to our knowledge proved very efficacious. It is simply common salt. A teaspoonful taken in water, and a teaspoonful deposited inside each stocking, next the foot, just as the chill is coming on. That's all there is of it; but knowing that it has been very efficacious in 'breaking' a chill and perfecting a cure, we put it in our editorial columns, where no humbug remedy shall ever find a place if we know it."

AGUE OR INTERMITTENT FEVER.—This disease consists of cold, hot, and sweating stages in succession, attending each paroxysm, and followed by intermission. The cold stage commences with languor, a sense of debility, and sluggishness in motion, frequent yawning and stretching, and an aversion to food. The face and extremities become pale; the features shrink. At length the patient feels very cold, and universal rigors come on, with pains in the head, back, loins and joints—nausea and vomiting of bilious matter; the respiration is small, frequent and anxious; sensibility is greatly impaired; the pulse is small, frequent, and often irregular, and the shiverings terminate in a universal and convulsive shaking.

These symptoms, abating after a short time, the second stage commences with an increase of heat over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety and restlessness; the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse has become regular, hard and full. If the attack has been very severe, then perhaps delirium will arise. When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, and this at length extends over the whole body. As this sweat continues to flow, the heat of the body abates, the thirst ceases, and most of the functions are restored to their ordinary state. This constitutes the third stage. When the paroxysms are of short duration, and leave the intervals quite free, we may expect a speedy recovery; but when they are violent, and attended with much anxiety and delirium, the event may be doubtful. Marsh miasma, or the fluvia arising from stagnant water, or marshy grounds, when acted upon by heat, are the most frequent causes of this fever.

The bilious, remittent and intermittent fevers which are so prevalent in the valleys of the great rivers throughout the United States during the Summer and Autumn, and remarkably so during seasons of unusual heat and dryness, are invariably accompanied by extensive derangements of the stomach and liver, and other abdominal viscera. There are always more or less obstructions of the liver, a weakness and irritable state of the stomach, and great torpor of the bowels, clogged up with vitiated accumulations. In their treatment, a purgative, exerting a powerful influence upon these various organs, is essentially necessary.

A DANGEROUS PAPER.—The green paper used to wrap about lozenges, sold in shops, railroad cars, and on the street corners, has long been suspected to contain arsenic, and with the view of ascertaining the facts by analysis, we recently purchased a roll of lozenges covered with this paper.

A qualitative examination of the paper afforded all the characteristic reactions for arsenic and copper. The wrapper contained 20 square inches of paper. Of this, 16 were taken for quantitative analysis. The result of the examination showed that this portion contained .1516 grams, or 2.34 grains of metallic arsenic. This is equivalent to 2.94 grains in the whole of the wrapper, a quantity sufficient to destroy life in an adult person. Children in all parts of the country are allowed to purchase the lozenges covered with this poisonous paper, and the rolls are often put into the hands of infants, as a plaything. As everything goes into the mouth of young children, it is easy to see that no more dangerous substance can pass into a family, than these packages of confectionery. It is quite probable that instances of poisoning have occurred from this cause, which have been of a serious or fatal character. There should be laws prohibiting the use of poisonous papers for any purpose.—*Boston Jour. Chemistry.*

NEW PLAN OF EXTRACTING BODIES FROM THE EAR.—Dr. Loewenberg, of Paris, describes a new plan for extracting solid bodies from the ear. A very small brush is made by rolling and fixing a narrow strip of old linen around a thin wooden handle (a match, for instance), and unravelling its free border to the length of a quarter of an inch. The end of the so obtained fringe is dipped into a warm and very concentrated solution of glue, applied to the visible part of the foreign body—or rather the operator leans it against the body by letting it glide very softly, and without exercising any pressure, over it. Previous to the application, the patient seats himself comfortably in an arm-chair or on a sofa, and inclines his head toward the healthy ear. He remains in this position for three-quarters of an hour after the introduction of the agglutinated brush. This time past, consolidation is generally accomplished, and the foreign body can be extracted by gently pulling at the brush.

MEDICAL TREATMENT OF MR. GREELEY.—Medical skill was exhausted in trying to save the great journalist. Every remedy and appliance was used in his case. One operation was reported which is but seldom witnessed in the treatment of mental maladies. It was performed by Dr. Brown Sequard, formerly of Paris, the highest medical authority on mental complaints. It consisted of the application of an iron heated to a white heat. This was drawn quickly down his spinal column from the neck to the hip-joint, in the hope that it would draw the inflammation away from the brain. The patient was in a torpid condition, and apparently did not experience any sensation from the operation.—*N. Y. Sun.*



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SAN FRANCISCO:

Saturday, Dec. 28, 1872.

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Close of Volume IV.

With this number of the PACIFIC RURAL PRESS,
goes the Index for the last six months, and
closes the fourth volume. We have endeavored
to give to our patrons a paper that should be a
credit to us as agricultural journalists, and to
make it the exponent and staunch promoter
of the great interests it claims more especially
to advocate.

We are sure we have spared no reasonable
effort to make the RURAL a welcome, interest-
ing, elevating and instructive journal. How
well we have succeeded in attaining the high
reputation we had hoped to merit, we leave
entirely with our readers. Of the continued
success of our enterprise we simply state, that
it fully equals our highest expectations and
encourages us to increased efforts for the
future.

With a renewal of our present large subscrip-
tion, and the additions daily received from all
parts of the world, we shall enter upon our
next volume, more than ever before, deter-
mined to spare no pains or reasonable cost to
continue and maintain the RURAL, as the best
agricultural journal on the Pacific Coast. We
have numerous correspondents in different
parts of the State and out of the State, who
will lend us the aid of their minds, their ex-
perience and their pens, and we shall endeavor
to increase the volume of our correspondence
by contributions from new sources.

To those who have kindly contributed to our
columns in the past we are truly grateful, and
desire a continuance of their favors. Our
thanks are also due to the Press which has so
generally made kindly mention of the RURAL.

And now, as the old year, with all its joys
and sorrows, its successes and disappointments,
will soon be laid in the sepulcher of the past,
and another and a new one will take its place
in the calendar of ages, so may we all of us,
bury our griefs and animosities in the same
tomb; and with bounding, joyous hearts, wake
to the morning light of Wednesday next, with
a heartfelt, Happy New Year to all the living.

A New Steam Press.

We have given our readers the best paper, ink and
press work of any widely circulated newspaper on
this coast. But we are not satisfied with that. We
want to serve our readers better. In order to do so, we
have ordered a new steam press of the latest and most
improved pattern for fine and fast newspaper work.
It is provided with an extra complement of distributing
rollers to enable us to use stronger ink, especially for
working engravings up to the best advantage. It is
now on its way from Chicago and will doubtless soon be
in running order, adjoining our composing and editorial
rooms, at 414 Clay St.

England and the Pacific Coast. An
Argument for Varied Crops.

Large tracts of land in California are better
suited to the growth of wheat than of any other
cereal, and particularly so is this the case with
the great San Joaquin Valley. It may also be
laid down as an axiom almost, that most of the
southern portion of the State will, outside of
wheat, profitably grow no other cereal whose
usual habitat is found in temperate climes. But
if this is true of the southern section, the re-
verse is probably true of many other places in
the north and particularly along the northern
coast.

From the Golden Gate to the Borders of Oregon.

And of course of Oregon and Washington it
is particularly true. Barley, oats, rye, flax,
etc., would in many cases be more profitable
were there a large market to be found for them.
But the farmer, from lack of information, gen-
erally imagine that all that he can profitably ex-
port is his wheat to England, a little barley to
Peru, and a little barley and oats to the west-
ern coast of Central and South America, to
Honolulu, Tahiti, China, and Japan. What a
mistake this is will be seen by the following
table.

ARTICLE.	QUANTITY.	VALUE IN DOLS.	PERCENT PRICES
BUTTER.....	331,365 cwt.	\$20,566,416.00	74c per lb.
CHEESE.....	798,106 cwt.	10,817,702.40	136c to 166c per lb.
WHEAT.....	27,397,205 cwt.	79,866,316.80	\$2.20 to \$2.96 cwt.
BARLEY.....	9,159,266 do	16,968,405.60	\$2.20 to \$2.96 cwt.
OATS.....	8,755,988 do	15,154,000.00	\$1.75 to \$2.00 cwt.
RYE.....	24,181,126 do	10,707,460.80	\$2.20 to \$2.96 cwt.
WHEAT, MEAL AND FLOUR.....	3,862,251 cwt.	7,209,619.20	\$7.50 to \$8.50
FLAX.....	1,098,894 cwt.	18,111,076.80	16c to 18c per lb.
WHEAT, MEAL AND FLOUR.....	864,251 do	7,806,004.80	18c to 20c per lb.
HOPS.....	689,105 do	11,318,544.00	14c to 16c per lb.
WHEAT, MEAL AND FLOUR.....	689,105 do	6,488,405.60	11c to 13c per lb.
WHEAT, MEAL AND FLOUR.....	689,105 do	1,632,619.20	11c to 13c per lb.
WHEAT, MEAL AND FLOUR.....	689,105 do	6,838,008.00	11c to 13c per lb.
WHEAT, MEAL AND FLOUR.....	689,105 do	7,927,682.00	11c to 13c per lb.
WHEAT, MEAL AND FLOUR.....	689,105 do	14,726,080.00	11c to 13c per lb.
WHEAT, MEAL AND FLOUR.....	689,105 do	4,838,318.00	11c to 13c per lb.
TOTAL.....		\$14,877,686.40	

The Immense Value

Of these English imports will be better ap-
preciated, when it is known that they equal four-
fifths of the whole exports of the United States,
for a similar period, and many times exceed all
exports of the United States in the particular
articles mentioned in the table. Not one of
these articles of domestic produce are there
that we do not grow, and of a quality far super-
ior to the greater quantity of them brought
from all quarters of the world to England.

England Wants

Every year, four times as much wheat as we
grow on this Coast; fifteen times as much bar-
ley; fifty times as much oats, and butter,
cheese and eggs almost without limit. She
needs nine million pounds of hops for her beer,
ale and porter; fifteen million pounds of tallow
and stearine for her soap and candle factories,
and over three hundred pounds of wool, ten
times over whole annual production for the
looms of Yorkshire. So that if they looked to
England alone

Our Farmers Need Never Lack a Market.

The farming population would have to in-
crease many times in number before it could
hope to meet the import wants of England, not
to speak of other lands; and for the future they
need not often fear high prices of tonnage.
Three pounds per ton or seventy-two cents per
cental is the highest freight that need be paid
for a long time to come. On wheat, barley,
oats, etc., this would be comparatively little,
and on butter, cheese, etc., it would be less

than one cent per pound at the present time.
Barley is \$2.20 and 6 cts., \$4. in England, and
this would leave an upward margin for the
buyer and producer. So that the farmer has
not only in the wants of England alone suffi-
cient inducement to vary his crops, but he may
be sure under ordinary circumstances of a
never-failing market for many, many years to
come.

Progress and Development of Silk
Culture in California.

[Article written by MR. ROMULUS BONHOMME, of Los
Angeles, for the *Courrier de San Francisco*, Translated
for the RURAL PRESS by C. H. D.]

California has lost a part of her revenues by
the exhaustion of her gold mines; she can cre-
ate for herself others by silk culture, thanks to
the fertility of her soil and to her favorable
climate.

Mr. Prevost was one of the first who engaged
in the raising of silkworms; he was the first
who made plantations of mulberry trees at San
José. Seeking in California through a thou-
sand difficulties, the most favorable climate, he
chose Los Angeles, where he made large plan-
tations, built a silkworm nursery, encouraged
laud-holders who were going into this new kind
of production, and he was about to reap the re-
sults of his labors when he died.

After his death, the plantations in Los An-
geles county were neglected. Several who had
gone into silk-culture, but who had no practi-
cal knowledge, became discouraged and aban-
doned their plantations.

At Santa Barbara

Messrs. Goux and Pakar who persevered,
have already obtained good results, and their
eggs are well known in France. Each year they
enlarge their plantation. Mr. Nicolas Larco,
of San Francisco, set out a plantation of mul-
berry trees of the better kinds, *Alba* and *Morella*,
on his farm at Mayfield. He raised some silk
worms and obtained good results; his eggs were
sent to Italy, and are now in demand. His
cocoon of a beautiful shape, and yellow color,
improve each year. They are remarkable in
the strength of the textile fibre and are rich in silk.

The Davisville Experiment.

I have just returned from Davisville, Yolo
County; from Sacramento, and from Nevada
City, where I ascertained the true condition
of silk culture. At Davisville, where I was
called, I found two large silkworm nurseries,
badly sheltered for the too changing temperature
of the country, badly built, and abandoned.
Nevertheless with certain alterations they
might have succeeded in raising silkworms—
but the plantation, which they called the
largest in California, has been destroyed, and
the four-year old trees taken up and burned.

At Sacramento the plantations of mulberry
trees are in the worst conditions because of the
marshy soil. Then the trees, set too close
absorb miasma capable of poisoning the better
races of silkworms. This region in my opin-
ion, will never be suitable for silk-culture.

The Foot-Hills the Best Locality.

At Nevada City it is quite the contrary. Mr.
Edward Muller who was the first in Nevada to
give attention to silk-culture, planted mulberry
trees of the better kinds *Alba* and *Morella*; these
are now so large that they have furnished
seeds for almost the whole country. Mr.
Muller is then the veritable propagator of plan-
tations.

He also engaged in raising silk-worms. He
obtained the best results. To-day his eggs are
well known in the States, in Austria, in Hun-
gary and even in Mexico, where they give every
year the most advantageous results. At the
Agricultural Fair at Sacramento he obtained a
premium and a gold medal. He has formed a
new plantation of mulberry trees, and in a
few years he can enlarge and extend his in-
dustry.

Choice Varieties of Mulberries.

Mr. Gillet, of Nevada, owns a plantation
which is a veritable prodigy in agriculture. He
made his plantation upon a rock which he was
obliged with much pains, first to clear, and
then to cultivate in such a manner as to form
there a suitable soil. He imported from France
a great number of fruit trees, and some mul-
berry trees of a fine kind lately adopted in
France by the raisers, the large leaved *Morus
Japonica*, which must not be confounded with
the *Mulicaulis* generally adopted, and impro-
perly used, in the greater number of plantations
in California. He has planted at a proper dis-
tance, and in good order some *Albas* and *Morellas*
and he has grafted a great number of them.

In this country where hand labor is the
great question, these new mulberry trees give
a great advantage, for with the same expendi-
ture in hand labor they produce double the
leaves. The efforts, the assiduous and intelli-
gent care, which Mr. Gillet gives to his plan-
tation, will assure him happy results. His
first silkworms, although still but few, are yet
very fine.

Messrs. Isoard and Weber, also, of Nevada,
engage also in silk-culture; they have formed
at some distance from the town a good planta-
tion, of good size and located under very good

conditions, and containing choice kinds of
trees. These three breeders have more than
20,000 mulberry trees.

This little mountain town, situated 2,500 feet
above the level of the sea, is the one which
promises the most for silk-culture; much more
than elsewhere progress is apparent, as shown
by the most favorable results, as well as by the
excellent quality of silkworm eggs. I have
myself used, this year, at Los Angeles, some
eggs from Nevada, and those from Mr. Muller
gave me the best results, as to quantity and
beauty of the cocoons.

Probable Future of the Industry.

California is still making only her first at-
tempt in the silk industry, but, nevertheless,
it is destined to give to silkworm raisers, as
well as to land-holders, the richest results, and
to their vast possessions a new and very re-
munerative production. The climate, in cer-
tain counties, is most favorable to the raising
of silk-worms; no indication of disease exists
in the whole country.

Those who had gone into this industry in Cali-
fornia used to say: "We find no sale for our
products; we do not know what to do with the
eggs, and still less with the cocoons."

I shall answer them: Make yourselves known
to Europe, whose want of eggs is so great
that she is obliged to resort to Japan; produce
the eggs, choose the best races, and you will
have not only orders, but also buyers at San
Francisco, as is already the case this year, on
account of the good results which your eggs
have given in Europe.

Besides the eggs there will be spinning estab-
lishments to use our cocoons, of which the
silk is so beautiful, and manufactories of silks,
which will be eager to buy the raw silks, supe-
rior to the silks of Europe.

Best Varieties of Worms.

The best eggs in California are at present
those called French Annual—varieties with yel-
low cocoons, imported long years ago from
Italy, from France and from Louisiana, bred
very advantageously by Mr. Rocchi, of New
Orleans; the Montaubans, with beautiful white
cocoon; the eggs of the Alps, and a new va-
riety identical with the finest old Italian kinds
of Lombardy; the Brianzas, imported from
France, raised with success at Nevada, by
Messrs. Muller and Gillet, with yellow co-
coons, of a fine form, well wound, and which
give the most beautiful of silk.

Not only is the climate of California favor-
able, but it has the advantage that, in reproduc-
ing the races it improves them, gives form to
the cocoon, and also more consistence and
weight.

I cannot yet say anything of the plantation
of Mr. Samuel Brannan at Calistoga (Napa
County), of which they give me favorable re-
ports; I shall visit it within a few days. I
shall not dwell upon the results which I have
obtained myself at Los Angeles, but I repro-
duce a certificate signed by prominent persons
in Los Angeles who visited my establishment:

"We certify that in November last there ar-
rived in Los Angeles an Italian silk raiser—Mr.
Romulus Bonhomme—and that in spite of the
difficulties occasioned by the bad mulberry
plantations, he has obtained in his first year
the best results. We certify also to having
visited his silkworm nursery during the raising
of his silkworms, and after the harvest, we
have witnessed his complete success; his co-
coons are of the most beautiful form and of a
fine type, which proves that the climate of Los
Angeles is very favorable to sericulture."

G. W. BARTER.
J. R. TOBERMANN.
J. G. DOWNEY.
T. W. TEMPLE.
E. F. FEDOLI.
G. B. SANGUINETTI.
J. P. WIDNEY.
R. MONTAGNE.

Los Angeles, October 29th, 1872.

Since preparing the above Mr. Bonhomme
has handed us the following:

Having also visited Calistoga (Napa county)
I can say that by its topographical position it
must be very favorable for the raising of silk-
worms; placed at the foot of the hills in a very
fertile valley, it is sheltered from the cold winds
by the Sierra Nevada, its air is always pure and
its sky limpid. Without being too much so it
is enough elevated not to be visited by the sea
mists, which deposit a saline dew upon the
leaves, which is very injurious to the worms,
not by the fogs of the bay or of the Sacra-
mento river, which give too much moisture to
the leaves.

The plantation of mulberry trees of Mr.
Samuel Brannan contains nearly 100 acres of
good land, and the trees are placed 24 feet
apart, so that in two years it may be set down
as the finest and largest plantation in Califor-
nia. His trees are all of the best kind, the
Alba.

There are at Calistoga two fine localities, and
by a few necessary changes there could be
made two good coconeries. I think this coun-
ty and the plantation of Mr. Brannan the
best chosen in all respects.

In two years the harvest of leaves may
reach 100,000 pounds, sufficient to raise 80
ounces of silk-worm eggs (from the egg) which
should produce at least 5,000 or 6,000 ounces
of eggs for exportation, or 6,000 pounds of co-
coons for spinning.

THERE are 6,000,000 real-estate owners in
the United States, the farmers being 4,000,000
of the number.

Floriculture. — Growing Plants from Cuttings.

The question is asked us—"why is it so difficult to get plant cuttings to grow in pots, in the country or, indeed, outside of green-houses generally?" The person making the inquiry says, she uses the best garden soil; keeps the pots in a warm, sunny place, waters them abundantly and yet, the cuttings are so slow in starting, if indeed they start at all.

We might suggest at least three good reasons, probably, why the cuttings do not grow well. One is, that they are not taken from the parent plant at the proper time of growth; the second, that instead of "the best garden soil" they should be started in nearly clean sand; and the third reason probably is, that the part of the cutting above the surface of the ground is kept, not perhaps too hot, but too dry.

W. Tyrone, in a valuable European exchange of ours, gives an article so directly in point, so timely and one that will set our fair correspondent so completely in the path to success, that we give it, together with a small cut the better to illustrate the process:

"Raising Cuttings."

A lady showed me, the other day, with much gratification, a little box of earth kept among leaf plants on the shady side of her house. It contained nice young plants of Verbenas, Geraniums, Ives etc., which she had grown from slips with no trouble at all! She was the more pleased because she never had any such before; but this time an expert friend of hers told her to set them in very fine mellow ground, press it around them, keep them damp, and avoid handling them. And here they are, rooted and growing, as easy as fun; nothing to do but to let them alone.

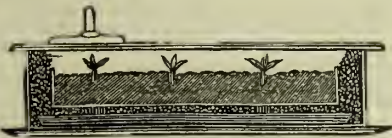
"Yes," said I; "very good, but we have had lately the finest of damp, warm, growing June weather. Suppose that a term of hot, dry weather, or a pinch of cold, such as we sometimes have even in June, should have come along. Would they let the cuttings alone?"

"Oh, I see; that is what a green-house is for; to shelter plants from such changes."

Yes, and to admit the needed light while giving the shelter. For infant plants, which require more steady and constant moisture of the air and soil, and even temperature than is necessary or best for older plants, it is common to have a little glass-covered enclosure within the larger one. And it is easy to have such a tiny little greenhouse on the window sill, as effective as anywhere, and it can be made in a few minutes.

A common large cigar box may be the house. A pane of glass to cover it will make the roof. A shallow pan, or two saucers of water in the bottom of the box, or 2 inches of fresh wet moss around its roots, or both, as in the section (fig. 1), will furnish vapor which the glass covering will retain, while admitting light. To prevent access of heat in case of the sun shining full on its glass roof, a piece of white paper can be laid on as a screen, and kept secure by a piece of glass, so that light may be excluded as little as possible during the day. And if cold nights should occur, the box is easily moved to a safer position.

The engraving shows in section, three cuttings set in the sandy mould in the inner box,



the pan beneath, the moss around, and the glass and paper and paper-weight above.

All necessary precautions are thus secured, and a crop of cuttings may be had, rooted, in a week or two, if they are taken green from the ends of the stoutest young shoots of an herbaceous plant, when just under full process of extension in growth. The lower leaves are taken off and the cuttings immediately set in the damp, sandy soil, before they fade in the least. They may be from 1 to 3 inches long, and the two or more leaves left on them may be clipped if they are very large, so as to reduce their length. The soil may be pure sand, if merely for rooting or striking the cuttings, as the phrase is. But whatever soil is used must be sweet and fresh, taken from the surface, where it has been long exposed to the light, the rain, and the free air. A piece of decayed sod, full of the fibrous roots, covered 1 or 2 inches deep with clean sand, will make an excellent bed, in which the young plants can feed well after they have rooted. On setting the cuttings in the sand, it should be once gently but thoroughly watered. With the surroundings indicated in the figure, is not likely to become dry; but if it should, water must be sprinkled on very gently, for the cuttings should not be suffered to flag in the least.

There is no such thing as "damping off," which sometimes destroys cuttings; but if the soil and box are sweet and clean, the temperature favorable and steady, the water pure and tepid, and given in vapor rather than in solid flow, the process of cell extension will go on within the cutting, rapid, as the frothing of beer but far too infinitesimally minute to be visible, and its extensions will soon appear in the form of new roots and new tips.

The Beckwith Sewing Machine.

Our object in giving an illustration of this machine is partly to secure the attention of the reader to the following facts: First, that it is in its way the best sewing machine in existence; and secondly, because we propose to offer it at a very low rate to the public as an inducement to subscribe to the RURAL PRESS.

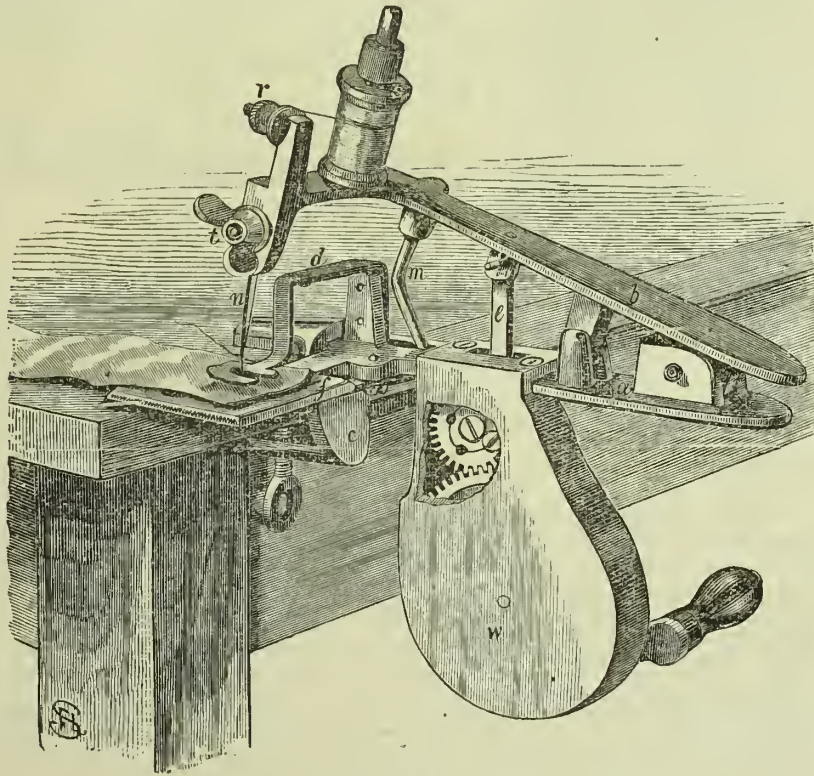
In proof of the high estimation in which this machine is held at the East, we copy the following from the *Scientific American*:

"To make a very cheap sewing machine has been the aim of many inventors. To make a very cheap and also a good one has been sought by some, but few have been successful in combining the two advantages of small cost and great utility. We, however, exhibit in the accompanying engraving one that possesses the utility of more costly machines, while it is furnished at a price below anything we have had of the kind that can perform the same work in as complete a manner. It is capable, as we have proved by operating it, of doing plainseaming, hemming, stitching, embroidering, and in short, most of the sewing done in families.

The stitch is the elastic loop-stitch, which has against many misrepresentations and much prejudice, gained a wide popularity, many now preferring it to the lock-stitch. In fact, a high-priced machine, which has had probably as large, if not larger, sale than any other in England, employs this stitch.

The American *Agriculturist* in speaking of this machine says:

We are prepared to indorse the Beckwith Sewing Machine as one worthy of being at



THE BECKWITH SEWING MACHINE.

once secured by all who cannot purchase the expensive machines; and, as will be seen below, many of those who have the larger machines will want this one in addition. Here are some of the advantages of the Beckwith machine:

1st. It is well and strongly made, and thoroughly electro-plated with nickel throughout, by the new process, which is decidedly superior to the usual thin silver-plating, as it is far more durable, and does not tarnish. It is simple in its parts, and its use quickly learned, and runs so easily that a child can work it.

2d. It is easily attached to any table or stand having a leaf or edge projecting an inch or so, and can thus be used in any part of the house, near a window, etc. It is so light and portable that a lady can carry it with her in a reticule when visiting or on a journey, ready for use at any moment. It is so convenient in this respect that it will be a useful addition where other machines are used, either for carrying to different rooms, or when two wish to sew at the same time. It is applicable for almost all kinds of family sewing.

3d. It makes the elastic loop stitch (the same as the Wilcox & Gibbs and some other good machines), which with a little care in making the closing stitch, is abundantly strong for nearly all kinds of sewing, and less liable to break in washing and wearing, owing to its elasticity. It has the advantage that the stitch can be removed when desired. Those who have lock-stitch machines, will find this stitch more convenient for many kinds of sewing, for embroidering, etc. Many contend that the elastic loop-stitch is more durable.

The foregoing should be satisfactory evidence of the value of the machine and the work it can do. And now we have made such arrangements with the makers of

the Beckwith machine that we can give it and two volumes of the PACIFIC RURAL PRESS, commencing with January and ending with December, 1873, inclusive, for the sum of \$14 and we particularly invite our subscribers to take the matter into serious consideration.

We will fill orders for machines at \$12 each with express charges added. It can be seen and operated at our office by patrons who wish to call and examine samples of its work.

Eucalyptus—Rapid Growth.

EDS. PRESS:—I saw a few days ago a notice in one of the daily papers, taken from an *Aspinwall* paper, about some trees there which in two years time from seeds had obtained a height of twenty feet. Now that is nothing very remarkable for a tropical climate. California can beat that easy enough. There are blue gum trees growing on the hillside, just two years old from seed, which now stand twenty-two and a half feet high; they were set out in April, 1871, when only four to six inches high and never irrigated. I do not doubt but there are still larger ones of the same age in other places. It speaks well indeed, for the immediate benefits to be derived from a Eucalyptus plantation. Several of them are fifteen inches around the body, and all stand well so far, without artificial supports, although much exposed to the north and southerly winds. Distances apart ten feet. For regular forest they may be only from four to six feet. C. M. PETERSEN.

D. D. & B. Insitute, Berkley.

Our correspondent must get up a bigger story than the one given by about ten feet, for the *Panama Star* and *Herald* gives a striking illus-

PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

By Special Dispatch, Dated Washington, D. C., Dec. 24th, 1872.

FOR WEEK ENDING DECEMBER 10TH, 1872.

REGISTERED PACKAGE ENVELOPE.—William F. McCrary, Baker Co., Oregon.

NUT LOCK.—Francis A. Bishop, Shingle Springs, Cal.

DISH WASHER.—Augustus W. Thornton, Mendocino, Cal.

APPARATUS FOR COMPACTING GRANULAR SUGAR INTO BLOCKS.—August F. W. Partz, Oakland, Cal.

MANUFACTURE OF ARTIFICIAL STONE.—Ernest L. Ransome, S. F., Cal.

NOTE.—The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

The Winter's Rainfall.

In compliance with inquiry, and for the convenience of those who think they can judge by the autumn rainfall, about what the winter and spring's rainfall will be, we annex a table showing the amount of rainfall in October, November, and December of each year, from 1860 to Dec. 26th, 1872; and in another column the total that fell in the next succeeding four months—in inches and hundredths of an inch; also the total rainfall for the seven months.

Oct. Nov. Dec.	Inchs.	Jan. Feb. Mar. Apl.	Following.	Total
1860	5.38	9.38		14.76
1861	10.81	22.92		33.73
1862	2.68	8.54		11.32
1863	3.30	3.64		6.94
1864	14.70	7.34		22.04
1865	3.27	12.19		15.46
1866	11.94	13.36		25.30
1867	16.66	15.82		32.48
1868	3.39	12.60		15.99
1869	4.93	8.37		13.30
1870	1.58	6.13		7.71
1871	11.20	11.30		22.50
1872	7.18 to Dec. 26th.			

Now, if there are those wise enough, from the foregoing, to predict what the rainfall will be for the next four months—on which the next year's harvest mainly depends—or, who can approximate towards a conclusion, based upon the above table, we would like to hear from them, and if furnished us, will publish it for the benefit of all concerned who read the RURAL.

In regard to weather predictions for four months ahead, we believe there is not that man living who can come any nearer to it than mere conjecture. If there are those who can come any nearer to it than a Digger Indian—we say again, we would like to hear from them.

San Jose Farmer's Club and Protective Association.

We have received the regular report of the proceedings of this club. Much of it pertains to arrangements that are in progress for the procurement of some place in which to hold their meetings, and also certain stalls in a market where the farmer can sell his produce without its going into the hands of middlemen.

A discussion also in relation to "American Flunkeyism" which cannot possibly interest the readers of the RURAL. We had supposed that in the Banner Valley of the State, as regards the production of agricultural wealth, we should from time to time hear of more interesting discussions on the culture of grains, vegetables and fruits, the rearing and management of domestic animals, the different breed of stock, horses, cattle, sheep, hogs, and poultry, and we do not despair of these discussions yet; and when they occur, shall be reported and published in full. We learn that the subject chosen for discussion at the next meeting is Irrigation, a subject always of interest to California farmers. We shall expect to hear of, and to publish an interesting discussion.

JUVENILE CLASSICS.—We have received from R. Shrugge & Co., publishers, N. Y., samples of juvenile books, under the above title, so beautifully printed in oil colors that they really please us. Our handsomest toy books have hitherto been importations from the British press, but now, by the aid of superior zincographing our American publishers are excelling in the production of cheap and really finely executed illustrations.



One Year Ago.

One year ago a ringing voice,
A clear blue eye
And clustering curls of sunny hair,
Too fair to die.

Only a year—no voice, no smile,
No glance of eye,
No clustering curls of golden hair,
Fair but to die.

One year ago, what loves what schemes
Far into life!
What joyous hopes, what high resolves,
What generous strife!

The silent picture on the wall,
The burial-stone,
Of all that beauty, life and joy
Remain alone!

One year, one year, one little year,
And so much gone!
And yet the even flow of life
Moves calmly on.

The grave grows green, the flowers bloom fair
Above that head:
No sorrowing tint of leaf or spray
Says he is dead.

No pause or hush of merry birds,
That sing above,
Tell us how coldly sleeps below
The form we love.

Where hast thou been this year, beloved?
What hast thou seen?
What rising fair, what glorious life
Where thou hast been?

The veil! the veil! so thin, so strong!
'Twixt us and thee:
The mystic veil, when shall it fall,
That we may see?

Not dead, not sleeping not even gone,
But present still,
And waiting for the coming hour
Of God's sweet will.

Lord of the living and the dead,
Our Savior dear!
We lay in silence at thy feet
This sad, sad year!

Homes Reduced by Dress.

Only those women who have not the money to "dress" can fully appreciate the crushing weight which society ruthlessly heaps upon this disability. To be unable to "dress" is to be treated with almost disrespect in the car, the boat, at the public gathering, the street, and the shop; to be ignored; to feel the shrug of contempt, the sneer of levity, and the smile of scorn; to be thrust aside; to be laughed at; to be to be ceremoniously displaced; to be cruelly driven out of good society; to have your heart, your intelligence, your thought, your virtue, your character held as nothing against silk; to be stung; to be outraged; to be proscribed; to be insulted; all this and much more for the lack of money "to dress."

It matters not whether this rule of society is right or wrong, the fact remains to blight and to ruin. The fashionable lady thinks nothing of paying \$75 for making a dress, made up of forty yards of silk, at from \$4 to \$10 per yard. These are the women who rule the street, drawing-rooms, theaters—dare we say churches. After such the lesser lights take pattern. What defense have the girls who work for from \$4 to \$10 per week against this array!

The rich can be fashionable, the poor cannot by honest means. The poor industrious shop girl looks upon even \$50 dresses, and they are beyond her reach. There is a \$40 gulf between her and them—between her and the respect and attention of society. Her virtue will span the chasm. She longs to lift the load of poverty, to receive the caress of society, to be freed from bondage. She sells herself to hell for dress. After the first step is taken it is not long before all useful labor is eschewed, and the foul vice made to be the only service of income. This is no picture, but what happens every day, and is a plain statement of how the recruits to brothels are made.

This mania for "dress" is devastating our American society and demoralizing American women to an alarming extent. The wives and daughters of the rich men who lead society in this fearful race of extravagance are responsible for a great share of the prostitution which curses the nation, as well as for thousands of business failures, scattered families, and the long train of miseries among us under the cover of "keeping up appearances." Let those who have the courage take this lesson and act upon it.

While ten men watch for chances, one man makes chances; while ten men wait for something to turn up, one turns something up; so while ten men fail, one succeeds and is called a man of luck, the favorite of fortune. There is no luck like pluck, and fortune most favors those who are most indifferent to fortune.

We are bound to be honest, but not to be rich.

Country Women.

A lady correspondent of *Moore's Rural* writes: I have read for a long time in your paper, of the trials our farmers' wives have to get along with their work, how little their labor is appreciated, etc., and I cannot help thinking there is cause, way down below the surface, that they fail to get at. Why, only see how times have changed! I am not as old as Methusalem, and I can remember when my mother did the work for twelve—I mean the washing, ironing, baking, sweeping, sewing and knitting, and in the season of it, would, in addition, spin her three run of yarn, and not think she worked very hard either.

But some one says the sewing then was nothing compared to now. I know that very well. The little Miss of ten years has a more extensive wardrobe than the young lady of eighteen used to have; but the sewing machine is, in a great measure, the cause of it. The tucks, ruffles and flounces of to-day could never be made by hand. How few there are, too, who find time to knit; it is so much cheaper to buy stockings; or, if they do not wear so well, get a knitting machine. See, too, the washing machine, churn powers, butter workers and other conveniences—and yet the woman of to-day has less time than the one of fifty years ago. Why is it? "Oh," she says, "woman's work is never done till she lies down in her grave." I say, "Fudge!" There is a principle that has taken root in our minds that it is a little more genteel to be delicate and to not work any more than we can help. I know there are honorable exceptions; still it has thrown out fibers all over our country, affecting men, and women too, and no where more than in the rural districts. The great amount of Irish help that has drifted among us has helped it along very much. Nearly every family can hire a girl, and mother can oversee Biddy in the kitchen, while the young ladies of the family crochet, play croquet, drum on the piano, and are tired to death all the time.

Does some one say, "This does not apply to common country people; they live upon farms and are obliged to work." I say it does apply to just such people. You will hardly go into a house in your neighborhood, or mine, but you hear about the hard work they have to do. Now, I have no patience with these puttering women, who will run all day in a half bushel. Don't be afraid of work; teach your girls to work, and don't be everlastingly complaining, in these days of machinery, that your work is never done. Go at it with a will, and do it.

Rich Without Money.

Many a man is rich without money. Thousands of men with nothing in their pocket, are rich. A man born with a good sound constitution, a good stomach, a good heart, and good limbs, and a pretty good head-piece, is rich. Good bones are better than gold; tough muscles better than silver; and nerves that flash fire and carry energy to every function, are better than houses or land. It is better than a landed estate to have the right kind of father and mother. Good breeds and bad breeds exist among men as really as among herds and horses. Education may do much to check evil tendencies or to develop good ones; but it is a greater thing to inherit the right proportion of faculties to start with. The man is rich who has a good disposition—who is naturally kind, patient, cheerful, hopeful, and who has a flavor of wit and fun in his composition. The hardest thing to get on with in this life, is a man's own self. A cross, selfish fellow—a desponding and complaining fellow—a timid and care-burdened man—these are all born deformed on the inside. Their feet do not limp, but their thoughts do.

CAN A WOMAN ENDURE IT? George W. Curtis has been lecturing on "Woman's Opportunities" before the Society of Mechanics and Tradesmen of New York city. Talking of co-education of the sexes, and alluding to the fact that public educational institutions of the higher grade are opening their doors to woman, he says:—"If anybody asks the question, 'Can a woman endure a college course of study? it is a woman herself who replies, I would like you to take 1,300 young men, place them up and hang 10 or 20 pounds of clothes on their waists, perch them upon high, narrow heels, cover their heads with rats and mice stick, 10,000 hair pins into their heads, and, if they can stand all this, as the women do, they will stand a college education.' [Laughter.] The highest authorities on this subject in this country agree that co-education is better for both sexes. Already the bolts of prejudice are softly sliding back to admit a nobler, because a juster future in the persons of women."

A MUDGY stream, flowing into one clear and sparkling, for a time rolls along by itself. A little further down they unite and the whole is impure. So youth, untouched by sin, may for a time keep its purity in foul company, but a little later and they mingle.

One of the Errors of the Age.

One of the growing evils of this country is the overwhelming desire on the part of young men to engage for life in pursuits that have not "the smell of shop" about them (says the *Journal of the Farm*), or to be more explicit, to engage in those classes of business which do not involve the necessity for practical mechanical skill, or even a theoretical knowledge of them. Thus we find thousands of farmers' sons rushing to the city, and eagerly seeking employment in stores as clerks or salesmen. A portion of them, with better judgment, apply themselves to the study of the professions, and hence it is that large cities abound with hundred of lawyers, physicians and clergymen, who eke out a miserable subsistence, and who, had Nature's rights been respected, should be following the plow, or doing duty in the workshop. Much of this unwholesome disposition is due to what are known as business colleges, the proprietors of which, by inflated advertisements, induce young men to believe that all that is necessary to success in life is a knowledge of bookkeeping, and that this knowledge can be obtained through their institution in the course of a month or two of ordinary study. Excited by these plausible stories, and believing—as many of them do—that a clerkship is not only a more lucrative, but more respectable avocation than that of a farmer, young men flock to the city, enter upon a course of two or three months, study in one of these mercantile colleges, graduate(?), and are awarded a diploma, setting forth the fact that they are thoroughly fitted to take charge of the books of any business house. It is only when these graduates are called upon to apply in practice what they found so easy in theory that they awaken to the fact that they have made a serious blunder, and, worse yet, that their visions of big salaries have dwindled down to figures that barely provide them with the commonest necessities of life. Occasionally one succeeds in doing better, but the instances are rare. Failure is the rule; success the exception.

It is not surprising, therefore, to find business men fighting shy of these mercantile college graduates, or to encounter at almost every step young men in fruitless search of clerkships, while our workshops and farms are sadly needing their services.

Parents Who Err.

Those who cling to the "good old ways" of their childhood, and who will not believe in their superior utility of anything new. Those who believe that a teacher "who can read, write and cipher," can teach the elements of an ordinary education as well as one who is a thorough scholar. Those who believe in \$18 per month *lesson hearers*, and are always "too poor" to employ teachers at \$50, or even \$45 per month. Those who are "too poor" to build good comfortable schoolhouses and furnish them properly. Those who are *too busy* to visit the schools, even once during the session.

Those who think they have done their whole duty when they have furnished their scholars with books and sent them to school. Those who permit their children to go home when they please, and stay home when they please, and yet expect them to learn as rapidly as any others in the school. Those who believe their children to be reservoirs of immaculate truth, and that under no circumstances whatever they could be induced to utter a falsehood. Those who always lend a ready ear to the most trivial complaint of their children. Those who animadvert justly or unjustly upon the conduct of the teacher in the presence of their children.

Those who employ a teacher in whom they do not place confidence. Those who labor under the impression that a child should never be sent to school if the said child dislikes the teacher.

Those who are chagrined and show their chagrin if their children are censured; and who, without examining their own conduct, lay the blame of their children's backwardness upon the teacher. Those who imagine, because they have brought up a family of children and been with them every day, that they know more of the character of children than the man who has hundreds of them under his care, of every variety of description. Those who are *too busy* to watch and train and mould the characters of their children in the right way. Those who believe their method of training children to be absolutely faultless. Those who expect teachers to be as faultless as they conceive themselves to be.

THE co-education of the sexes is making remarkable headway in this country. Four colleges in New England, among them the University of Vermont; Cornell University, in New York; and Swarthmore College, in Pennsylvania; Oberlin and Antioch Colleges, in Ohio; the State Universities of Indiana, Illinois, Michigan, Wisconsin, Iowa and Kansas, making no distinctions on account of sex.

YOUNG FOLKS' COLUMN.

A Story for Children.

A gentleman tells the following story which he asserts is truthful to the letter, and which we think will interest our little friends:—

This gentleman owned a fine horse which was very fond of him, and would come from the pasture at the sound of his voice, and follow him about like a dog. Well, at one time the horse became lame and was obliged to stay in his stable and not be used for many weeks, and it was during this time that Mr. C. became interested to see how much the horse knew and how kind his sympathies were. An old cat had made her nest upon the scaffold just above the horse's manger, and had laid there her little family of five kittens, to bring them up under good tuition, I suppose. She and the horse got along nicely for some days. She jumped down into the manger and went off for food, and came back and leaped up to her kittens again. But one morning she rolled off into the manger, with her foot bleeding, and badly hurt, so that she could scarcely crawl; but she managed to leap away on three feet and get her breakfast; but when she came back she was entirely unable to get up to her kittens, and what do you think she did? She lay down at the horse's feet, and mewed and looked up several times, till at last pony, seeming to understand her wants, reached down, took the cat in his teeth, and tossed her up on the scaffold to her kittens, who, I doubt not, were glad enough to see her. This, Mr. C. told me he saw repeated morning after morning. Kit would roll off into the manger, go and get her breakfast, come back, and be tossed up to her family by the kind horse, who must have understood cat language and been willing to listen to it.

THOUGHT OF HIS MOTHER.—"Apples! Apples! "Where? "Where?"

"In the barrel on that black man's shoulder." Fifty boys, more than that, a hundred, yes two hundred boys, rushed pell mell over each other to get the apples. The black man poured them out on the grass. The boys crowded and pushed about them as flies gather round spilled sugar.

They filled their pockets, every one, and their hats, and even their jackets.

What would they do with so many apples? Some boys began to throw them at each other, and some to eat them. But one little fellow wished his poor mother in the city could have a share in his picnic. So he thought he would take her some apples.

He got all that he could carry, and then sat down on the grass under a tree, and counted them.

How many had he? Guess. Fourteen! Did you guess as many as that?

How good they tasted to his mother! Better than any other apples could taste, because her little boy thought of her, and saved them for her.

BE SOMEBODY.—"What is the use of being in the world unless you are somebody?" said a boy to a friend.

"Sure enough, and I mean to be," answered the other. "I began this very day. I mean to be somebody."

Ashton looked George in the face. "Began to-day! how? What do you mean to be?"

"A Christian boy, and so grow to be a Christian man," said George. "I believe that is the greatest somebody for us to be."

George is right. There is no higher manhood; and it is in the power of every boy to reach that. Every boy can not be rich; every boy can not be a king; every boy can not be a lord; but God asks you all to a Christian manhood—to be His sons, and so, with His Son Jesus Christ, to be heirs of heaven.—*Apples of Gold.*

GOOD HABITS.—Remember, boys, before you are twenty you must establish a character that will save you all your life. As habits grow stronger every year, any turning into a new path is more and more difficult; therefore it is often harder to unlearn than to learn; and on this account a famous flute-player used to charge double price to those pupils who had been taught before by a poor master. Try and reform a lazy, unthrifty, or drunken person, and in most cases you fail; for the bad habit, whatever it is, has so wound itself into this life, that it cannot be uprooted. The best habit of all is the habit of care in the formation of good habits.

A LAD accosted an aged Senator thus: "Are you a member of the Legislature?" The Senator, looking down from an eminence of six feet three, replied, "Yes, my son; what can I do for you?" "Why," said the urchin, "I want to be a messenger; I'm eight years old and have never yet had an office." That boy has evidently mastered the science of politics.

THOSE BOYS.—Pending the occurrence of a threatened earthquake, a South American pater-familias sent his boys to stay with a friend beyond the limits of the fated section. The convulsion did not turn up when due, but the youngsters remained in their place of safety till the following note from the host procured their recall:

"Dear P——. Send the earthquake along here, and take home your boys."

DOMESTIC ECONOMY

Putting up Stoves.

We have no doubt but that a great many of our readers will find their own experience reflected in the following amusing account, by an unknown author, of a disagreeable task to be performed, at the approach of the winter season of the year in many households:

The first step a person takes is to put on a very old and ragged coat, under the impression that, when he gets his mouth full of plaster, it will keep his shirt bosom clean. Next he gets his hand inside the place where the pipe ought to go, and blacks his fingers, and then he carefully makes a black mark down the side of his nose. It is impossible to make any headway in doing this work until this mark is made. Having got his face properly marked, the victim is ready to begin the ceremony. The head of the family—who is the big goose of the sacrifice—grasps one side of the bottom of the stove, and his wife and the hired girl takes hold of the other side. In this way the load is started from the woodshed toward the parlor. Going through the door, the head of the family will carefully swing his side of the stove around, and jamb his thumb nail against the doorpost. This part of the ceremony is never omitted.

Having got the stove comfortably in place, the next thing is to find the legs. Two of them are left inside the stove since the spring before; the other two must be hunted after for twenty-five minutes. They are usually found under the coal. Then the head of the family holds up one side of the stove while his wife puts two of the legs in place, and next he holds up the other side while the other two are fixed, and one of the first two falls out. By the time the stove is on its legs, he gets reckless, and takes off his old coat, regardless of his linen. He goes off for the pipe, and gets a cinder in his eye. It don't make any difference how well the pipe was put up last year, it will be found a little too short or a little too long. The head of the family jams his hat over his eyes, and, taking a pipe under each arm, goes to the tinshop to have it fixed. When he gets back, he steps upon one of the best parlor chairs to see if the pipe fits, and his wife makes him get down for fear he will scratch the varnish of the chair with the nails in his boot-heel. In getting down, he will surely step on the cat, and may thank his stars if it is not the baby. Then he gets an old chair, and climbs up to the chimney again, to find that, in cutting the pipe off, the end has been left too big for the hole in the chimney. So he goes to the woodshed, and splits up one side of the end of the pipe with an old axe, and squeezes it in his hands to make it smaller. Finally, he gets the pipe in shape, and finds that the stove does not stand true. Then himself and wife and the hired girl move the stove to the left, and the legs fall out again. The next move is to the right. More difficulty with the legs. Moved to the front a little. Elbow not even with the hole in the chimney, and he goes to the woodshed after some little blocks. While putting the blocks under the legs, the pipe comes out of the chimney. That remedied, the elbow keeps tipping over, to the great alarm of his wife. He then gets the dinner-table out, puts the old chair on it, gets his wife to hold the chair, and balances himself on it to drive some nails in the ceiling. Drops the hammer on his wife's head. At last gets the nails driven, makes a wire-swing to hold the pipe, hammers a little here, pulls a little there, takes a long breath, and announces the ceremony completed. Job never put up any stoves. It would have ruined his reputation, if he had.

True, every word of it. We know how it is ourselves.

AMERICAN DIET.—We are a greasy people; from the pork fat of New England to the ham-fat of the South we wallow in greasy food. This becomes rancid on the stomach, and superinduces what Dr. Urquhart pronounces the sum of all diseases—dyspepsia. We drink tea that would frighten a Chinaman, and coffee that would serve as an antidote to opium. We pour down doses of alcoholic fluids which eat into the coatings of our intestines and destroy the gastric juices. We go to bed over-taxed, body and mind, sleep with sluggish blood in a state of stagnation, and get up only when the broad sun is staring in angrily at us through our bed room windows. We are reckless in our pursuit of pleasure; we strain our mental powers to their utmost tension; and end, old men and women before our time, or die, or fill a cell in an insane asylum.

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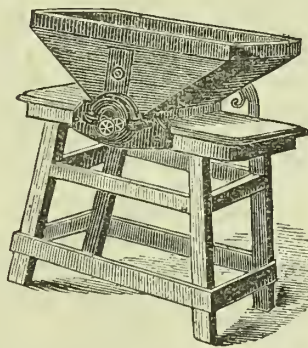
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Retrospective Glance.

Twenty-three years ago, the weary pioneer stepped his foot on our golden shore, glad to rest from the long tedious plains, and breathe our warm genial atmosphere. As he passed o'er our mountains, hills and valleys, seeing our varied climate, scenery, quality of soil, growth of grain and fruits, and fine markets, he adapts some portion that is congenial to his taste and health, and there commence his home anew; but confining our remarks to those who entered our broad valleys, extending in a southerly direction, the eye at once catches the "stars and stripes" waving majestically o'er the pioneer's home.

"Sutter's Fort,"

Situated one mile and a half east of the Sacramento river, in an elevated plat of land, surrounded with an adobe wall, with port holes and gates. A general resort for many a weary emigrant, welcoming the home and retreat of the early settler. Pioneers, is that home preserved from the savages of time, kept in honor of the one who braved the perils of the plains, opening the way westward, and sent the joyous news of the land of gold throughout the universe? No! It's fast going to decay, a few more years it will be numbered with what was—now is not.

City of the Plains.

Few still remain who saw the embryo, and rise of the now beautiful capital, situated on the Sacramento, and mouth of the American rivers, with its homes of tents and stores of produce, busy scenes of incomers and outgoers, long trails of mules, laden with provisions destined to the various portions of the State. Eager sellers preparing a home for the coming season, thousands of people thronging the banks, welcoming the first steamer McKim, with its band of music, as it glides gracefully up the shore, to their landing place. The city shaded with the mighty oaks of the forest, wild grapes hanging in thick clusters from the vines along the river, selling readily at \$1 per quart. The natives bringing in baskets formed of willows filled with blackberries, with thousands of like incidents are familiar to the early pioneer.

The Surface

Of the plains, lay mostly level but rising gradually as you seek the foot-hills, with here and there a high knoll or hill is found, how so formed, by what means, and the extent of time is a point of conjecture in the annals of history. One of these is some four miles southeast of Sacramento, called "Prospect Hill," so named, as I am informed by Sutter, during the early outbreak in the southern part of the State. Placing sentinels on the look out for troops, sending dispatches to and fro from the fort.

The Soil

Along the rivers, is a deep, black alluvial ingredient, rich and producing fine vegetables, fruit and pasture. There being so much decayed matter produced by the foliage of the thick growth of woods every year, the soil makes a rank growth of trees and shrubbery, and produces wonderful crops by its fertilizing qualities.

Leaving the river a mile eastward you enter a higher plat of land of a far different composition, and not so rich a material of quality, composed of adobe and bluish, sticky clay, a tough texture not easily worked, but produces good crops of hay and grain. When dry it opens in long cracks interweaving like wet work.

Passing a few miles further, you encounter still another composition of soil of decreasing quality, still adapted for more uses than what kind has been named. The soil is of a red color varying from 3 to 5 feet deep; when cultivated, of a loose nature, somewhat sandy, but not enough to be loose and pliable; adapted for small fruit and the lime. It lays in a strata of hard substance called "hard-pan" of a wavering position. Some portions of the soil deepens as the hard-pan takes its course. The depth varies from 30 to 40 feet; underneath still lies a tough yellow clay of a few feet and then you find a bed of quicksand, giving sufficient water to our wells for watering purposes.

The benefit arising thereby—it retains all moisture near the surface as long as any remain, even throughout our hottest portion of the summer. The evaporation constantly arising, while in other soils the moisture sinks, leaving the surface dry and hard. Our heavy winters, as last year was, kept it wet so late in the spring that it retarded the work, leaving a great deal of it undone, but that was an uncommon year and may not occur again for ten years to come, as it was in '52 '62 and the present year of '72. One other variation of soil occurs as you verge near the foot-hills; the land becomes red and gravelly, as it changes its level form to one of rolling and hilly; the soil producing pasture land, sheep and cattle ranging from one portion to another. Here you strike the live oaks and shrubs, while our valleys are barren of any natural growth of trees, with few exceptions, which are found in clus-

ters dotted here and there looking like a green spot in a desert, the remaining portion one vast waste of land, sheltering neither man or beast till it was gradually filled up by early settlers that planted trees and made it what it now is.

G. R.

Sacramento county, Dec. 7th, 1872.

Sun Spots and the Periodicity of Floods.

At the last meeting of the Academy of Sciences the following discussion took place which will be of interest to our readers.

Dr. A. W. Saxe said he had been a resident of this city since 1850. He had watched the character of the seasons since that time, and from conversations with the old inhabitants of the country, the Spaniards, he had been able to trace back very reliably the periods of excessive rain-fall since 1832. Having read some portions of Humboldt's "Cosmos" as to the obscuration of the sun by spots, their decennial increase and diminution, and their effects upon the magnetic phenomena of the Earth, he had been led to examine the matter, and had found that our flood seasons corresponded very nearly with the period of minimum obscuration of the sun.

The President said the periodicity of the sun's spots, and of the variation of the magnetic needle has, from latest observations and discussions, eleven years and 3-hundredths of a year. There was a saying in the West that the floods of the Mississippi occurred every nine years. Whether any accurate record had been kept he did not know; but if there was a cosmical cause it was more likely to have a regular period than not.

In reply to the President, Dr. Saxe said he had not been able to get a perfectly accurate weather-table. He had taken his data partly from the memory of old residents as to floods that had overflowed the country.

Dr. H. Gibbons had some doubt as to whether the ten-years theory could be sustained in regard to our Winters. The weather periods were very pliable, and facts ought to be established sufficiently before explanations were given. He had examined the weather table, and there was certainly hardly any data for the inference of every tenth year being an abundantly rainy season. For two or three successive periods there had been rainy Winters near the tenth year, but there had been Winters still more wet occasionally in the intervals, and it was quite likely that if two or three other figures were taken besides ten, a similar inference might be drawn with regard to the last twenty-three years. In reference to almost any rules that could be deduced, he had very frequently, in casting his eye over the seasons to which his record referred, come to conclusions.

Now he thought he had got a rule that hitherto had held, but almost invariably the very next occurrence violated the rule, and the rule was gone as soon as it was deduced. The fact was, it required a very much longer period of time than twenty-three years to establish any rule in regard to weather. In Europe, where they had been examining this subject most minutely for centuries, they had not yet adopted or come to any conclusion on the subject. There was no means of predicting the character of the coming season. In the Atlantic States, where observations extended back for the greater part of a century, nothing more conclusive had been obtained with regard to the severity of the approaching winter than the indications of a goose's bone, perhaps, or the sayings of some Indians, or the doings of squirrels or some other animals. The scientific data furnished no record upon which to estimate the character of the coming season, and it was hardly fair to conclude that here in California, 22 or 23 years of experience would furnish us with rules. Of course, he did not wish to discourage inquiry, but the statements of old inhabitants as to the weather were to be taken with a great deal of allowance. It was very seldom that any of these confident statements were sustained by the result.

How THEY DO IN REDWOOD CITY.—The people of this flourishing little city have just been giving an example worthy of being followed by every town in California. A few months since they determined to establish a boot and shoe manufactory, and this they have effectually done by a donation of land and aid in money, the subsidies thus granted equalling in amount \$5,000. What the people of Redwood City have to show for all this is a flourishing boot and shoe factory which will in a few months employ one hundred and fifty hands, and manufacture \$300,000 worth per year. These one hundred and fifty hands with the families of those married, and the trades-people whom they will draw around them will add fifty per cent. to the population of Redwood City. We say to the people of every small town on the Pacific Coast, go thou and do likewise.

OIL WELL IN NAPA Co.—Oil has been discovered in Berryessa Valley, exuding from crevices in rocks and floating on the water of a stream. On examination by an expert, it proved to be crude petroleum. Arrangements have been made to commence boring next Spring.

CHRISTMAS.—The day though wet, was very generally observed by the citizens of San Francisco. Nearly all business was suspended, if we except that of the package department of Wells, Fargo & Co. Never before do we recollect of witnessing so general a determination beforehand, to keep Christmas, and then when it came, to see that it was kept, as on Wednesday last; and it has established one fact in connection with poultry growing; that where chickens and turkeys are fed with too much old rye, their flesh has a very strange effect upon the consumer; and hence upon our streets—

Many a one seemed quite content
To crow or gobble as he went.

NEW YORK SEED WAREHOUSE.—We have just received the handsomely illustrated Seed Catalogue, of R. J. Trumbull, who, as successor to C. L. Kellogg, of 427 San Francisco, offers to the farmers, gardeners and florists of the Pacific Coast a complete stock of the seeds of trees, plants, vegetables, grasses, clovers and flowers, grown in all latitudes and altitudes within the limits, south and north of California and Alaska. Send for Catalogue.

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CLERGYMEN READ IT.—We have no authority, but take the liberty of publishing the following note:

Eds. RURAL.—I am much pleased with the PACIFIC RURAL PRESS. Its weekly visits are more than welcome, and its pages are read with interest. Enclosed is a money order for renewal of subscription for next year.

Truly yours, REV. A. C. DuBois.
"Scattering seeds"—If you think best to send three or four numbers to A. F. Frink, Plymouth, Richland Co., Ohio, I would be pleased to have you do so.

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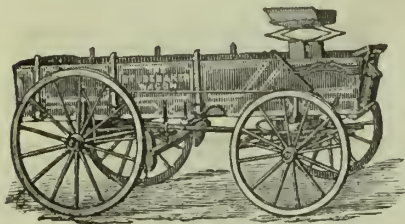
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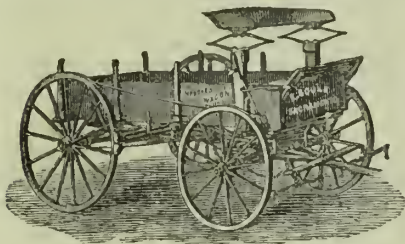
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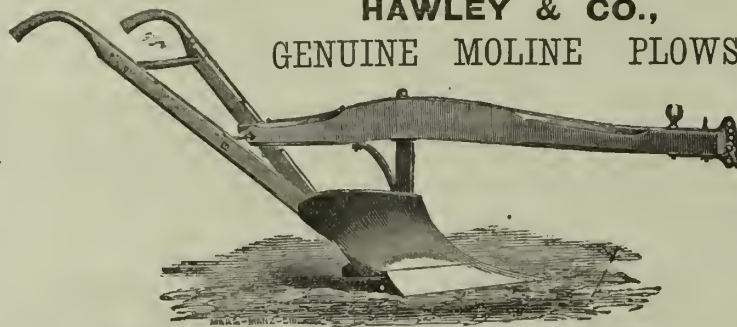
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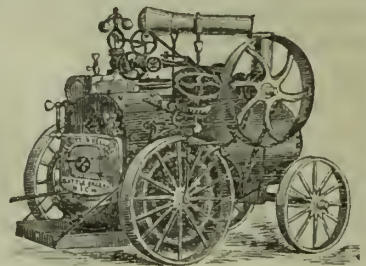
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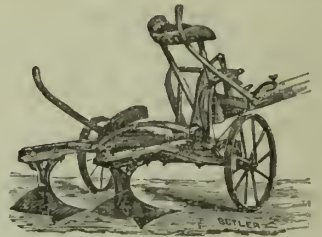
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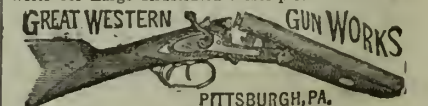
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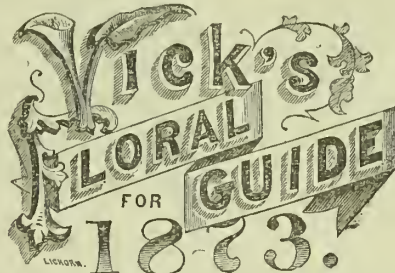
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